

with an EIA RS-232-E interface for communicating between the PDCT and a host computer. This unit shall also charge the batteries in the PDCT without removing the batteries from the PDCT. In addition, the Contractor shall provide a Battery Charger capable of charging the batteries when the batteries are either in or out of the PDCT. The Contractor shall also provide a Multiple Battery Charger. The Multiple Battery Charger shall be capable of charging at least four sets of batteries simultaneously when the batteries are removed from the PDCT. The Government desires an interconnectivity capability that provides maximum flexibility for supporting the attachable devices. The Government also desires that as few platforms as possible be used for this class of PDCTs and FDCTs.

4.3.1 Technical Requirements.

The Contractor shall provide a PDCT-B and FDCT-B Class with the following attributes and components:

- a. A minimum 20 character by 8 row display, without scrolling;
- b. A minimum of 4 Mbytes RAM, expandable to at least 8 Mbytes;
- c. A minimum of 2 Mbytes user-programmable ROM for OS and application software;
- d. AT-compatible PC keyboard functionality;
- e. Support for EIA RS-232-E communications;
- f. Support for the Portable Bar Code Label Printer through the EIA RS-232-E interface;
- g. Operational and spare rechargeable Batteries;
- h. Back-up power for RAM and configuration memory;
- i. Support a user-accessible Type II PCMCIA PC Card slot on terminals not required to have an RF capability;
- j. Peripheral devices used to read and write to Integrated Circuit Cards and PCMCIA PC Memory Cards;
- k. Transfer of decoded data from the PDCT to either a local or remote host computer;
- l. Portable operation when using the Integrated Circuit Card Reader/Writer. When in use with the PDCT, the Integrated Circuit Card Reader/Writer shall be as mobile or portable as the PDCT, and shall not encumber the operator;
- m. Provide the capability to execute, without change, currently fielded Government MS DOS® v5.0-based software applications, except for those applications that bypass MS DOS®/BIOS interrupts to address equipment directly, or where these applications contain embedded control codes specific to a Government-owned peripheral device.

4.3.2 PDCT-B1 Hand-held, Programmable PDCT.

The Contractor shall provide a ruggedized, hand-held, programmable PDCT. The PDCT-B1 shall provide support for external bar code wands, scanners, and imagers. The PDCT-B1 subclass shall support all the linear and 2D bar code symbologies listed in the paragraph entitled "Bar Code Symbologies". In addition, the PDCT-B1 subclass shall support the following devices or peripherals:

- a. Magnetic Stripe Reader for PDCT;
- b. Bar Code Slot Scanner, Decoding;
- c. Contact Memory Device, Type I, Reader/Writer for PDCT.

4.12.3.2 Technical Requirements.

The Optical Memory Card shall serve as a portable data carrier and support applications requiring interface to PCs or other host computers. These applications may include, but are not limited to, shipping, manifesting, recording supply and transportation information, forming a database of unprocessed receipts at destination, and for expediting receipt processing. The following memory capacities shall be provided:

- a. Optical Memory Card, 2.86 Mbytes (4.1 Mbytes without error correction).

4.12.3.3 Separately Orderable Components.

The Contractor shall provide the following Separately Orderable Components for the Optical Memory Card:

- a. Protective Plastic Sleeve.

4.12.4 Contact Memory Devices, Type I.

Contact Memory Devices, Type I, are small, data storage devices housed in a container that looks much like a large watch battery. These devices are commonly referred to as contact memory buttons, button memory, or as touch memory devices. Contact memory devices contain an integrated circuit that provides multiple functions in the identification, and security area, is sealed against environmental hazards and conditions, and is Nonincendive. Contact Memory Devices, Type I, may be affixed to almost any object and can be used to maintain historical data.

4.12.4.1 General Requirements.

The Contractor shall provide Contact Memory Devices, Type I, that are capable of storing information used to identify assets or objects of interest, and to assist in providing inventory control. The Contractor shall provide each button with a means of permanent adhesion on a flat surface.

4.12.4.2 Technical Requirements.

The Contractor shall provide Contact Memory Devices, Type I, in the following memory capacities:

- a. 2 Kbyte Contact Memory Device, Type I;
- b. 8 Kbyte Contact Memory Device, Type I.

4.12.5 Contact Memory Devices, Type II

Contact Memory Devices, Type II, are intended for permanent affixing to a variety of cases and weapon system components for use in serial number tracking and recording of component configuration, usage, and repair data. These contact memory devices, also known as buttons, will be subjected to extreme environmental conditions including low atmospheric pressure at high altitudes.

The contractor shall provide Contact Memory Devices, Type II, with the following attributes:

- a. Data capacities of 8kByte and 32kByte.
- b. Button form factor with as small a footprint as possible.
- c. Method of permanent attachment to a flat surface.
- d. Data retention of at least 50 years.

4.13 READERS, WRITERS, AND ENCODERS FOR DATA STORAGE MEDIA.

4.13.1 PC Memory Card Reader/Writer.

PC Memory Card Reader/Writers are used to write data to, and read data from, PC Memory Cards. The Contractor shall provide a PC Memory Card External Reader/Writer and a PC memory Card Internal Reader/Writer. No damage shall occur to the media or the Reader/Writer when the Card is removed before, during, or after reading or writing operations.

4.13.1.1 PC Memory Card External Reader/Writer.

The Contractor shall provide a PC Memory Card External Reader/Writer that interfaces with a PC or other host computer, through a cable or other data transmission means. Data can then be written to and read from the PC Memory Card. The Contractor shall provide Reader/Writer drivers for Windows 95®, Windows 98®, and Windows NT®. The PC Memory Card External Reader/Writer shall support one Type II and one Type III, or two Type II PC Memory Cards.

4.13.1.2 PC Memory Card Internal Reader/Writer.

The Contractor shall provide a PC Memory Card Internal Reader/Writer that installs in a half-height PC drive bay and uses a 16-bit ISA slot. The Reader/Writer shall be plug-and-play for Windows 95®, Windows 98®, and Windows NT®. The Reader/Writer shall support one Type II and one Type III, or two Type II PC Memory Cards.

4.13.2 Integrated Circuit Card Reader/Writer.

Integrated Circuit Card Reader/Writers are used to write data to, and read data from, Integrated Circuit Cards. ICC Reader/Writers shall be ISO/IEC 7816 compliant. The Contractor shall provide Integrated Circuit Card Reader/Writers in three basic types or configurations:

4.13.2.1 Integrated Circuit Card External Reader/Writer.

The Integrated Circuit Card External Reader/Writer interfaces with a PC or other host computer through a wired connection.

4.13.2.2 Integrated Circuit Card Internal Reader/Writer.

The Integrated Circuit Card Internal Reader/Writer installs in a half-height drive bay in a PC or other host computer.

4.13.2.3 Integrated Circuit Card Reader/Writer for PDCT.

The Integrated Circuit Card Reader/Writer for PDCT interfaces with the PDCT-B class. The reader/writer may be an adapter utilizing a PC Card slot, or a peripheral device interfacing with

the PDCT. If the Reader/Writer is a peripheral device, the PDCT, with the Reader/Writer connected or attached, shall be as mobile as the PDCT alone, and shall permit unencumbered use of the PDCT and the ICC Reader/Writer for PDCT.

4.13.3 Optical Memory Card Reader/Writer.

The Optical Memory Card Reader/Writer is a device that interfaces with a PC or other host computer, through a cable or other data transmission method. Data can then be written to, and read from, the Optical Memory Card.

4.13.3.1 General Requirements.

The Contractor shall provide an Optical Memory Card Reader/Writer that can support Optical Memory Card applications requiring interchangeability with personal computers, and support reading and writing to Optical Memory Cards in the DELA format.

4.13.3.2 Technical Requirements.

The Optical Memory Card Reader/Writer connectors shall be compatible with AT-compatible PCs. The Contractor shall provide a high-speed computer interface card for the computer. No damage shall occur to the Optical Memory Card or the Reader/Writer when the Card is removed before, during, or after reading or writing operations. The Reader/Writer shall be designed for maximum ease of card insertion and removal, and shall withstand those environmental conditions commonly encountered by data processing equipment. The Optical Memory Card Reader/Writer shall be compact and fit on a desktop.

4.13.3.3 Separately Orderable Components.

The Contractor shall provide the following Separately Orderable Components for the Optical Memory Card Reader/Writer:

- a. Computer Interface Card;
- b. Cable for Computer Interface Card.

4.13.4 Contact Memory Device, Type I, Reader/Writer for PDCT.

The Contractor shall provide small, portable devices that enable reading and writing of data to Contact Memory Devices, Type I. A Contact Memory Device, Type I, Reader/Writer is a probe that fits over the Contact Memory Device, Type I, and supplies a small electrical current to read from, and write to, the Device. The probe shall support connection by a cable or wireless connection to the PDCT-B1. All provided Contact Memory Devices, Type I, shall be capable of being read by the same Reader/Writer.

4.13.5 Magnetic Stripe Encoders and Readers.

4.13.5.1 Stand-Alone Magnetic Stripe Encoder.

The Stand-alone Magnetic Stripe Encoder is used to write data to, and read data from, ANSI/ISO standard magnetic stripe tracks.

4.13.5.1.1 General Requirements.

The Contractor shall provide a Stand-alone Magnetic Stripe Encoder that can encode standard two-track, high-coercivity, magnetic stripes, using manual inputs. The Stand-alone Magnetic Stripe Encoder shall operate either in the stand-alone mode, or shall interface with AT-compatible PCs. Software shall be provided with the Encoder that allows the user to encode ANSI/ISO standard magnetic tracks 1 and 2 with user-provided information using an AT-compatible PC.

4.13.5.2 Magnetic Stripe Reader, Keyboard/Computer Configuration.

The Magnetic Stripe Reader, Keyboard/Computer Configuration (also known as a keyboard wedge reader) allows magnetic stripes to be read using an AT-compatible PC, or other host computer.

4.13.5.2.1 General Requirements.

The Contractor shall provide a Magnetic Stripe Reader, Keyboard/Computer Configuration. This Swipe Reader shall interface with an AT-compatible PC, or other host computer, and allow data read from ANSI/ISO standard magnetic tracks 1 and 2 to be displayed on the computer monitor, as though the data had been keyed in manually. Software shall be provided with the Reader, if required, that allows the user to read, display, and process information read from tracks 1 and 2 of magnetic stripe cards.

4.13.5.3 Magnetic Stripe Reader for PDCT.

4.13.5.3.1 General Requirements.

The Contractor shall provide a Magnetic Stripe Reader for PDCT that interfaces with the PDCT-B1 subclass. The Magnetic Stripe Reader for PDCT shall be capable of reading ANSI/ISO Standard magnetic tracks 1, and 2. Software shall be provided with the Reader, if required, that allows the user to read, display, process, and store data read from magnetic stripe cards.

4.13.6 Reader/Writer for Contact Memory Devices, Type II

Primary application of the Reader/Writer (probe) will be for use within maintenance facilities, although occasional outdoor use under moderate conditions may be expected.

The contractor shall provide Readers/Writers for the Contact Memory Devices, Type II, with the following attributes:

- a. Direct read/write probe connection to the PDCT Class C terminal. The PDCT must be able to read and write to both the 8kByte and 32kByte Contact Memory Devices, Type II.
- b. Each probe shall be provided with copy/license for any runtime modules, device drivers, etc., required to utilize probe and button functionality, including read/write of the buttons with the PDCT-C1.

c. An 8-hour battery duty cycle for PDCT-C1 in conjunction with use of probe, subject to technical limitations and additional power consumption required to write to the larger capacity memory devices.

4.14 TRANSIT CASE GROUPS.

The Contractor shall provide four functional Transit Case Groups of AIT II equipment consisting of twelve Configurations. The PDCT Group consists of five Configurations, the RF Access Point Group consists of two Configurations, the Bar Code Label Printer Group consists of four Configurations, and the Optical Memory Card Reader/Writer Group consists of one Configuration. The Contractor shall request a National Stock Number (NSN) for each Transit Case Group by submitting a DD Form 61, Request for Nomenclature. Additionally, the Contractor shall provide a B1GZ Transit Case Only for Government Ad Hoc Configuration.

4.14.1 Transit Cases.

The Contractor shall use best commercial practices in the design and manufacturer of the configured Transit Cases to protect the contained AIT II equipment. The Transit Cases shall be rigid, stackable, suitable for rugged environments, reusable, and waterproof to protect AIT II components during intermodal transport, and storage. Transit Cases shall protect AIT II components from rugged environment damage resulting from dropping during cargo loading and unloading, and vibration and shock when transported as loose cargo over unpaved secondary roads. The Transit Case shall be flexible enough to absorb shock, yet durable enough to protect the contents from forces striking the case from any angle. Transit Cases shall be equipped with automatic pressure-vacuum relief valves to accommodate differences in pressure from sea level up to an altitude of 40,000 feet. The Contractor shall certify the Transit Cases have been previously accepted by the DoD (i.e., tested and certified under MIL-STD 810D) for use in a rugged environment or have been manufactured and tested in accordance with ATA Specification 300, "Packaging of Airline Supplies"-1960 (R1996), for Category 1 containers. The test parameters shall be as follows:

a. Drop Test or Revolving Hexagonal Drum Test

(Note: Only one of the following four drop tests need be performed depending on the size and weight of the configuration.)

5.1 BAR CODE LABEL AND FORM DESIGN, AND PRINTING SOFTWARE.

5.1.1 Bar Code Label and Form Design Software.

Bar Code Label and Form Design Software is a set of programs in one package that will allow the Government user to design and print bar code labels and forms. The Contractor shall provide bar code label and form design and printing software with graphic support, as well as ISO 9075 SQL Call-Level Interface (open database connectivity). The software shall be capable of generating low, medium, high, and ultra-high Code 39 bar codes, as well as the other bar code symbologies listed in the paragraph entitled "Bar Code Symbologies". The software shall also be capable of generating DD 1348-1 and DD 1387 forms, and shall be designed to drive the provided bar code label printers. The Contractor shall provide software that allows rapid label and form design without having to learn the complexities of bar code symbologies and printer control languages, displays a "what-you-see-is-what-you-get" editor for designing bar code labels and forms, and allows viewing of bar code labels and forms prior to printing. The software shall also permit the use of fixed or variable data for label or form text and bar codes, and shall import information to be used with labels and forms from databases. The bar code label and form design and printing software shall be capable of running under Windows 95®, Windows 98®, and Windows NT®. The software shall support network printing, and no custom programming shall be required for use.

5.1.2 Bar Code Printing Software.

The Contractor shall provide bar code printing software that prints on stand-alone print stations where bar code design capabilities are not needed. This software shall be capable of running under Windows 95®, Windows 98®, and Windows NT®.

5.2 APPLICATION SOFTWARE DEVELOPMENT KITS.

The Contractor shall provide Application Software Development Kits that can be used to produce executable code for all of the provided PDCTs. The software development kits shall support all of the features of the AIT II data collection terminals. Software development kit libraries provided by the Contractor shall interface with Visual Studio® Version 6.0. Library routines shall be callable by programs developed with these languages. The SDK shall include all necessary library routines, run time support, and distribution rights to permit full functionality of developed software using the SDK on all deployed platforms. The Contractor shall provide the following software development kits:

- a. Software Development Kit for PDCT-A Class;
- b. Software Development Kit for PDCT-B Class;
- c. Software Development Kit for PDCT-C Class.

5.2.1 Software Development Kit for Contact Memory Devices, Type II, and Reader/Writer

Contractor shall provide a Software Development Kit that will be useable with eMbedded Visual Tools 3.0. Library routines shall be callable by programs developed with these languages. The SDK shall include all necessary library routines, run time support, and distribution rights to

permit full functionality of developed software using the SDK on the PDCT-C class platform. The SDK shall include necessary software components and libraries to program full functionality of the Contact Memory Devices, Type II, and Reader/Writer on the PDCT-C terminal (in conjunction with the Microsoft CE SDK and the Symbol PDCT-C SDK). Consideration must be given to the SDK not only supporting the current PDCT Class C terminal which is based on the Windows CE operating system, but also a PDCT Class C terminal based on the Windows Pocket PC specification.

5.3 APPLICATION GENERATION SOFTWARE.

The Contractor shall provide Application Generation Software for the data collection terminals and the host computer. Generated software shall support batch processing, and wired and wireless transactions. The software code generator shall enable programmers and technically oriented, non-programmers to create AIT II application programs for data collection terminals. The application generation software shall produce executable code for the data collection terminals and the host computer. The application generation software shall provide graphic design, automatic program generation, and an integral simulator to test compiled code, application functionality, and operation prior to the final application being installed on data collection terminals. The Contractor shall provide the following application generation software:

- a. Application Generation Software for PDCT-A Class and Windows 95®, Windows 98®, and Windows NT®;
- b. Application Generation Software for PDCT-B Class and Windows 95®, Windows 98®, and Windows NT®;
- c. Application Generation Software for PDCT-C Class and Windows 95®, Windows 98®, and Windows NT®.