

**SOLICITATION, OFFER AND AWARD**

2. CONTRACT NO. W91CRB-11-D-0008		3. SOLICITATION NO. W91CRB-10-R-0046	4. TYPE OF SOLICITATION [ ] SEALED BID (IFB) [X] NEGOTIATED (RFP)	5. DATE ISSUED 29 Jul 2010	6. REQUISITION/PURCHASE NO. W91Z3120108031
7. ISSUED BY US ARMY RDECOM CONTR CTR - W91CRB 4118 SUSQUEHANNA AVENUE ABERDEEN PROVING GROUND MD 21005-3013			CODE W91CRB	8. ADDRESS OFFER TO <b>See Item 7</b>	(If other than Item 7) CODE
TEL: FAX:			TEL: FAX:		

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

**SOLICITATION**

9. Sealed offers in original and 8 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in \_\_\_\_\_ until 11:00 AM local time 10 Sep 2010  
(Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME TYRONE M. KNIGHT	B. TELEPHONE (Include area code) (NO COLLECT CALLS) 410-278-2465	C. E-MAIL ADDRESS tyrone.m.knight@us.army.mil
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**OFFER (Must be fully completed by offeror)**

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within \_\_\_\_\_ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52.232-8)

14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR QINETIQ NORTH AMERICA, INC. 350 2ND AVE WALTHAM MA 02451-1104	CODE 5B2G7	FACILITY 5B2G7	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)
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15B. TELEPHONE NO (Include area code)	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE. <input type="checkbox"/>	17. SIGNATURE	18. OFFER DATE
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**AWARD (To be completed by Government)**

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT \$38,424,799.18	21. ACCOUNTING AND APPROPRIATION See Schedule
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22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c)( ) <input type="checkbox"/> 41 U.S.C. 253(c)( )	23. SUBMIT INVOICES TO ADDRESS SHOWN IN ITEM (4 copies unless otherwise specified)
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24. ADMINISTERED BY (If other than Item 7) CODE	25. PAYMENT WILL BE MADE BY CODE
<b>See Item 7</b>	

26. NAME OF CONTRACTING OFFICER (Type or print) TYRONE M. KNIGHT TEL: 410-278-2465 EMAIL: tyrone.m.knight@us.army.mil	27. UNITED STATES OF AMERICA <i>Tyrone M Knight</i> (Signature of Contracting Officer)	28. AWARD DATE 29-Oct-2010
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IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

Section B - Supplies or Services and Prices

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	IGDS Systems FFP The contractor shall deliver IGDS in accordance with SOW and performance specification. Deliveries for a period of 3 years. Actual pricing shall be in accordance with QinetiQ priced proposal as listed in attachment J. FOB: Origin PURCHASE REQUEST NUMBER: W9123120108031	10,000	Each	\$3,100.00	\$31,000,000.00

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NET AMT \$31,000,000.00

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
000101	Funding FFP FOB: Origin PURCHASE REQUEST NUMBER: W9123120108031	UNDEFINED		UNDEFINED	\$0.00
	ACRN AA CIN: 00000000000000000000000000000000			MAX NET AMT	\$0.00





ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
000202	Funding FFP FOB: Origin PURCHASE REQUEST NUMBER: W9123120108031	UNDEFINED		UNDEFINED	\$0.00

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MAX NET AMT	\$0.00
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ACRN AA	\$0.00
CIN: 00000000000000000000000000000000	

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
000203	Funding FFP FOB: Origin PURCHASE REQUEST NUMBER: W9123120108031	UNDEFINED		UNDEFINED	\$0.00

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MAX NET AMT	\$0.00
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ACRN AA	\$0.00
CIN: 00000000000000000000000000000000	

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0003	Training FFP The contractor shall develop and provide training materials for the Government IAW SOW paragraph 3.5.7 FOB: Destination PURCHASE REQUEST NUMBER: W9123120108031	2	Lot	\$26,593.59	\$53,187.18

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MAX NET AMT \$53,187.18

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
000301	Funding FFP FOB: Destination PURCHASE REQUEST NUMBER: W9123120108031	UNDEFINED		UNDEFINED	\$0.00

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MAX NET AMT \$0.00

ACRN AA \$0.00  
CIN: 00000000000000000000000000000000







## Section C - Descriptions and Specifications

STATEMENT OF WORK

**STATEMENT OF WORK (SOW)**  
**for**  
**PRODUCTION**  
**of the**  
**Individual Gunfire Detection System (IGDS)**

- 1.0 Scope. This Statement of Work specifies the tasks and efforts the contractor shall perform and products to be delivered in support of the Individual Gunfire Detection System (IGDS) program. The IGDS are required to fulfill requirements of five systems for each Infantry Squad authorized in the Total Force. This SOW defines the technical, program management, configuration management, quality assurance, and safety requirements for this procurement. The contractor shall ensure that the delivered IGDS system complies with the requirements listed under paragraph 3. The contractor is encouraged to use commercial/industrial processes and practices that will reduce production and operational support costs while meeting the requirements of this contract.
- 1.1 Background. The procurement of a low-cost, lightweight, soldier-worn, micro-acoustic array that instantly alerts a soldier to the origin of hostile enemy fire is derived from Operational Needs Statements (ONS) from the 101st Airborne was received in April 2003 requiring a portable, flexible, robust, and accurate means of detecting hostile fire and from the 56th Stryker Brigade Combat Team (SBCT), 28th Infantry Division (ID) in July 2008 seeking a durable, lightweight, low profile, low power sensor with the flexibility for mounting to various Modular Lightweight Load-carrying Equipment (MOLLE) systems to provide bearing and distance to hostile shooters within 1 seconds.
- 2.0 Applicable Documents. The following documents form a part of this SOW to the extent specified herein. The contractor shall report any conflicts within this SOW or documents referenced herein to the Government Procuring Contracting Officer (PCO) for resolution.
- 2.1 Government Documents.
- 2.1.1 DOD 5220.22M National Industrial Security Program Operating Manual
- 2.1.2 MIL-STD-130 DoD Standard Practice Identification Marking of U.S. Military Property
- 2.1.3 MIL-STD-1916 DoD Test Method Standard, DoD Preferred Methods For Acceptance of Product
- 2.1.4 MIL-STD-1913 Dimensioning of Accessory Mounting Rail for Small Arms Weapons
- 2.1.5 MIL-STD-40051 Preparation of Digital Technical Information for Page-Based Technical Manuals
- 2.1.6 MIL-PRF-49506 Logistics Management Information
- 2.1.7 FED-STD-595 Colors Used in Government Procurement
- 2.1.8 GEIA-STD-0007 Logistics Product Data
- 2.2 Performance Specifications. Purchase Description for the IGDS dated 6 Apr 2009
- 2.3 Non-Government Standards.
- 2.3.1 ANSI/ASQ Z1.4-2003 Sampling Procedures and Tables for Inspection by Attributes
- 2.3.2 ANSI/NCSL Z540.3-2006 Requirements for Calibration of Measuring and Test Equipment
- 2.3.3 AMSE Y14.5-1994 Dimensioning and Tolerancing
- 2.3.4 ANSI/ASME Y14.35M-1997 Revision of Engineering Drawings & Associated Documents
- 2.3.5 ANSI/ASME Y14.100-2004 Engineering Drawing Practices

- 2.3.6 ASTM D 1729 Standard Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials
- 2.3.7 ISO 10012-1:2003 Measurement Management Systems– Requirements for Measurement Processes and Measuring Equipment
- 2.3.8 ISO 9001:2008 Quality Management Systems– Requirements

### 3.0 Requirements.

3.1 System Description. The Individual Gunshot Detector System, hereinafter referred to as the IGDS is a self-contained passive acoustic system based on a small rugged light-weight low-power sensor/signal processing core that has the capability to detect and localize the source of small arms fire. The system is tuned to detect shockwave and muzzle blast signatures while screening out other acoustic events. The system uses information from both the shockwave of a supersonic bullet and the muzzle blast from the corresponding rifle fire to alert the user of the threat and to provide range and bearing calculations to that threat. IGDS is designed to detect and locate small arms fire to ranges of at least 400 meters. The system will report this solution within one second after the bullet passes the system.

### 3.2 Program Management Requirements.

3.2.1 Program Management Objective. The objective of program management is to provide both the contractor and the Government with the contractor format management information and tools required to effectively manage the work performed under this contract, minimize performance risk, and ensure adherence to the established program schedule.

#### 3.2.2 Integrated Product & Process Team (IPPT).

3.2.2.1 IPPT Overview. The Government and contractor shall incorporate an IPPT discipline into the IGDS production effort. The objective of the IPPT is to: 1) implement an open shared data/information environment with results oriented objectives, 2) schedule delivery of purchase description compliant units, 3) continuously improve the various Government/contractor processes, and 4) reduce the system life cycle cost. The IPPT shall also complete the following additional actions throughout the life of the contract:

3.2.2.1.1 Hold IPPT Reviews

3.2.2.1.2 Use risk management techniques to document, track, and manage program areas of risk. Review/concur in program documentation

3.2.2.1.3 Review/concur on test methods, plans, and procedures.

3.2.2.1.4 Review/concur on all Failed Item Analysis Reports (FIARs) and Engineering Change Proposals (ECPs)/Deviations/Waivers.

3.2.2.2 IPPT Membership. The IPPT shall consist of Government and contractor personnel associated with the IGDS program and related efforts. The U.S. Army Product Manager Soldier Maneuver Sensors (PM SMS) representative will co-chair the IPPT with the associated contractor counterpart. The IPPT chairpersons are required to concur on all items requiring IPPT concurrence/approval. The co-chairs shall define the membership of the IPPT at the post award conference. **Government participation in the IPPT does not relieve contractor from its responsibility to meet the requirements set forth in the SOW.**

3.2.3 Integrated Program Master Schedule (IPMS). The objective of the IPMS is to provide a program management tool sufficient in detail and information to allow the IPT to track program-related milestones and progress. All events, tasks, and activities in the IPMS should be logically linked showing predecessor and successor relationships and the critical path. The defined events, tasks, and activities should be sufficient in details to account for the entire program under contract and, at a minimum, integrate all required data items, testing, hardware deliveries, major contract program events and reviews, and

program events requiring Government participation. The IPMS shall be in contractor format and shall be submitted to the Government at the Post Award Conference. Thereafter, the IPMS shall be provided to the Government as changes to the schedule are required. The first submission of the IPMS requires approval by the Government. Any changes thereafter will not require Government approval unless the change(s) impacts program-related events, e.g. equipment delivery schedules, data item submittals, major test events, and critical path milestones.

#### 3.2.4 Reports, Reviews, Meetings.

3.2.4.1 Post Award Conference. The Procuring or Administrative Contracting Officer (PCO or ACO) shall schedule a Post Award Orientation to be held not later than (NLT) 30 days after contract award. Location of this meeting will be at the contractor's facility.

3.2.4.2 IPPT Reviews. The contractor shall participate in and support IPPT reviews at regular intervals throughout the life of the contract, or as agreed to by the IPPT co-chairpersons. The first IPPT review shall be conducted in conjunction with the post award conference. The IPPT reviews may be conducted as teleconferences or video-teleconferences (VTC's) or at locations as mutually agreed upon by the IPPT co-chairpersons.

3.2.4.3 Informal Reviews. The contractor shall be available for informal reviews and Government visits.

3.2.4.4 Correspondence Transmission. The contractor shall submit, as a minimum, written program correspondence or documentation via electronic submittal. The procedures will be established as part of the IPPT process. Deviations from this requirement are allowed on a case by case basis, with Government verbal concurrence (either Government IPPT co-chairperson or Government contracting officer).

3.3 Quality Management. The objectives of these Quality Management requirements are to establish early insight into the contractor's products and processes to ensure timely deliveries which meet the system purchase description requirements, and to identify early on any issues that will negatively impact the timeliness or performance of the delivered product and its performance. The Government reserves the right to audit any products and processes, as well as the quality management system at any stage of contract performance.

3.3.1 Quality Management System (QMS). The contractor shall establish, maintain, and operate a QMS acceptable to the Government in accordance with ISO 9001:2008 or equivalent. The contractor shall provide the Government an overview of their quality system plan at the post award conference.

3.3.1.1 Calibration Process. The contractor shall maintain a calibration process in accordance with ANSI/NCSL Z540.3-2006 or equivalent.

3.3.1.2 Use of Contractor's Inspection and Test Equipment. The contractor's inspection, measuring and testing devices shall be made available when required by the Government to determine conformance with contract requirements. If requested by the Government, the contractor's personnel shall be made available to operate such devices and to verify their accuracy and condition.

3.3.1.3 Responsibility for inspection. The contractor shall be responsible for the performance of all inspection requirements specified herein. The Government reserves the right to perform, witness, or verify any of the inspections set forth herein where the inspections are deemed necessary to assure supplies and services conform to prescribed requirements. The contractor shall be responsible for correcting any deficiencies found during Government testing in all affected contractor product.

3.3.1.4 Supplier Management. The contractor is responsible for the work performed by his suppliers including any inspections and tests performed by the suppliers. The Government reserves the right to review/audit any suppliers of key/critical

components. No review/audit of any suppliers by the Government will relieve the contractor of his responsibility for his suppliers.

3.3.1.5 Inspection and Test Records. The contractor shall maintain complete and accurate records of all inspections and tests, and shall make those records available for review by the Government upon request

3.3.2 Quality Validation Plan (QVP). The Contractor shall document his approach to establish and maintain control over the quality of items delivered and assure all systems meet the performance requirements in the PD, throughout the life of the contract, in the Quality Validation Plan (QVP). The Contractor shall submit the QVP in accordance with CDRL A002. Once approved, any changes to the QVP require Government concurrence. The QVP shall document how process control will be maintained in all areas of operations, for both the contractor and its critical suppliers. Suppliers of critical components, materials, or processes shall be identified in the QVP. The contractor shall prepare a QVP. The QVP shall be submitted at the time of the proposal and shall be incorporated into the contract upon final approval by the IPPT during Post Award in accordance with CDRL A002. The QVP shall provide the approach for assuring all deliveries meet specification requirements. The QVP shall be changed or updated only as agreed to by the IPPT.

3.3.2.1 Failed Item Analysis Reports (FIARs). The contractor shall notify the Government within 48 hours, and shall prepare and submit a FIAR within 10 days to the IPPT for review and concurrence in accordance with CDRL A003, for all failures that occur during PQT or CI sample testing. The FIAR shall not be considered closed until the IPPT has concurred on the report. Failures occurring during Government conducted testing, where the test item has been returned to the contractor, are also subject to this requirement. Concurrence by the IPPT is required prior to shipment of any potentially affected production units.

3.3.3 Production Verification Test (PVT), Conformance Inspection (CI)/Acceptance Test (AT). The contractor shall conduct PVT, CI and AT as required in accordance with the QVP and test procedures concurred on by the IPPT, to demonstrate conformance to all requirements of the IGDS purchase description. For all tests conducted, the contractor shall prepare and submit to the IPPT, for concurrence, test plans/procedures in compliance with the quality validation plan. Any modifications to the agreed to plan/procedures shall be concurred with in writing by the IPPT co-chairpersons prior to being implemented. Final approval of the test plans/procedures shall occur prior to commencement of any testing.

3.3.4 Disposition of Test Units. The contractor shall refurbish all items exposed to environmental inspections as required. Subsequent to refurbishment, the items shall conform to all purchase description requirements and be deliverable under the contract.

3.3.5 Environmental Stress Screening (ESS). Each IGDS shall be subjected to ESS in accordance with the IPPT approved Quality Validation Plan. The ESS profile shall be designed to effectively reduce/eliminate workmanship and infant mortality type defects of the system. Causes of ESS failures shall be tracked, investigated, and closed per Contractor internal procedures for the purpose of continuously improving the screen and the manufacturing processes. ESS performance data shall be made available to the Government for on-site review upon request. Modification of the ESS profile may be allowed with IPPT approval based on ESS data evaluations. The contractor shall present the ESS status (e.g., serial numbers, pass/fail, reasons for failure(s), corrective actions) at each IPPT review.

3.3.6 Warranty. The Contractor shall extend to the Government the full coverage of any standard warranty normally offered to the public for this type of product.

### 3.4 Logistics Management

#### 3.4.1 Supportability IPT (SIPT).

- 3.4.1.1 SIPT Overview. The Government and the contractor will incorporate an IPT discipline into logistics management of this contract. The goal of the SIPT is to employ a disciplined approach to ensure the IGDS meets the performance specification and delivery schedule. The SIPT approach will integrate functions, i.e. Maintenance Engineering, Program Management, Quality Assurance, ILS, Safety, and Training into a unified supportability and sustainment process working group.
- 3.4.1.2 SIPT Membership. The SIPT shall consist of Government and contractor personnel associated with the IGDS program. Members shall include knowledgeable and experienced personnel from the various functional areas, i.e. Maintenance Engineering, Training, Technical Writing, Supply, etc. The contractor shall provide the Government with a single SIPT POC for the IGDS program.
- 3.4.1.3 SIPT Reviews. SIPT Reviews provide a working level forum to identify, discuss, and resolve logistics issues and/or concerns. SIPT Reviews shall be conducted at Post Award Conference and as required thereafter. SIPT Reviews shall be chaired jointly by the Government and Contractor Logisticians and shall be held at the contractor's facility unless otherwise agreed to by the co-chairs. The Government and contractor shall mutually provide a list of topics for discussion not less than five working days prior to the SIPT Review. Action items from the reviews shall be assigned to the appropriate organizational element (Government and/or contractor) and shall be reflected in the SIPT Review minutes. The SIPT Review minutes shall be prepared by the contractor and distributed to the SIPT members NLT 7 days after completion of the SIPT Review.

### 3.5 Integrated Logistics Support (ILS) and MANPRINT.

- 3.5.1 ILS Requirements. This section outlines the Government's ILS/MANPRINT requirements for the IGDS Program. These requirements include, but are not limited to, technical manuals, provisioning data, spares and repair parts delivery, Field and Sustainment level maintenance, and sustainment support. The contractor shall fabricate, test, and deliver IGDS in accordance with (IAW) the delivery schedule approved by the Government. The Government anticipates including the following with each IGDS delivered: one (1) soft textile bag, one (1) Government approved COTS, Operator/Unit Maintenance manual (including Repair Parts and Special Tools List), one (1) Quick Reference Guide, batteries, one (1) set of ear buds, and the IGDS Display. The contractor shall have an ILS program that ensures the supportability of the IGDS.
- 3.5.2 Maintenance Concept. The maintenance concept for IGDS is in accordance with the Army's two levels which are 1) Field (Unit/Organizational/Direct Support (DS)), and 2) Sustainment (General Support (GS) and/or Original Equipment Manufacturer (OEM)). Operator maintenance will primarily consist of inspection, cleaning, battery replacement, removal, replacement of ancillary components, and Preventive Maintenance Checks and Services (PMCS). Field Level maintainer will primarily be one of fault verification and minor repair through remove and replace maintenance actions to the system. At the Sustainment level the repair of the IGDS will be by the Original Equipment Manufacturer (OEM) IAW this contractual document due to its complexity. The Government intends to field these items in Brigade sets, including spares kits as defined in paragraph 3.5.4. The quantity of spare kits will be based on the rate of 10% of total systems fielded For example: A delivery of 100 IGDS would be accompanied by 10 sets of spare kits. When a IGDS is non- mission capable (NMC) beyond the repair level of the operator/unit, a spare system will be issued from the Forward Support Battalion (FSB) to the operator/unit. The

NMC system will be returned in accordance with established procedures. The NMC system will be shipped to the OEM for testing and repair. Upon arrival at the OEM facility, the OEM has 72 hours to repair or replace the system for warranty repairs. For non-warranty repairs, the OEM will contact the Government for disposition instructions. All salvaged functional spares shall be considered as government furnished equipment (GFE) and, as such, shall have no associated material cost, when used to repair an unserviceable System. Consideration shall be given to the disposition of NMC systems once at the OEM repair facility as follows:

	Contractor Action	
	Under Warranty	Not Under Warranty
Repairable System	Repair system and return within 72 hours.	Develop Cost Estimate and Contact Government.

3.5.3 **Technical Manual (TM) and Quick Reference Guide (QRG).** *The government will evaluate the COTS manuals per MIL-PRF-32216 to determine if they are adequate to be supplemented with military unique information for support of this equipment. If COTS manuals are acceptable, the contractor shall deliver COTS manuals supplemented with the required military information in accordance with DI-TMSS-80527 and MIL-PRF-32216 to support the IGDS Program. The technical manuals preparation requirements and the delivery requirements are described below.* Per the contract, a Government approved COTS TM shall be delivered with each IGDS procured. The contractor shall develop, in contractor’s format and with Government oversight, a Technical Manual (TM) and Quick Reference Guide (QRG) for IGDS. The TM shall include Operators and Unit Maintenance section (I3&P) along with a Repair Parts and Special Tools List (RPSTL). The initial TM and QRG shall be approved by the Government and shall be the established baselines. If changes are made to the physical or functional baseline configuration of the IGDS, the contractor shall make corresponding changes to the baseline TM and the QRG, as required. The contractor shall deliver one paper copy of the TM and QRG with each IGDS delivered per the contract. Additionally, the contractor will provide copies of the TM and QRG via electronic media to the Government. Reference CDRL A005.

3.5.3.1 **TM and QRG Validation and Verification** The Government requires copies of the TM for review NLT 14 days prior to the TM and QRG Verification/Validation start date defined in the IPMS. The contractor shall schedule and conduct, as required, a TM Verification and Validation Meeting at the contractor’s facility. The contractor shall provide the required support to accomplish TM/QRG and verification. The support shall include, but is not limited to, the TM and QRG, technical personnel support, and consumable parts. During validation, Government personnel and their representatives will validate the Operator and Maintenance Procedures listed in the respective TM/QRG for each system type. A combined Validation/Verification/LMMD will be conducted at a location to be determined. Two validations will be conducted as a minimum at the contractors location (50% and 75% before final).

3.5.4 **Spare and Repair Parts.** The contractor shall propose a separately priced spare parts kit necessary to support the IGDS. The kit will include those consumables/spares that can be replaced by the operator/unit (Field Level). All spare and repair parts delivered under this SOW shall meet the performance specification requirements. The contractor will be responsible to fabricate or procure sufficient spare and repair parts to support the fielded density, system reliability, and meet a 72-hour repair turn-around-time. The contractor

shall be responsible for acquisition of all necessary repair parts required to accomplish the work specified in this SOW during the performance period

3.5.4.1 Pre-Screening and Repairs. Prior to repair on any IGDS, the contractor shall perform a pre-screen of the system to determine whether the system is reparable or non-reparable. If reparable and under warranty the contractor shall conduct the necessary repairs and return the IGDS for restock. If not reparable the contractor shall request disposition instructions from the Government IAW established procedures. The contractor shall be required to replace all damaged markings, identifications, and decals as required. Repairs shall be IAW established contractor's procedures and all repaired systems shall meet the requirements of the existing system performance specification and QVP.

3.5.5 Logistics/Maintainability/MANPRINT Demonstrations (LMMD). The purpose of the LMMD is to demonstrate that the IGDS meets all logistics/maintainability and MANPRINT requirements.

3.5.6 Provisioning Technical Documentation (PTD). The contractor shall coordinate with the SIPT to develop and provide a Provisioning Parts List (PPL) and the necessary technical information for the Government to submit into the Army's current supply system. The PPL submitted to the Government will be as specified within the Maintenance Allocation Chart (MAC) for each system type. The technical information provided shall be adequate to allow the Government to submit for NSN assignment as well as to incorporate these parts within the appropriate TM for each system type.

3.5.7 Training. The purpose of the IGDS training is to provide the operators and maintainers the necessary skills to adequately operate and support the IGDS in the field and garrison environments. The contractor shall develop and provide the necessary training materials in order for the Government to adequately train the operators and maintainer personnel. Training materials shall be developed in a government provided format and shall include, but not be limited to, all tasks contained within the Operators and Unit Maintenance Manual. The PE training shall be conducted using the equipment to teach operation, safety, inspection, troubleshooting, and repair. This training is required to provide the students with the knowledge, technical qualification, and reference materials necessary to perform all operations, Operator, and Unit level maintenance tasks required to successfully accomplish their assigned mission. The contractor shall conduct one to two Instructor and Key Personnel Training (IKPT) courses no longer than one day. The IKPT courses is for Government personnel, and their designated representatives, and shall be conducted at a mutually agreed to CONUS site. The IKPT course dates as well as training material review dates shall be finalized and agreed upon by both the Government and the contractor during the IPT/SIPT Review. The contractor shall develop a Training Package of technical orientation/informational training course material in Program of Instruction (POI) for Operation/Operator/and Unit level maintenance for the Instructor and Key Personnel Training (IKPT). The contractor shall develop technical training course material for an Operation/Operator/Unit level maintenance course. Each task identified shall be determined by the critical task list developed by the Government and the contractor. This should be separately priced.

3.6 Configuration Management.

3.6.1 Configuration Management Objective. The objectives of the Configuration Management requirements are to assure the Government that the contractor utilizes a structured approach to controlling the configuration integrity of the production systems and ensures the physical and functional baselines of each system type is documented and maintained throughout the period of performance of the contract. The contractor will develop a plan in contractor format available to the Government upon request.

- 3.6.2 System Baselines. The IGDS Performance Specification shall represent the Functional Baseline which will be maintained by the Government. The Product Baseline shall be released at the successful completion of the PVT. The Product Baseline will be maintained by the contractor. The contractor shall provide, at the first IPT review after a system's successful PVT, a complete drawing list for the system which reflects the product baseline and includes the drawing revision number and drawing date. The Product Baseline is defined by the product performance specifications, engineering drawings for the system (Developmental design drawings and associated lists or better), engineering drawings of spare parts (Product drawings and associated lists), schematics (Developmental design drawings and associated lists or better), parts lists, and process specifications down to the spare parts level, which shall all be in contractor formats..
- 3.6.3 Configuration Control. Any changes to the Product Baseline shall result in a common configuration for Government operational use and maintenance activities that provides interchangeability and interoperability to the replaceable part level. Changes to the released Functional and/or Product Baselines shall be made via Engineering Change Proposal (ECP). At any time during the period of performance of the contract, the contractor shall provide within seven (7) days upon Government request, an allocated baseline of all hardware and software (if applicable) released as of the date of request. The allocated baseline at a minimum shall include, for each serial numbered system, the relevant functional and product baselines and any discriminating information for each item (serial numbers, item revision, and/or lot number, date of manufacture).
- 3.6.4 Engineering Drawings. The contractor shall prepare and submit new drawings down to the spare part level. The contractor shall prepare and submit product drawings and associated lists as Interface Control Drawings (ICD) at the spare part/assembly level that assure form, fit, and function interchangeability. Include in CDRL D001. The intent is to support spare parts procurement in line with the accepted maintenance concept. Dimensioning and tolerancing shall be in accordance with the ANSI Y14.5M-1994 or equivalent. Product drawings are not required below the spare parts level. The interface control drawings shall include:
- Configuration and interface dimensional data applicable to the envelope, mounting and interconnection of the related items.
  - Complete interface engineering requirements (mechanical, electrical, electronic, optical, human, etc.) which affect the physical or functional characteristics of the co-functioning items.
  - Any other characteristics which cannot be changed without affecting system interfaces down to the spareable level.
- 3.6.5 Engineering and Configuration Control Documentation. For all requested configuration changes, the contractor shall prepare and submit Engineering Change Proposals (ECPs), Value Engineering Change Proposals (VECPs), Requests for Deviation (RFD), and Requests for Waiver to the IPPT for concurrence. Electronic submittal of ECPs, VECs, RFDs, and RFWs shall be Microsoft Office 2000 compatible digital files. Delivery shall include merged text and graphics.
- 3.6.6 Engineering Change Proposals (ECPs). The contractor shall prepare a separate ECP for each engineering change that has its own distinct objective and is against a Government approved baseline. The contractor shall prepare and submit ECPs to the Government that shall include appropriate Notices of Revision, Specification Change Notices, and technical manual change pages, as necessary in accordance with the CMP if required by the IPPT. Report shall be submitted within 21 days after completion of PCA. Government

requires 10 days for review and approval or comment. Contractor shall incorporate corrections and resubmit within 10 days of receipt of government comments.

3.6.7 Unique Item Identification. Items provided under this contract shall comply with the requirements established under DFARS Clause 252.211-7003 (Item Identification and Valuation) and Military Standard 130 (Identification Marking of U.S. Military Property). Items may be marked with any method allowed and shall comply with the quality standards established under Military Standard 130. The mark shall be constructed in such a manner that it will last the life time of the item. The mark shall at a minimum contain, in both human readable format and a data matrix symbol, the manufacturer's CAGE, part number of the item, and a unique serial number (UII Construct #2). Cell size for the data matrix symbol shall be 10 mil or larger, with a preferred cell size of 15 mil.

3.6.8 Passive Radio Frequency Identification. Items provided under this contract shall comply with DFARS Clause 252.211-7006 (Radio Frequency Identification) and Military Standard 129 (Military Marking for Shipment and Storage). The preferred method for complying with this requirement is to integrate the passive RFID tag into the shipping label. Supplemental information concerning this requirement will be found at <http://www.dodrfid.org>

### 3.7 Safety.

3.7.1 System Safety Assessment (SSA) Report. The Contractor shall conduct a System Safety Assessment (SSA) to ensure the IGDS is free from materials, conditions, workmanship which can cause death, injury, or illness to operators and maintainers. The SAR shall include the following:

- System Description
- List of Hazards associated with the IGDS
- Assigned risk assessment codes to each hazard
- Safety risk being assumed prior to test

The SAR shall also include a IGDS safety analysis for the system, documenting that the system design complies with applicable, safety requirements of Title 21, Code of Federal Regulations, Part 1040. The SAR shall identify all safety features of the IGDS, and specific controls or precautions to be followed. The SAR shall be submitted within 30 days of contract award. The contractor shall update the SAR should the PVT determine it is necessary.

3.7.2 Toxic Substances. The SAR shall identify toxic and environmentally unacceptable materials used in the design and production of the systems and components, any possible alternative materials, and recommended actions to eliminate or reduce the use of hazardous materials. The SAR shall address any exposure concerns to personnel during operational or maintenance procedures to include fabrication, transportation, setup and tear down, or resulting from damage to the equipment. The contractor shall identify any material used in the system design that requires disposal as a hazardous waste. Radioactive material shall NOT be utilized in the system design and production without prior approval by the Government. The SAR shall specifically describe control measures taken to ensure that the hardware is free of any radioactive materials, including optical glass and lens coatings.

3.7.3 Safety Inspection/Analysis. The contractor shall schedule sufficient time in the program schedule to permit an independent safety inspection and analysis of the system by the Government prior to soldier involved technical or user testing and associated training, or contract completion. The inspections will be used to verify the information contained in

the SAR. The contractor must allow sufficient time to correct any unresolved high or medium risk hazards prior to testing or delivery of the system to the Government.

PERFORMANCE SPECIFICATIONS

## IGDS PERFORMANCE SPECIFICATION

- 1.0 SCOPE.** This specification provides the performance requirements for the Individual Gunshot Detector System (IGDS).
- 2.0 APPLICABLE DOCUMENTS.**
- 2.1 Government Documents.**
- 2.1.1 Specifications, Standards, and Handbooks.** The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues/revisions shall be those in effect on the date of the issuance of the solicitation.
- 2.1.1.1 Military Standards**
- 2.1.1.2 MIL-STD-461E, Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment**
- 2.1.1.3 MIL-STD-810, Environmental Engineering Considerations and Laboratory Tests**
- 2.1.1.4 MIL-STD-882D, Standard Practice for System Safety**
- 2.1.1.5 MIL-STD-13231, Marking of Electronic Items**
- 2.1.1.6 MIL-STD-130N, Identification Marking of U.S. Military Property**
- 2.1.1.7 MIL-STD-1472F, DoD Design Criteria Standard, Human Engineering**
- 2.1.2 Federal Standards**
- 2.1.2.1 FED-STD-595C, Colors Used in Government Procurement**
- 2.1.3 Handbooks**
- 2.1.3.1 MIL-HDBK-781, A Reliability Test Methods, Plans, and Environments for Engineering Development, Qualification, and Production**
- 2.1.3.2 MIL-HDBK-759C, DoD Handbook for Human Engineering Design Guidelines**
- 2.1.4 Publications and Drawings** The following publications and drawings form a part of this document to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of release of this specification.
- 2.1.4.1 Title 10 United States Code of Federal Regulations, Energy**
- 2.2 Non-Government Documents.** The following non-government documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of release of this specification.
- 2.3 Order of Precedence.** In the event of a conflict between the text of this document and the references cited herein, the text of this document shall take precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.
- 3.0 REQUIREMENTS.**
- 3.1 Item Description.** Individual Gunshot Detector System (IGDS) is a small, lightweight, battery powered, soldier-worn gunfire detection system.
- 3.1.1 General Performance Capabilities.** The IGDS shall be designed to detect, locate and report the origination of gunshots for individual Soldiers. The objective is a low-cost, portable/man-wearable; passive acoustic sensing system that instantly alerts the Soldier to the origin of hostile enemy fire. The system will provide both bearing and range to individual shooter, using both audio alert and visual alert display.
- 3.1.2 System items.** Each IGDS shall be composed of the following items:
- 3.1.2.1 Sensor**

- 3.1.2.2 Display device, if not integrated into the Sensor
      - 3.1.2.3 Audio device, if not integrated into the Sensor
      - 3.1.2.4 Operator's Manual
      - 3.1.2.5 System Batteries
- 3.2 External Interface Requirements.
  - 3.2.1 Data Port. IGDS shall provide an external port (RS-232, USB, or RJ-45) to allow easy remote access by common computers.
  - 3.2.2 Event Data. IGDS shall provide a method for easy download of event data in simple text or XML format from this external port.
  - 3.2.3 Software Upgrades. IGDS shall have on-board software/firmware that is upgradable via this external port.
- 3.3 IGDS Performance Requirements.
  - 3.3.1 Target Data Format.
    - 3.3.1.1 The bearing to the target shall be represented in clock-face notation where 12 O'clock is the wearer's chest.
    - 3.3.1.2 The distance or range from the Soldier to the target shall be referenced in meters.
  - 3.3.2 Audio Alert.
    - 3.3.2.1 The system shall provide target data to the wearer using audio phrases, in the defined target data format, that are audible within 2 meters of the user.
    - 3.3.2.2 The audio alert is the primary method of focusing the user's attention and shall supply a speaker and port for ear bud to orient user, with the ear bud muting the speaker when selected.
    - 3.3.2.3 IGDS shall have a user-selectable volume control capable of controlling the volume of the connected audio device (speaker or ear bud).
    - 3.3.2.4 IGDS shall announce the system's BIT (Built-in-Test) Status as the user adjusts the volume allowing the user to hear the expected volume as well as to hear the system's current health.
    - 3.3.2.5 IGDS audio alert phrases shall be in English.
    - 3.3.2.6 IGDS audio alert shall give the user the ability to recall target data on demand from an alert data history.
    - 3.3.2.7 IGDS audio alert shall have access to an alert data history of 1 entry.
    - 3.3.2.8 The audio alert shall function without the presence of the visual display (if display is separate from the sensor).
  - 3.3.3 Visual Alert.
    - 3.3.3.1 The system shall provide target data to the wearer, in the defined target data format, using graphical indicators on a display device.
    - 3.3.3.2 IGDS visual alert (display) will not be detectable beyond 5 meters at the lowest setting.
    - 3.3.3.3 IGDS visual alert shall give the user the ability to recall target data on demand from an alert data history.
    - 3.3.3.4 IGDS visual alert shall have access to an alert data history of 15 or more entries.
    - 3.3.3.5 IGDS visual alert shall have a clear alert data history function to remove all shots from the alert data history.
    - 3.3.3.6 Any text on the IGDS visual display device shall be in English.

- 3.3.4 Alert Accuracy. The shot localization shall be accurate within  $\pm 15$  degrees of the direction to the shooter, and  $\pm 20\%$  of the total distance from sensor to target, out to 400 meters.
  - 3.3.5 Radial Target Detection. The IGDS shall provide  $360^\circ$  radial detection capability in a horizontal plane while being pitched up to 45 degrees, either forward or backward, and/or being rolled up to 45 degrees to either side.
  - 3.3.6 Probability of Detection. The probability of detection shall be  $\geq 80\%$  of shots that pass within 20 meters of the sensor (small arms/sniper fire of 5.56mm and 7.62 mm ammunition for target range of 50 to 400 meters, during dismounted patrols at  $\leq 5$  mph in open, urban, or mountainous terrain, with background noise up to 90 dB).
  - 3.3.7 Response Time. The IGDS shall provide alert data within 1 second of detection of a bullet passing the sensor for a single shot fired or a short burst of three rounds spaced at least 1 second apart at distances  $\leq 400$  meters.
  - 3.3.8 System Weight. The total system weight shall not exceed 1.1 lbs including the power source but excluding the user manual.
  - 3.3.9 System Size. The size of the total system shall not exceed 30 cubic inches
  - 3.3.10 Sensor Equipment Compatibility and Safety. The size, shape, mounting method(s), mounting locations, and weight of the IGDS components shall not interfere with tactical placement of equipment, entering or exiting from military ground and air transportation vehicles, or in any way hinder/constrict a user's ability to engage targets during combat operations.
  - 3.3.11 Self-Contained System. The IGDS shall be self-contained and capable of providing target solutions as an independent passive system without the aid of adjacent sensors or networks.
  - 3.3.12 Battery Life. The IGDS shall operate for a duration of  $\geq 8$  hours between the temperatures of  $-33^\circ\text{C}$  &  $60^\circ\text{C}$  for dismounted missions with a lithium battery that is commercially available and easily replaceable by the user.
  - 3.3.13 Battery Replacement Method. The IGDS batteries shall be field replaceable by the operator without the use of tools.
  - 3.3.14 System Battery Orientation Protection. The IGDS shall be protected against incorrect battery installation (reverse polarity) by mechanical intervention in the system battery compartment. No electrical contact shall be made if batteries are installed incorrectly.
  - 3.3.15 Low Battery Indication. IGDS shall provide an indicator on the display and provide an audio phrase on the audio device indicating the battery requires replacement.
  - 3.3.16 Low Battery Operation. The IGDS shall neither be damaged nor suffer degradation of performance under low battery conditions i.e. the generation of erratic data under low battery conditions. This requirement is applicable to all batteries.
- 3.4 Other Performance Parameters/Attributes.
- 3.4.1 False Alarm. The sensor shall have the capability to detect the gunshot over the background noise. Non-gunshot events (examples such as typical urban noises, chambering a round in a weapon, an enemy string of firecrackers) that produce an alert are considered false alarms. The IGDS shall not false alarm by event sources less than 50 meters away. For sources greater than 50 meters, the false alarm rate shall be less than 10% of those the IGDS is subjected to.

**3.4.2 Target Range Information.** The IGDS shall provide a visual alert display that classifies the target with a graphical representation of the combatant's location. The IGDS audio alert shall announce the range as an actual number, if sensor is outside of the weapon's sighting device.

**3.4.3 Alert Data History.** The IGDS shall have a history containing previous target locations. The size of this history shall have a minimum of 15 entries. A new entry shall overwrite the oldest entry.

**3.4.4 Event Data.** The IGDS shall be capable of easy download of alert data history via an external port for immediate operational use during the mission for employment of unit weapon systems.

**3.4.5 Display Modes.** The IGDS shall display target data in all levels of user selectable illumination (day during direct sunlight, night, and blackout).

**3.4.6 Data Overload.** The sensor will provide the capability of logging multiple shots while continuing to provide target data to the user. If the system becomes overwhelmed with data, the user must have the ability to reset the system and return the sensor to the original functional state within 5 seconds.

**3.4.7 Operational Mode.**

**3.4.7.1** The IGDS shall have refined operational modes, manually selected by the user, that compensate for open field, urban or mountainous environments, if necessary. The IGDS shall allow users to place the system into operation, including battery replacement, within 5 minutes. Calibration of the sensor shall be minimal or unnecessary.

**3.4.7.2** The IGDS shall allow for one Soldier wearing Joint Services Lightweight Integrated Suit Technology (JSLIST) or cold weather gear to place the IGDS into operation, including battery replacement or remove the IGDS in 7 minutes or less in daylight and night conditions.

**3.4.8 Climate / Environmental.** The IGDS shall be able to operate without degradation to specified performance throughout the temperature range of -33° C to +60° C and during adverse weather conditions (e.g., sand and dust, blowing rain) in accordance with MIL-STD-810. (see paragraph 3.6).

**3.4.9 Soldier to Target Relation.**

**3.4.9.1** The IGDS shall provide bearing to target and distance to target in relation to the Soldier's current location.

**3.4.9.2** The IGDS shall provide updates to bearing and distance to the target as the Soldier maneuvers in the engagement area. Automatic updates on the visual alert shall be 1Hz or faster. The updates on the audio alert shall be only on demand.

**3.4.9.3** The IGDS shall be capable of updating bearing and distance to the target of any recalled target data from the system's alert data history as the Soldier maneuvers in the engagement area. Automatic updates on the visual alert shall be 1Hz or faster. The update rate on the audio alert shall only be on demand.

**3.4.10 Software Upgrades.** The IGDS shall have upgradeable on-board firmware/software via an external port.

**3.4.11 Combat identification/Target Discrimination.** The IGDS shall not report subsonic and supersonic outgoing friendly fire within 50 meters of the sensor

- 3.4.12 Anti-Reflective. The IGDS finish shall be anti-specular reflective (diffused).
- 3.4.13 Fungus. The IGDS external surfaces shall neither support fungus growth, nor experience damage, nor shall IGDS performance be degraded by either the presence of fungus spores or adjacent fungus growth. Fungus testing shall be performed in accordance with MIL-STD-810F, Method 508.5.

3.4.13.1 Nuclear, Biological, and Chemical Protection (NBC). IGDS shall use chemical and biological agent resistant materials.

3.4.13.2 NBC Decontamination. The IGDS shall be able to be decontaminated with the use of hot soapy water, M295 Decontamination Kit or sodium hypochlorite

3.4.13.3 The IGDS exterior housing color shall be Urban Gray #36357 consistent with military camouflage.

### 3.5 Materiel Reliability.

3.5.1 Mean Time Between Essential Function Failures (MTBEFF). The MTBEFF shall be  $\geq 511$  hours. (EFF defined in the TRADOC approved Failure Definition/Scoring Criteria (FD/SC)). (This is based on an operational (probabilistic) reliability of .85 with regard to successfully completing the two aggregate (back-to-back) 96-hour wartime scenarios depicted in the OMS/MP without incurring an essential function failure (EFF)).

3.5.2 Mean Time Between System Abort (MTBSA). The MTBSA shall be  $\geq 803$  hours. (SA defined in the TRADOC approved Failure Definition/Scoring Criteria (FD/SC)). (This is based on an operational (probabilistic) reliability of .90 with regard to successfully completing the two aggregate (back-to-back) 96-hour wartime scenarios depicted in the OMS/MP without incurring an EFF that results in a System Abort).

3.5.3 Built-In-Test (BIT). The IGDS shall provide BIT execution including continuous monitoring of results. BIT shall identify 95% of faults with 80% confidence. Additional detail regarding the failure(s) shall be explained in the IGDS operator's manual.

3.5.3.1 BIT with Connected Display. The IGDS shall display BIT status.

3.5.3.2 BIT with Connected Audio Device. The IGDS shall provide audio phrases indicating BIT status. Audio messages indicating failure(s) shall be repeated every 10 minutes for as long as they are present. The IGDS BIT status shall be announced anytime the user adjusts the audio device's volume.

### 3.6 Environmental requirements shall be met by testing in accordance with MIL-STD-810F, including Change Notices 1, 2, 3.

#### 3.6.1 Temperature.

3.6.1.1 High Temperature Storage. The IGDS shall exhibit neither damage, nor degradation of performance after being stored in non-operating mode, at a constant temperature of + 71° C (+160°F). High Temperature Storage testing shall be performed in accordance with MIL-STD-810F, Method 501.4, Procedure I for constant storage temperature.

3.6.1.2 High Temperature Operation. The IGDS shall exhibit neither damage, nor degradation of performance when operated to + 60° C (+140°F). High Temperature Operation testing shall be performed in accordance with MIL-STD-810F, Method 501.4, and Procedure II for constant operating temperature.

**3.6.1.3 Low Temperature Storage.** The IGDS shall exhibit neither damage, nor degradation of performance after being stored in non-operating mode, in temperatures as low as -40°C Min (-40°F). Low Temperature Storage testing shall be performed in accordance with MIL-STD-810F, Method 502.4, Procedure I for constant temperature.

**3.6.1.4 Low Temperature Operation and Manipulation.** The IGDS shall exhibit neither damage, nor degradation of performance when handled and manually operated in temperatures as low as -33°C (-28°F). Low Temperature Operation and Manipulation testing shall be performed in accordance with MIL-STD-810F, Method 502.4, Procedures II and III for constant temperature.

**3.6.1.5 Temperature Shock.** The IGDS shall exhibit neither damage, nor degradation of performance after being subjected, in the non-operating mode, to sudden temperature changes between -33°C and 60°C. Temperature Shock testing shall be performed in accordance with MIL-STD-810F, method 503.4, Procedure I.

**3.6.2 Humidity.** The IGDS shall not experience any leakage, damage, or degradation of performance resulting from being subjected to a relative humidity of 95% and ten diurnal temperature excursions from 30 degrees C to 60 degrees C. Humidity testing shall be performed in accordance with MIL-STD-810F, Method 507.4, and Table 507.4-1.

**3.6.3 Operating Altitude.** The IGDS shall exhibit neither damage nor degradation of performance due to operations in altitudes of up to 10,000 feet. Operating Altitude testing shall be performed in accordance with MIL-STD-810F, Method, 500.4, Procedure II.

**3.6.4 Rapid Decompression and Subsequent Operation.** The IGDS shall not present a safety or health hazard to personnel, or aircraft either during, or after exposure to an air pressure change that is equivalent to an altitude change from 8,000 to 40,000 feet, within 15 seconds. Additionally, the IGDS shall present neither a safety hazard, nor health hazard when subsequent operation is attempted. Rapid Decompression and Subsequent Operation testing shall be performed in accordance with MIL-STD-810F, Method 500.4, and Procedure III. Should the IGDS fail to operate after executing the rapid decompression pressure change, the IGDS Built In Test (BIT) function shall identify any electronic system failures.

**3.6.5 Loose cargo transportation.** The IGDS shall exhibit neither damage nor degradation of performance after being subjected to Loose Cargo Transportation Vibration. The Loose Cargo Transportation vibration shall consist of random vibration conducted in accordance with MIL-STD-810F, Method 514.5, Procedure II, with the test setup as shown in Figure 514.5C-5.

**3.6.6 Minimum Integrity Vibration.** The IGDS shall exhibit neither damage nor degradation of performance after being subjected to Minimum Integrity Vibration. The minimum integrity vibration shall consist of random vibration conducted in accordance with MIL-STD-810F, Method 514.5, Procedure I for Operational Service, using the limits shown in Figure 1 Minimum Integrity Vibration Profile. The IGDS shall be subjected to 1.5 hours of vibration, 30 minutes in each of the three orthogonal axes with the system mounted on a suitable fixture affixed to the vibrating table. With Government concurrence notching of the vibration profile may be incorporated to compensate for major test fixture resonances.

**3.6.7 Shock.**

- 3.6.7.1 **Functional Shock.** The IGDS shall exhibit neither damage nor degradation of performance resulting from physical shocks typically encountered during handling and field use. Functional Shock testing shall be performed in accordance with MIL-STD-810F, Method 516.5, procedure I, Figure 516.5-10, and Table 516.5-II showing 40 g and 11 ms for the Peak (P) and time duration ( $T_D$ ) respectively.
- 3.6.7.2 **Bench Handling Shock.** The IGDS shall exhibit neither damage nor degradation of performance after experiencing mechanical shocks commonly induced during repair, maintenance, battery replacement, and system checkout. Bench Handling Shock testing shall be performed in accordance with MIL-STD-810F, Method 516.5, Procedure VI.
- 3.6.7.3 **Sand and Dust.** The IGDS shall exhibit neither damage nor degradation of performance by exposure to blowing sand and dust. Sand and Dust testing shall be performed in accordance with MIL-STD-810F, Method 510.4, Procedures 1 and 2.
- 3.6.7.4 **Salt Fog.** The IGDS shall exhibit neither damage nor degradation of performance due to exposure to a salt fog atmosphere. Salt Fog testing shall be performed in accordance with MIL-STD-810F, Method 509.4.
- 3.6.7.5 The IGDS shall exhibit neither damage nor degradation of performance due to exposure to rain/blowing rain. Rain and blowing rain shall be performed in accordance with MIL-STD 810F, Method 506.4, Procedure I.

3.6.8 **Explosive Atmosphere.** The IGDS shall not initiate combustion when operated in an atmosphere that is heavily laden with fumes of aircraft or ground vehicle fuels. Explosive Atmosphere testing shall be performed in accordance with MIL-STD-810F, Method 511.4, Procedure I.

### 3.7 Design and Construction.

- 3.7.1.1 **Parts, Materials, and Processes.** The contractor shall select parts, materials, and processes such that IGDS meets the requirements of this specification. The contractor is encouraged to use commercial / industrial processes and practices that will reduce design, production, and operational support costs while meeting the requirements of this specification.

3.7.2 **Electromagnetic Interference (EMI).** The IGDS shall meet the requirements of RE102, RS103, CE102, CS101, CS114, CS115, and CS116 per MIL-STD 461E.

3.7.3 **Nameplates and Product Marking.** The assembly and all spared components, subassemblies, and parts shall be marked in accordance with MIL-STD-13231, MIL-STD-130N (using construct #2), and MIL-STD-1425A as specified on the drawings. In addition to the requirements in MIL-STD-130N, the minimum requirement for marking the system will include 2-d matrix UID bar code, moth/year manufactured, human readable serial number, bar code serial number, human readable part number, bar code serial number, and manufacturer cage code, human readable nomenclature and NSN.

3.7.4 **Workmanship.** Joints and seams shall be tight and electrical wiring shall be secure with unbroken insulation. Padding shall be free of gouges, tears, excess adhesive, or imbedded foreign matter and shall be attached firmly to the proper surface. All plastic parts shall be free from cracks, splits, cold flow, shrinkage, inclusions, porosity, or any similar characteristics. Threads shall be full and undamaged for their entire length or depth. The IGDS shall be free from burrs, chips, dirt, rust, corrosion, or any embedded or surface foreign material. All moving parts and adjustments shall move freely throughout their entire range without sticking, binding, or creeping. Parts shall neither be missing nor damaged.

- 3.8 Packaging.** The packaging shall be in accordance with standard practices for commercial packaging of similar items. All deliveries shall be palletized, banded and shrink wrapped. The size of each palletized pallet shall not exceed 43 inches in width, 51 inches in depth, and 95 inches in height. Each shipment, at a minimum will be marked with contractor name, CAGE code, National Stock Number, serial numbers, contract number, and CLIN. Each pallet will have no more than one CLIN/SLIN item.
- 3.8.1** A transit case shall contain no more than 10 systems.
- 3.9 Logistics.** Integrated Logistics Support/Manpower and Personnel Integration (ILS/MANPRINT). The following requirements are in addition to the Statement of Work requirements:
- 3.9.1 Maintenance concept.** The IGDS shall be designed to be maintained in accordance with the maintenance concept described in the SOW. Operator must be able to replace batteries while wearing the system.
- 3.9.2 Tools/Test, Measurement, and Diagnostic Equipment (TMDE).** The IGDS shall require no special tools and test equipment for focus, adjustment, and maintenance below the direct support level.
- 3.9.3 Manpower.** There shall be no new MOS identified for the IGDS operator or maintainer.
- 3.9.4 Operational availability.** The IGDS shall support an operational availability of no less than 90%.
- 3.10 Human Performance/Human Engineering (HP/HE).** The IGDS shall comply with the following human performance/human engineering design criteria:
- 3.10.1** Arrangement, size, and shape of operator controls shall permit ready tactile or position identification and operation in darkness.
- 3.10.2** Access to operating controls shall be convenient for both right and left handed operators from all normal operating positions, primarily when mounted on the applicable weapon in a firing position.
- 3.10.3** The system shall facilitate safe, efficient, effective operation and maintenance by the 5th through 95th percentile of the U.S. Army.
- 3.10.4** The configurations of the IGDS shall allow all operator functions, including normal care and cleaning and battery replacement, to be accomplished under all operational conditions, while wearing nuclear-chemical-biological (NBC) ensembles, arctic, cold and cold/wet protective clothing and equipment, and corrective lenses.
- 3.10.5** Labeling of controls shall provide for easy identification by the user of the control function.
- 3.11 Safety**
- 3.11.1 Health Hazard Assessment.** The IGDS shall comply with the design criteria to minimize health hazards and to ensure the safety of personnel (operator, maintainer, etc.) associated with the operation, maintenance, transportation, or repair of a complete system or component parts. The IGDS shall be designed to be safe under all conditions of normal use. The IGDS shall provide maximum access and safety to personnel during installation, operation, and maintenance. All safety hazards not eliminated through design shall be addressed in the appropriate technical manuals.
- 4.0 VERIFICATION**
- 4.1 General.** This section identifies the categories of verification, and the verification efforts to be undertaken to confirm acceptable product per the performance requirements established in section 3 of this document.
- 4.2 Verifications Description.** To determine the initial and continued acceptability of the product the contractor shall perform several product verification efforts: Environmental Stress Screening (ESS); Acceptance Testing; and Design Verification Testing (DVT) (aka Qualification Testing). In production, testing shall also include

periodic Performance, Environmental, and Reliability testing as required by the contract. All verifications shall be performed in accordance with contractor-originated, Government-approved procedures. Verifications shall be performed in accordance with the IGDS Requirements Verification Matrix presented in the contract.

- 4.3 Verification Categories.** Acceptable IGDS product in compliance with the requirements identified in Section 3 herein shall be verified using one or more of the categories of verification described in subparagraphs 4.3.1 – 4.3.4 below. The Requirements Verification Matrix specifies how the categories of verification shall be applied to verify product acceptability for each requirement of this specification.

**4.3.1 Verification by Inspection.** Verification by Inspection (I) involves a physical examination of the IGDS, a review of pertinent documentation, and a comparison of appropriate characteristics with predetermined standards. This action may require moving, turning, or a partial disassembly of the system, as well as include the use of fixtures, jigs, gauges, or other measurement tools and recording devices to accomplish the verification.

**4.3.2 Verification by Analysis.** Verification by Analysis (A) requires quantitative proof, by means of the technical evaluation of equations, charts, graphs, circuit diagrams, and representative data, that the specifications have been met. Any assumptions required for the analysis shall be realistic and shall be based upon commonly accepted assumptions used by professionals in the discipline involved. Verification by analysis may also be accomplished via similarity. Analysis by similarity entails using analysis, substantiating data, and/or test results performed on previously developed equipment, provided that an actual similarity exists, and can be shown to exist, between the previously developed equipment and the IGDS developed to meet this specification.

**4.3.3 Verification by Test.** Verification by Test (T) may involve both the operation of the item, with appropriate instrumentation to record quantitative data, and the evaluation of the resultant quantitative data. Acceptability of the item shall be determined by comparison of such data with the quantitative specification requirement. Successful completion of verification by test shall consist of witnessed and documented test results that clearly indicate that the product is meeting, or exceeding the quantitative requirement as specified in this document.

**4.3.4 Verification by Demonstration.** If a specification cannot be verified quantitatively (i.e. by analysis or by test), verification may be accomplished by a Demonstration (D) showing that a requirement has been met. The use of this category of verification may also be permissible when, in unique situations and with Government pre-concurrence, a complete test is determined to be unnecessary to show acceptability for a specific parameter(s).

## **5.0 Definitions.**

- 5.1 Soldier, user, operator, wearer.** The terms “soldier”, “user”, “operator”, and “wearer” are used interchangeably in this document and all refer to the person wearing the IGDS.
- 5.2 Sniper, target.** The terms “sniper” and “target” are used interchangeably in this document and both refer to the enemy sniper position.
- 5.3 Alert Data.** The term “alert data” is defined as both bearing and range distance to the sniper relative to the user’s current position.

Section D - Packaging and Marking

CLAUSES INCORPORATED BY FULL TEXT

AMCAC 52.0247-4001, COMMERCIAL PACKAGING (AUG 1999)

Packaging of CLIN(s) (ALL) shall be in accordance with standard commercial practices which are necessary to prevent deterioration and damage due to hazards of shipping, handling and storage.

AMCAC 52.0247-4002, MARKING AND CONSIGNMENT INSTRUCTIONS (AUG 1999)

Marking and consignment instructions for military shipments shall conform to the current issue of MIL-STD-129 (Military Standard Marking for Shipment and Storage).

## Section E - Inspection and Acceptance

## INSPECTION AND ACCEPTANCE TERMS

Supplies/services will be inspected/accepted at:

CLIN	INSPECT AT	INSPECT BY	ACCEPT AT	ACCEPT BY
0001	Origin	Government	Origin	Government
000101	Origin	Government	Origin	Government
000102	Origin	Government	Origin	Government
000103	Origin	Government	Origin	Government
0002	Origin	Government	Origin	Government
000201	Origin	Government	Origin	Government
000202	Origin	Government	Origin	Government
000203	Origin	Government	Origin	Government
0003	Destination	Government	Destination	Government
000301	Destination	Government	Destination	Government
000302	Destination	Government	Destination	Government
000303	Destination	Government	Destination	Government
0004	Destination	Government	Destination	Government
000401	Destination	Government	Destination	Government
000402	Destination	Government	Destination	Government
000403	Destination	Government	Destination	Government

## CLAUSES INCORPORATED BY REFERENCE

52.246-2	Inspection Of Supplies--Fixed Price	AUG 1996
52.246-16	Responsibility For Supplies	APR 1984
252.246-7000	Material Inspection And Receiving Report	MAR 2008

Section F - Deliveries or Performance

DELIVERY INFORMATION

Delivery information will be provided with each delivery order.

CLAUSES INCORPORATED BY REFERENCE

52.211-17	Delivery of Excess Quantities	SEP 1989
52.242-15	Stop-Work Order	AUG 1989
52.242-17	Government Delay Of Work	APR 1984
52.247-29	F.O.B. Origin	FEB 2006
52.247-34	F.O.B. Destination	NOV 1991

## Section G - Contract Administration Data

## ACCOUNTING AND APPROPRIATION DATA

AA: ALL FUNDING WILL BE OBLIGATED UTILIZING DELIVERY ORDERS  
AMOUNT: \$0.00  
CIN 00000000000000000000000000000000: \$0.00

## CLAUSES INCORPORATED BY FULL TEXT

## WIDE AREA WORKFLOW (WAWF) INFORMATION AND INSTRUCTION (MAY 2009)

As prescribed in DFARS 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports, contractors shall submit payment requests and receiving reports using WAWF. WAWF is a secure web-based system for electronic invoicing, receipt and acceptance located at <https://wawf.eb.mil>. Contractors can register to use WAWF on the Internet for no charge and ensure an electronic business point of contact (POC) is designated in the Central Contractor Registration site at <http://www.ccr.gov> within ten (10) calendar days after award. WAWF training is provided at <http://www.wawftraining.com/>. This application allows contractor submittal and tracking of invoices and receipt/acceptance documents. Questions relating to system setup and training can be directed to the associated site help desks and the Army WAWF Help Desk which provides support for all users as follows. Questions can also be sent via email to: [cco-ec-army-wawf-helpdesk@dfas.mil](mailto:cco-ec-army-wawf-helpdesk@dfas.mil):

Hours of Operation: Monday – Friday, 0630-1800 EDT  
Phone Numbers: Toll Free: 1-877-2232-9293  
Comm: 1-317-510-0625 or DSN: 699-0625

Important Information:

Please submit your invoice/receiving report in WAWF when you ship your items. Otherwise, when your delivery arrives, there is nothing to receive your shipment against if the information has not been entered in WAWF.

Include the Purchase Request (PR) number in the Line Item Description. This is found under the Line Item Description on this contract/order.

WAWF is the preferred method to electronically process vendor request for payment. It allows vendors to submit and track invoices and receipt/acceptance documents electronically.

## WAWF Instructions:

Questions concerning payments should be directed to the Defense Finance and Accounting Service (DFAS):

DFAS COLUMBUS - HQ0303  
DFAS-ROCK ISLAND/JAIQBAC  
ATTN: ROCK ISLAND  
PO BOX 182316  
COLUMBUS OH 43218-2316  
(800) 756-4571

FAX - 1-877-426-4270

*Note: Vendor, please have your purchase/contract/delivery order number(s) ready when calling about payments.*

The following Codes and information will be required to assure successful flow of WAWF comments:

TYPE OF DOCUMENT *(Check the appropriate block)*

- Commercial Item Financing
- Construction Invoice *(Contractor Only)*
- Invoice *(Contractor Only)*
- Invoice and Receiving Report Combo (Supplies) - OR - Supplies and FFP Services *(check one)*
- Invoice as 2-in-1 (Services Only)
- Performance Based Payment *(Government Only)*
- Progress Payment *(Government Only)*
- Cost Voucher (All Cost Reimbursable or T&M) *(Government Only)*
- Receiving Report *(Government Only)*
- Receiving Report With Unique Identification (UID) Data *(Government Only)*  
 UID is a new globally unique "art identifier" containing data elements used to track DoD parts  
 Through their life cycle.
- Summary Cost Voucher *(Government Only)*

Cage Code: 5B2G7

Issue By DoDAAC: W9ICRB

Admin By DoDAAC: W91231

Inspect By DoDAAC: W91231 *(Enter DoDAAC of the COR)*

Accept By DoDAAC: W91231 *(Enter Acceptor's DoDAAC here) - OR -*

Accept Reviewer/Approver DoDAAC: \_\_\_\_\_ *(Enter DCAA Office for Cost Reimbursable and T&M contracts (HAAXX - in lieu of "X" - enter digits of the assigned DCAA office)*

Ship to DoDAAC: w91231 *(Enter Customer DoDAAC)*

Local Processing Office DoDAAC: \_\_\_\_\_ *(Enter LPO DoDAAC here - Leave BLANK unless for ONE-PAY, CAPS-D or IAPS payment systems)*

Payment Office Fiscal Station Code: HQ0303 *(Enter Fiscal Station Code - See Block on contract or modification for "Payment Will be Made by" and use the code appearing in the "Code" Block - most numbers will begin with an "H" and contain 6 digits).*



## Section H - Special Contract Requirements

DISCLOSURE

## DISCLOSURE OF UNIT PRICE INFORMATION

This constitutes notification pursuant to Executive Order 12600, Pre-Disclosure Notification Procedures for Confidential Commercial Information (June 23, 1987), of our intention to release unit prices in response to a request under the Freedom of Information Act, 5 USC 552. Unit price is defined as the contract price per unit or item purchased and that data is located at Section B. THE GOVERNMENT CONSIDERS ALL OBJECTION TO BE WAIVED UNLESS THE CONTRACTING OFFICER IS NOTIFIED (IN WRITING WITH A STATEMENT OF ALL GROUNDS UPON WHICH DISCLOSURE IS OPPOSED) OF YOUR OBJECTION TO SUCH RELEASE PRIOR TO SOLICITATION CLOSING DATE.

## Section I - Contract Clauses

## CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JUL 2004
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-6	Restrictions On Subcontractor Sales To The Government	SEP 2006
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	SEP 2007
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.204-7	Central Contractor Registration	APR 2008
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	SEP 2006
52.211-5	Material Requirements	AUG 2000
52.215-8	Order of Precedence--Uniform Contract Format	OCT 1997
52.215-14	Integrity of Unit Prices	OCT 1997
52.219-8	Utilization of Small Business Concerns	MAY 2004
52.219-9	Small Business Subcontracting Plan	APR 2008
52.222-3	Convict Labor	JUN 2003
52.222-19	Child Labor -- Cooperation with Authorities and Remedies	AUG 2009
52.222-20	Walsh-Healey Public Contracts Act	DEC 1996
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	MAR 2007
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	SEP 2006
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, and Other Eligible Veterans	SEP 2006
52.222-50	Combating Trafficking in Persons	FEB 2009
52.223-6	Drug-Free Workplace	MAY 2001
52.223-18	Contractor Policy to Ban Text Messaging While Driving.	SEP 2010
52.225-25	Prohibition on Engaging in Sanctioned Activities Relating to Iran--Certification.	SEP 2010
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	DEC 2007
52.229-3	Federal, State And Local Taxes	APR 2003
52.230-2	Cost Accounting Standards	OCT 2008
52.230-6	Administration of Cost Accounting Standards	JUN 2010
52.232-1	Payments	APR 1984
52.232-8	Discounts For Prompt Payment	FEB 2002
52.232-11	Extras	APR 1984
52.232-17	Interest	OCT 2008
52.232-23	Assignment Of Claims	JAN 1986
52.232-25	Prompt Payment	OCT 2008
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	OCT 2003
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004

52.234-1	Industrial Resources Developed Under Defense Production Act Title III	DEC 1994
52.242-13	Bankruptcy	JUL 1995
52.243-1	Changes--Fixed Price	AUG 1987
52.243-7	Notification Of Changes	APR 1984
52.246-23	Limitation Of Liability	FEB 1997
52.248-1	Value Engineering	FEB 2000
52.249-2	Termination For Convenience Of The Government (Fixed-Price)	MAY 2004
52.249-8	Default (Fixed-Price Supply & Service)	APR 1984
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	DEC 2008
252.203-7002	Requirement to Inform Employees of Whistleblower Rights	JAN 2009
252.204-7000	Disclosure Of Information	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004 Alt A	Central Contractor Registration (52.204-7) Alternate A	SEP 2007
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	DEC 2006
252.211-7003	Item Identification and Valuation	AUG 2008
252.215-7000	Pricing Adjustments	DEC 1991
252.219-7003	Small Business Subcontracting Plan (DOD Contracts)	APR 2007
252.223-7004	Drug Free Work Force	SEP 1988
252.225-7001	Buy American Act And Balance Of Payments Program	JAN 2009
252.225-7002	Qualifying Country Sources As Subcontractors	APR 2003
252.225-7012	Preference For Certain Domestic Commodities	JUN 2010
252.225-7013	Duty-Free Entry	DEC 2009
252.225-7036	Buy American--Free Trade Agreement--Balance of Payments Program	JUL 2009
252.227-7011	Assignments	AUG 1984
252.227-7013	Rights in Technical Data--Noncommercial Items	NOV 1995
252.227-7016	Rights in Bid or Proposal Information	JUN 1995
252.227-7030	Technical Data--Withholding Of Payment	MAR 2000
252.232-7003	Electronic Submission of Payment Requests and Receiving Reports	MAR 2008
252.246-7000	Material Inspection And Receiving Report	MAR 2008
252.247-7023 Alt III	Transportation of Supplies by Sea (May 2002) Alternate III	MAY 2002

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.216-18 ORDERING. (OCT 1995)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued 36 months from date of contract award.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

(End of clause)

52.216-19 ORDER LIMITATIONS. (OCT 1995)

(a) Minimum order. When the Government requires supplies or services covered by this contract in an amount of less than 500 systems (quantity), the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) Maximum order. The Contractor is not obligated to honor:

(1) Any order for a single item in excess of 30,000 systems;

(2) Any order for a combination of items in excess of 30,000 systems; or

(3) A series of orders from the same ordering office within 180 days that together call for quantities exceeding the limitation in subparagraph (1) or (2) above.

(c) If this is a requirements contract (i.e., includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) above.

(d) Notwithstanding paragraphs (b) and (c) above, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 30 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of clause)

52.216-22 INDEFINITE QUANTITY. (OCT 1995)

(a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum". The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum".

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after 36 months from date of contract award.

(End of clause)

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), 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 clause4)

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, within 30 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;
- (iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and

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

(c) *Continued performance.* Following submission of the notice required by (b) above, 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 (b) above, notice shall be given in the manner provided. All directions, communications, interpretations, orders and similar actions of the SAR shall be reduced to writing and copies furnished to the Contractor and to the Contracting Officer. The Contracting Officer shall countermand any action which exceeds the authority of the SAR.

(d) *Government response.* The Contracting Officer shall promptly, within 30 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 Contractor's notice information is inadequate to make a decision under (1), (2), or (3) above, 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 Contractor's 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 Contractor's failure to provide notice or to continue performance as provided, respectively, in (b) and (c) above.

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)

#### 52.246-19 WARRANTY OF SYSTEMS AND EQUIPMENT UNDER PERFORMANCE SPECIFICATIONS OR DESIGN CRITERIA (MAY 2001)

Definitions. Acceptance means the act of an authorized representative of the Government by which the Government assumes for itself, or as an agent of another, ownership of existing and identified supplies, or approves specific services rendered, as partial or complete performance of the contract.

Defect means any condition or characteristic in any supplies or services furnished by the Contractor under the contract that is not in compliance with the requirements of the contract.

Supplies means the end items furnished by the Contractor and related services required under this contract. Except when this contract includes the clause entitled Warranty of Data, supplies also mean "data."

(b) Contractor's obligations. (1) The Contractor's warranties under this clause shall apply only to those defects discovered by either the Government or the Contractor. The Contractor shall extend to the Government the full coverage of any standard warranty normally offered to the public after receipt of IGDS systems, covering damage or degradation of performance due to manufacturing or failures associated with normal use.

(2) If the Contractor becomes aware at any time before acceptance by the Government (whether before or after tender to the Government) that a defect exists in any supplies or services, the Contractor shall (i) promptly correct the defect, or (ii) promptly notify the Contracting Officer, in writing, of the defect, using the same procedures prescribed in paragraph (b)(3) of this clause.

(3) If the Contracting Officer determines that a defect exists in any of the supplies or services accepted by the Government under this contract, the Contracting Officer shall promptly notify the Contractor of the defect, in writing, within 90 days after discovery of the defect. Upon timely notification of the existence of a defect, or if the Contractor independently discovers a defect in accepted supplies or services, the Contractor shall submit to the Contracting Officer, in writing, within 90 days a recommendation for corrective actions, together with supporting information in sufficient detail for the Contracting Officer to determine what corrective action, if any, shall be undertaken.

(4) The Contractor shall promptly comply with any timely written direction from the Contracting Officer to correct or partially correct a defect, at no increase in the contract price.

(5) The Contractor shall also prepare and furnish to the Contracting Officer data and reports applicable to any correction required under this clause (including revision and updating of all other affected data called for under this contract) at no increase in the contract price.

(6) In the event of timely notice of a decision not to correct or only to partially correct, the Contractor shall submit a technical and cost proposal within 30 days to amend the contract to permit acceptance of the affected supplies or

services in accordance with the revised requirement, and an equitable reduction in the contract price shall promptly be negotiated by the parties and be reflected in a supplemental agreement to this contract.

(7) Any supplies or parts thereof corrected or furnished in replacement and any services reformed shall also be subject to the conditions of this clause to the same extent as supplies or services initially accepted. The warranty, with respect to these supplies, parts, or services, shall be equal in duration to that set forth in paragraph (b)(1) of this clause, and shall run from the date of delivery of the corrected or replaced supplies.

(8) The Contractor shall not be responsible under this clause for the correction of defects in Government-furnished property, except for defects in installation, unless the Contractor performs, or is obligated to perform, any modifications or other work on such property. In that event, the Contractor shall be responsible for correction of defects that result from the modifications or other work.

(9) If the Government returns supplies to the Contractor for correction or replacement under this clause, the Contractor shall be liable for transportation charges up to an amount equal to the cost of transportation by the usual commercial method of shipment from the place of delivery specified in this contract (irrespective of the f.o.b. point or the point of acceptance) to the Contractor's plant and return to the place of delivery specified in this contract. The Contractor shall also bear the responsibility for the supplies while in transit.

(10) All implied warranties of merchantability and "fitness for a particular purpose" are excluded from any obligation under this contract.

(c) Remedies available to the Government. (1) The rights and remedies of the Government provided in this clause-

(i) Shall not be affected in any way by any terms or conditions of this contract concerning the conclusiveness of inspection and acceptance; and

(ii) Are in addition to, and do not limit, any rights afforded to the Government by any other clause of this contract.

(2) Within 30 days after receipt of the Contractor's recommendations for corrective action and adequate supporting information, the Contracting Officer, using sole discretion, shall give the Contractor written notice not to correct any defect, or to correct or partially correct any defect within a reasonable time at the contractor's or Government facility.

(3) In no event shall the Government be responsible for any extension or delays in the scheduled deliveries or periods of performance under this contract as a result of the Contractor's obligations to correct defects, nor shall there be any adjustment of the delivery schedule or period of performance as a result of the correction of defects unless provided by a supplemental agreement with adequate consideration.

(4) This clause shall not be construed as obligating the Government to increase the contract price.

(5)(i) The Contracting Officer shall give the Contractor a written notice specifying any failure or refusal of the Contractor to--

(A) Present a detailed recommendation for corrective action as required by paragraph (b)(3) of this clause;

(B) Correct defects as directed under paragraph (b)(4) of this clause; or

(C) Prepare and furnish data and reports as required by paragraph (b)(5) of this clause.

(ii) The notice shall specify a period of time following receipt of the notice by the Contractor in which the Contractor must remedy the failure or refusal specified in the notice.

(6) If the Contractor does not comply with the Contracting Officer's written notice in paragraph (c)(5)(i) of this

clause, the Contracting Officer may by contract or otherwise--

(i) Obtain detailed recommendations for corrective action and either--

(A) Correct the supplies or services; or

(B) Replace the supplies or services, and if the Contractor fails to furnish timely disposition instructions, the Contracting Officer may dispose of the nonconforming supplies for the Contractor's account in a reasonable manner, in which case the Government is entitled to reimbursement from the Contractor, or from the proceeds, for the reasonable expenses of care and disposition, as well as for excess costs incurred or to be incurred;

(ii) Obtain applicable data and reports; and

(iii) Charge the Contractor for the costs incurred by the Government.

(End of clause)

#### 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(es):

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

(End of clause)

Section J - List of Documents, Exhibits and Other Attachments

Exhibit/Attachment Table of Contents

DOCUMENT TYPE	DESCRIPTION	PAGES	DATE
Attachment 1	Revised CDRLS		