

TERMS OF REFERENCE

SUPPLY, INSTALLATION, OPERATION AND MAINTENANCE OF COMMON USER SYSTEM/TERMINAL EQUIPMENT (CUTE) AT THE CLARK INTERNATIONAL AIRPORT (CRK)

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A. Introduction

This Terms of Reference (TOR) describes the procedures that shall be followed in connection with the selection of a firm who will supply, install, operate and maintain a Common User System/Terminal Equipment (CUTE) at the Clark International Airport (CRK).

The selection process will adhere to the relevant procedures of Republic Act No. 9184 (The Government Procurement Reform Act) and its Implementing Rules and Regulations, where applicable, in ensuring transparency, objectivity, fair play, and the best interests of the government.

B. Requirements / Specifications

Item	SUPPLY, INSTALLATION, OPERATION AND MAINTENANCE OF COMMON USER SYSTEM/TERMINAL EQUIPMENT AT THE CLARK INTERNATIONAL AIRPORT
1.0	General Requirements
1.1	The common-use platform will serve as a shared passenger handling platform for multiple carriers to perform check-in and boarding operations seamlessly. The CUTE solution will enable passenger check-in desks and gate areas to be equipped with computers, boarding pass printers, and baggage tag printers, document printers and boarding gate readers that can be used by multiple airlines. Common Use Terminal Equipment system shall mean all the required components for typical CUTE operation.
1.2	The system should allow the connection of all areas of the passenger terminal to a central server and gateways including remote kiosk installed for airport lounge. The solution should allow cost savings to be realized through the deployment of smaller scale mini core rooms at the airports where there are typically between 10 to 100 workstations.
1.3	The bidder/contractor must submit a written proof that their company has at least 5 years experience/specialties in the supply, installation, commissioning and maintenance, and provider of the Common User System/Terminal Equipment being used to other international airport terminals.
1.4	The role of the contractor will be to design, install and commission a complete CUTE solution for CRK. The work will include the supply of all software, hardware and materials plus the provision of all necessary integration requirements to allow these components to operate in a seamless CUTE environment.

1.5	The scope of work shall not in any way limit the true intent of the project. It shall be the responsibility of the bidder/contractor to incorporate any works or other incidental expenses that the contractor deems necessary to satisfy the true intent of the project to the best engineering standard and practices.
1.6	The contractor shall have full knowledge of the project, work and site condition, and have reviewed the true intent of the project and bid documents, and thus warrants the availability of the labor, works, and specialties to the system, systems, operation and maintenance of the new Common User System/Terminal Equipment at CRK.
1.7	The bidder/contractor must be a local authorized representative of the leading Common User System/Terminal Equipment system and must have qualified and trained operation and maintenance personnel that will handle <u>24 hours, 7 days per week</u> operations of CRK.
1.8	<p>The Bidder/Contractor shall include a Billing System that can generate Billing reports based on Airline login/logoff in CUPPS usage such as:</p> <ul style="list-style-type: none"> a. Capture and process daily, weekly or monthly input data from Airlines Login/Logoff usage. b. Generate CUPPS Login/Logoff usage report per Airline c. Provide Statistical reporting and analysis capabilities
1.9	The Bidder/Contractor shall include a Passenger Loading Report (PLR) software that can generate periodic reports on the number of passengers and obtain information for each departing flight for Billing purposes.
1.10	The Bidder/Contractor shall include a Local Departure Control System (LDCS) fully featured system that can serve as back-up in case of failure of the host DCS or Gateway to avoid the possibility of having to fall back to a manual check-in. The DCS should fully conform to all relevant IATA standards for DCS systems and should be certified to operate on the common use platform installed at the airport.
1.11	<p>The Bidder/Contractor shall install a Common Use Self Service (CUSS) Kiosk at the Trinoma Clark Airport Lounge</p> <p>The kiosk shall also be connected to the CUPPS system of Clark International Airport including gateways and interfaces.</p> <p>The kiosk is designed to support current industry standards, as well as future developments, the kiosk incorporates the latest in CUSS kiosk technology</p> <p>The kiosk's modular design supports multiple peripheral configurations and allows for easy field upgrades. It's simple, uncomplicated layout makes it easy to access each component and quickly replenish paper stock. From an accessibility standpoint, the kiosk conforms to the American Disability Act (ADA) standard for barrier free design.</p>

1.12	The system will be required to provide the environment on which each airline or handling agent can access their required Departure Control System (DCS) at the check-in counter and at the boarding gates at Clark International Airport and all known related developments.
1.13	Full support services after complete installation of the system within the duration of the contract.
1.14	The contractor shall perform such additional works as may be requested by the CIAC related to the Scope of Services under such terms and conditions to be mutually agreed upon by both parties.
2.0	Scope of Services
2.1	<p>The works include the furnishing of materials, spare parts, labor, tools, equipment, system, test instruments, apparatus and other engineering services necessary for the Supply, Installation, Operation and Maintenance of Common User System/Terminal Equipment for CRK. This includes the following:</p> <ol style="list-style-type: none"> 1. Redesign of Local Area Network for CUTE that currently exist at CRK: <ol style="list-style-type: none"> i. Reuse of existing cable facilities (e.g. Fiber, Cat 5). ii. Testing and replacement (e.g. installation of new cables if necessary or using existing spare cables) of defective existing cable facilities iii. Redesign, replacement and installation of local active network components 2. Testing and commissioning of the whole system 3. Checking and testing of completed services as required for the project 4. Manning of the <u>24 hours x 7 days per week</u> operation and maintenance of the system 5. Submittal of As Built Plan 6. The core room/space and power supply will be to the account of CIAC. Central air-conditioning will also be provided. 7. Maintenance training of personnel required under the project 8. Operators training of personnel required under the project 9. Acceptance and turnover of the completed project
3.0	Technical Requirements
3.1	The CUTE solution shall provide to the operator an interface to manage their respective airline data and the individual local and host applications. The user interface shall be a graphical, web-based environment, and shall provide a common look and feel for all CUTE applications. Authorized users shall have the ability to select their specific applications for execution (e.g., airline terminal emulator, DCS, overhead display) via the common user menu.

3.2	The CUTE system solution shall support all airlines applications regardless of the platform they are developed on i.e. legacy and IP-based host applications. Other than standard certification activities, the airline applications would not require modification to be supported on the platform.
3.3	The CUTE solution shall comply with the latest revision of IATA RP 1797.
3.4	All computer hardware for full and comprehensive Common Use Passenger Processing System should be all, including Intelligent Workstations (IWS), Document Printers (DCP), Boarding Gate Scanners (BGR), Baggage Tag Printer (BTP), Boarding Pass Printers (ATB), Bar Code Readers (BCR), Optical Character Recognition (OCR), Magnetic Stripe Reader (MSR) and scanner for passport reading.
3.5	The system shall be designed to be accessed via a common browser-based interface from any CUTE workstations.
3.6	The system must be scalable to any number of workstations and allows multiple applications (such as airline TEs) to be run on multiple airline hosts from a single workstation, thus maximizing the use of airport resources and space.
3.7	The system should enable peripheral devices such as boarding pass printer (ATB) and baggage tag printer (BTP) that is deployed at a particular workstation to be accessed by multiple users. The system should also support AEA standard peripherals, and the supplier should propose devices that offer clear cost savings benefits.
3.8	The system should have no restrictions to integrate with other airport systems such as FIDS, BRS, Airport Database, Gate Management System, and other systems presently deployed at the airports.
3.9	The components of the CUTE platform shall be seamless integrated to provide a robust shared platform to support passenger operations at CRK.
3.10	The solution shall support ability to print standard commercial off-the-shelf Windows printers using plain paper.
3.11	The solution shall utilize proven and IATA compliant devices to support carrier operations
3.12	The solution shall utilize proven software solutions to minimize problems/disruptions to airport operations and improve the overall airport experience for the passenger
3.13	The solution shall optimize the airport real-estate and resources to allow

	for modular growth and flexibility.
3.14	The solution shall leverage on opportunities for cost reduction where feasible.
3.15	The system architecture should be based on “client-server” configuration.
3.16	The system shall support future Common Use Passenger Processing Systems (CUPPS) applications.
3.17	The existing Core Room shall be used to house the CUPPS core server and other systems and sub systems. This room shall serve as the central location for servers, routers, gateways required for the CUPPS and other subsystems including core serve and its new power supply UPS system.
3.18	The contractor/bidder shall provide racks and cooling units to support the equipment housed in the core server room.
3.19	The existing LAN cabling required to support the CUPPS shall be used. The contractor are responsible for any additional cabling works, active components and configurations for the additional equipment and subsystems as well as spare units that will be required to operate the LAN facility efficiently.
3.20	The system shall provide one or more gateways to which communications connections to each airline Host local DCS can be connected.
3.21	If the connection between a workstation and gateway is disconnected due to malfunction, the system shall ensure that it is reconnected using alternative gateway, preferably without the need for intervention by the end user.
3.22	The system shall provide facilities to enable new or relocated counters or gates to be added to the system. The system shall hold data associated with each gate or counter intelligent workstation.
3.23	The system shall provide facilities for adding new software configurations to the system such as new emulators, new airline DCS, workstations and peripherals, Server and gateway upgrades.
3.24	The system shall allow new version of application software to be attached to the network and shall provide test facilities to check that all workstations and peripherals can make full use of it.
3.25	The system must be designed so that a single point of failure shall not be capable of disconnecting any of the following from the network: <ul style="list-style-type: none"> • A Host or Local DCS • Network Management System • The Configuration Server
3.26	All servers shall be duplicated to minimize the impact of failure. The effect of a failure of a single server shall be invisible to the end user. <ul style="list-style-type: none"> • If the server is responsible for downloading software to

	<p>workstations, a duplicate server should provide hot backup service immediately.</p> <ul style="list-style-type: none"> • If the server is a gateway, and the service to the gates or counters using the gateway is interrupted, the system should re-establish connections with appropriate DCS through an alternative gateway. User should be notified of a failed connection and for security reasons, shall be required to log in again. • All failures and conditions at time of failure should be logged and recorded in a log file.
4.0	Security Requirements
4.1	<p>The common user system design will be required to conform to the following SECURITY REQUIREMENTS, (Security to be provided at a minimum of three levels):</p> <ul style="list-style-type: none"> • Access to Common User System configuration function; • Access to particular emulator or airline application from work station. • Access to an airline Host Local DCS once logged in. <p>Compliance with PCDISS (Payment Card Industry Data Security Standards) https://www.pcisecuritystandards.org</p>
4.2	Security access to the system for each workstation prior to airline application or emulator will be solely from the station control for each Local Area Network (LAN)
4.3	Security access to emulator or airline application from a workstation will consist of a minimum of user ID and password supplied by the user.
4.4	If the password is necessary, the password shall be accepted provided it is alphanumeric.
4.5	Consumables – Paper consumables will be under airline’s responsibilities
5.0	Functional Requirements
5.1	<p>The CUTE system shall have the following features:</p> <ul style="list-style-type: none"> ▪ Allow multiple instances of Windows, DOS or Java applications to allow access to multiple airline host applications from a single workstation ▪ Provide a robust peripheral management utility which would enable airline applications access to the shared common-use devices ▪ Allow multiple carriers to use the same check-in and gate hardware for their operations ▪ Allow each airline to have individual airline login to their host application ▪ Able to support both legacy and IP-based host airline protocols

	<ul style="list-style-type: none"> ▪ Each CUTE workstation shall have the ability to support the relevant airline terminal emulators for access to the respective airlines host system ▪ Support for wireless technologies ▪ Must be able to support the incorporation of newer technologies e.g. CUSS and RFID in future ▪ The boarding pass and bag tag printers must have the ability to support common stock or airline provided stock as desired ▪ The CUTE system must be able to be remotely monitored. ▪ Supports migration path to CUPPS. ▪ Have at least one CUPPS pilot site ▪ Supports BCBP by converting AEA magnetics to and from barcode. ▪ Support Windows printing.
5.2	<p>CUTE system shall be able to interface to or support standard airport/airline industry applications such as:</p> <ul style="list-style-type: none"> ▪ Airline Departure Control System (DCS) ▪ Local Boarding Application ▪ Local Departure Control Systems ▪ Flight Information System (FIDS) ▪ Self-service kiosks ▪ Interfacing with downstream applications e.g. Baggage Reconciliation Systems
5.3	<p>DCS Functions</p> <p>The CUTE system will be capable of executing the standard operational check-in and boarding tasks based on industry standards. The tasks considered shall include, but not be limited to:</p> <ul style="list-style-type: none"> ▪ Processing passenger, baggage and ticketing information; ▪ Reading OCR documents; ▪ Issuing boarding passes in 2DBC; ▪ Issuing of Bag Tags; ▪ Logging for audit trails; and ▪ Interfacing with downstream systems e.g. Baggage Reconciliation etc.

5.4	<p>2D barcode support</p> <p>The vendor must have the capability within the CUTE platform to support the conversion of Automated Ticket and Boarding Pass version 2 (ATB2) data from the airline host to Portable Data File (PDF) 417 2D barcode format and vice versa seamlessly without requiring changes to be made to the airline host application.</p> <p>This feature/product is required by CRK to enable airlines who are not 2D barcode ready to make a seamless transition without the pressure of having to enhance their legacy host applications within the stipulated IATA timeframe.</p> <p>The conversion software must be made available by the CUTE provider as part of the 2D barcode product suite. The following feature is mandatory as it will enable CRK to transition from the expensive ATB2 devices and stock to the less costly 2D barcode ready peripherals.</p> <p>The vendor must propose a solution for this 2D barcode data conversion and must have demonstrated having this product/ feature in operation at a CUTE airport for at least 4 months.</p> <p>The vendor must also propose the relevant certified devices to support this requirement.</p>
5.5	<p>Device Connectivity and Communication</p> <p>TCP/IP, USB, serial or parallel interfaces shall be accepted at the sub-component level (printers etc.). The CUTE vendor shall propose the most cost effective system solution, regardless of sub-component device connectivity methods, so long as the entire solution has been certified for use by the proponent.</p> <p>At the TCP/IP Ethernet layer, all information shall be communicated between the server(s) and the clients via dedicated VLANs. The system shall synchronize the date and time on all devices from a designated source.</p> <p>If required, the successful CUTE system proponent shall provide in advance, a detailed network layout schematic and all connectivity requirements to CRK and the Common Network Infrastructure (CNI) contractor for inclusion into the final design. The CUTE contractor shall coordinate network requirements and all activities with the CNI contractor on an ongoing basis.</p>
5.6	<p>Administration</p> <p>CUTE system administration shall be via a central GUI based management tool capable of remote administration of all CUTE components. Administrative properties of all CUTE devices shall include, but not be limited to:</p>

	<ul style="list-style-type: none"> ▪ Network parameters ▪ Operational setup parameters ▪ Runtime information ▪ Health status information
5.7	<p>Auditing</p> <p>The CUTE system shall provide an audit trail on a per-user and per-workstation basis. The audit trail file for each subsystem shall indicate any time-stamped changes that occurred to applications configuration, data structure, or database fields/records, and other details of the change. This information shall be stored on CUTE servers, and shall be available for remote interrogation upon proper authentication.</p>
5.8	<p>Software</p> <p>The CUTE contractor shall install all software required for delivery of the CUTE solution. All such software shall conform, at minimum, to the following:</p> <ul style="list-style-type: none"> ▪ Commercial-off-the-shelf, 32-bit ▪ Support multithreading ▪ Support Symmetric Multi-Processing (SMP) ▪ Support conversion of ATB2 data to 2D bar code ▪ Have latest, at time of delivery, software patches and service packs applied ▪ Support TCP/IP network protocol ▪ Support Windows printing ▪ Built using industry-standard application development software such as Java Visual Basic, C/C++ and XML
5.9	<p>Barcode Transformation</p> <p>The CUTE platform must have the built in optional support for 2D barcode transformation to support IATA's Simplify the Business initiative to have all airlines be 100% 2D barcode compliant by 2010. The CUTE platform must support the conversion of airline host data to IATA compliant 2D barcode data seamless without requiring changes to be made to the airline DCS or TEs except for modification to the airline PECTABs.</p>
5.10	<p>Windows Device Printing</p> <p>The CUTE platform must have the built in optional support for Windows</p>

	print devices controlled by Windows driver. The CUTE platform must support printing using Windows print spooler.
5.11	<p>Workstation Operating System</p> <p>The CUTE contractor shall select and pre-install Microsoft Windows Operating System (incorporating all the latest updates and patches) to use across all workstations.</p>
5.12	<p>Server Operating System</p> <p>The CUTE contractor shall select and pre-install a standardized Operating System to use across all servers. The proposal shall specify the server operating system along with any exceptions. The selected Operating System shall, at minimum, conform to the following:</p> <ul style="list-style-type: none"> ▪ Commercial-off-the-shelf, 32-bit stable production release ▪ Support multitasking and multithreading ▪ Support Symmetric Multi-Processing (SMP) ▪ Have latest, at time of hand-over to the CRK, software patches and service packs applied
5.13	<p>Database Software</p> <p>All database software products selected for the delivery of the CUTE system shall, at minimum, conform to the following:</p> <ul style="list-style-type: none"> ▪ Commercial-off-the-shelf, industrial grade RDB; ▪ Latest, stable version, at time of delivery, from one software vendor; ▪ Based on accepted and recognized industry standards; ▪ ODBC/SQL compliant and capable of supporting real time data warehousing; ▪ Capable of self-maintenance with configuration control. ▪ Designed such that the addition of fields and/or tables is easily accommodated
5.14	<p><u>Host Gateways and Interfaces</u></p> <p>Wide Area Network</p> <p>The proposal shall include interfaces to a Host DCS System and will include:</p> <ul style="list-style-type: none"> ▪ Any additional routers and leased line circuits required for cut-over

	<ul style="list-style-type: none"> ▪ Connection to Airline gateway / router equipment <p>The CUTE vendor shall coordinate with the airlines all the required steps and procedures in order to establish connectivity and communication with the carrier hosts.</p>
5.15	Equipment Specifications
5.15.1	<p><u>Core Servers</u></p> <p>1. General</p> <p>The contractor shall recommend an appropriate server configuration for the proposed solution.</p> <p>Only hardware that meets approval of the Operating System (OS) vendor shall be considered. All the hardware shall be commercial-off-the-shelf and use industry standard non-proprietary components.</p> <p>Minimum server requirements:</p> <ul style="list-style-type: none"> ▪ All servers shall be latest and stable technology at time of delivery, from a single vendor; ▪ Rack mountable in a standard 19-inch rack; ▪ Intel or AMD based 32-bit, with 2 and 4-way SMP support for up to four (4) processors; ▪ The total processor performance shall be delivered such that the total processor utilization under maximum expected load shall not exceed 25%; ▪ Integrated 1000Mbps network adapters (as required); ▪ Integrated hardware RAID to allow the capacity to be increased by addition of RAID drives without system shutdown. At least one drive per array shall be in hot standby with automatic fail-over controlled by the RAID controller. ▪ Servers shall be individually protected by managed UPS devices. ▪ Rack mountable 1U high keyboard with integrated pointing device. <p>2. Configuration</p> <p>In addition to minimum hardware requirements, the following configuration guidelines shall be observed:</p> <p>The design should allow a server to be powered down and replaced without disruption to the network or applications.</p> <p>The hardware design shall incorporate redundancy to ensure that there is</p>

	<p>no single point of failure.</p> <p>Servers shall be “dual-homed” to the LAN core switches via server grade Gigabit Ethernet NICs.</p> <p>3. Displays (Servers)</p> <p>The CUTE contractor shall include 17-in flat panel, rack mountable flip-up type LCD monitor with the appropriate characteristics to meet the needs of particular applications. All monitors supplied shall be of prevailing performance characteristics at time of delivery.</p> <p>The minimum performance criteria for LCD display are:</p> <ul style="list-style-type: none"> ▪ Rack mountable 1U high, flip-up type. ▪ 1280 x 1024 non-interlaced resolution ▪ 15-in viewable area ▪ Viewing angle of 120 degrees
5.15.2	<p><u>Host Gateways and Interfaces</u></p> <p>1. Host Gateways</p> <p>Gateways must be proven common use gateways, running at a minimum of five airports of equal or larger size than CRK. Gateways must provide support for the legacy protocols used by the current airlines for CRK. Gateways should provide support for any airlines that are expected to be added to the CRK in the near future.</p> <p>2. Airline Host Interfaces</p> <p>CUTE must support any gateway required by workstation applications and comply with the IATA RP1797 requirements.</p>
5.15.3	<p>Local Area Network</p> <ul style="list-style-type: none"> • Redesign of Local Area Network for CUTE that currently exist at CRK: • Reuse of existing cable facilities (e.g. Fiber, Cat 5). • Testing and replacement (e.g. installation of new cables if necessary or using existing spare cables) of defective existing cable facilities

	<p>1. CUTE LAN Design Criteria</p> <p>Network design shall be based on the common use network infrastructure environment that will exist at the Airport at time of CUTE deployment. The CUTE system shall be Ethernet TCP/IP based at the server and workstation levels. The systems shall adhere to a Client-Server or Peer-Peer (where allowed) networking models. The end devices shall be the clients to the primary/secondary servers. All end device addressing shall be coordinated with each airline.</p>												
5.15.4	<p>Intelligent Workstations to be installed at the following:</p> <table border="0"> <tr> <td>Check-in counter</td> <td>– 34 sets</td> </tr> <tr> <td>Boarding Gates (Int'l)</td> <td>– 12 sets</td> </tr> <tr> <td>Boarding Gates (Domestic)</td> <td>– 8 sets</td> </tr> <tr> <td>Transfer Desk</td> <td>– 1 set</td> </tr> <tr> <td>Core/Server Room</td> <td>– 1 set</td> </tr> <tr> <td>Spare units/sets</td> <td>– 5 sets</td> </tr> </table> <p>1. Workstations</p> <p>All workstation hardware for systems specified in this document shall meet or exceed requirements outlined in this section.</p> <p>Only hardware that meets approval of the Operating System (OS) vendor shall be considered. The systems shall use industry standard non-proprietary components. At minimum, all workstations shall contain the following:</p> <ul style="list-style-type: none"> ▪ All workstations shall be latest and stable technology at time of delivery, from a single vendor; ▪ Intel or AMD 32-bit processor. ▪ The total processor performance shall be delivered such that the total processor utilization under nominal maximum expected load shall not exceed 25%; <ul style="list-style-type: none"> - 4 GB RAM - Integrated 10/100 Mbps Ethernet NIC - CD-R/DVD ROM - 1 serial ports, 1 parallel port, and 4 USB v2.0 ports (all in back of chassis) - keyboard 	Check-in counter	– 34 sets	Boarding Gates (Int'l)	– 12 sets	Boarding Gates (Domestic)	– 8 sets	Transfer Desk	– 1 set	Core/Server Room	– 1 set	Spare units/sets	– 5 sets
Check-in counter	– 34 sets												
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	<p>2. Displays (Workstations)</p> <p>The CUTE contractor shall include 21-in flat panel LCD monitor with the appropriate characteristics to meet the needs of particular applications. All monitors supplied shall be of prevailing performance characteristics at time of delivery.</p> <p>The minimum performance criteria for a LCD display are:</p> <ul style="list-style-type: none"> ▪ 1280 x 1024 non-interlaced resolution ▪ 21-in viewable area <p>Viewing angle of 120 degrees</p>										
5.15.5	<p>Keyboard/Magnetic Stripe Reader (MSR) / Optical Character Reader (OCR) to be installed at the following:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 60%;">Check-in Counter</td> <td style="text-align: right;">– 34units</td> </tr> <tr> <td>Boarding Gates(Int'l)</td> <td style="text-align: right;">– 12 units</td> </tr> <tr> <td>Boarding Gates(Domestic)</td> <td style="text-align: right;">– 8 units</td> </tr> <tr> <td>Transfer Desk</td> <td style="text-align: right;">– 1 set</td> </tr> <tr> <td>Spare units/sets</td> <td style="text-align: right;">– 5 units</td> </tr> </table> <p>1. Magnetic Stripe Reader Magnetic Stripe Readers shall meet or exceed the following criteria:</p> <ul style="list-style-type: none"> ▪ Capable of reading data in accordance to ISO 7811/2 & 6 ▪ Capable of reading 3 and 4 track magnetic stripes ▪ Capable of (but not limited to) accepting: <ul style="list-style-type: none"> Credit Cards Frequent Flyer Cards Employee Travel Cards <p>2. Optical Character Reader</p> <ul style="list-style-type: none"> ▪ Optical Character Readers shall meet or exceed the following criteria: ▪ Capable of reading OCR A according to ISO 1073/1 ▪ Capable of reading CCR B according to ISO 1073/2 ▪ Capable of roller feeding documents at optimum speed ▪ Capable of (but not limited to) reading: <ul style="list-style-type: none"> Machine Readable Document (MRD) i.e. Passports and Visas 	Check-in Counter	– 34units	Boarding Gates(Int'l)	– 12 units	Boarding Gates(Domestic)	– 8 units	Transfer Desk	– 1 set	Spare units/sets	– 5 units
Check-in Counter	– 34units										
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Boarding Gates(Domestic)	– 8 units										
Transfer Desk	– 1 set										
Spare units/sets	– 5 units										

	<ul style="list-style-type: none"> ▪ ID Cards ▪ ATB Tickets ▪ TAT Tickets
5.15.6	<p>Boarding Pass Printer (BPP) to be installed at the following:</p> <p>Check-in counter – 34 sets Boarding Gates(Int'l) – 6 sets Boarding Gate(Domestic) – 4 sets Transfer Desk – 1 set Spare units/sets – 5 sets</p> <p>1. Boarding Pass Printer (BPP)</p> <p>BPP printers shall meet or exceed the following criteria: Compliance with IATA resolutions 722(as appropriate) RP 1723</p> <ul style="list-style-type: none"> ▪ AEA 99 (latest standards) ▪ Single ATB coupon or wallet feed ▪ Direct Thermal Printing ▪ Extended graphics capability for logos and bar codes
5.15.7	<p>Baggage Tag Printer to be installed at the following:</p> <p>Check-in counter – 34 sets Transfer Desk – 1 set Boarding Gates (Int'l) – 6 sets Boarding Gate (Domestic) – 4 sets Spare units/sets – 5 sets</p> <p>1. Bag Tag Printers (BTP)</p> <p>Bag Tag Printers shall meet or exceed the following requirements:</p> <ul style="list-style-type: none"> ▪ Compliance with IATA requirements ▪ Direct thermal Printing ▪ Extended Graphics including IATA smooth fonts and True Type ▪ Scalable font technology ▪ Support Bar codes 128, 39, 2 of 5, Int 2 of 5 and 2-D ▪ Handle both fan-fold and roll paper stock ▪ Capable of handling different tag lengths <p>Ability to have add-on feature for RFID chips in bag-tag stock.</p>

5.15.8	<p>Boarding Gate 2D Reader to be installed at the following:</p> <p>Boarding Gates(Int'l) – 12 units Boarding Gates (Domestic) – 8 units Spare units/sets – 2 units</p> <p>1. Barcode Reader (BCR)</p> <p>Bar Code Readers shall meet or exceed the following requirements:</p> <ul style="list-style-type: none"> ▪ Compliant with IATA Resolutions; ▪ Ability to read bar codes 128, 39, 2 of 5, Int 2 of 5, 2D PDF417; ▪ Scan rate should be at least 35/second.
5.15.9	<p>Document printer to be installed at the following:</p> <p>Boarding Gates (Int'l) – 6 units Boarding Gates(Domestic) – 4 units Core/Server – 0 - unit Spare units/sets – 1unit</p> <p>1. Document Printer (DCP)</p> <p>Document printers shall meet or exceed the following criteria:</p> <ul style="list-style-type: none"> ▪ Printers using dot-matrix technology ▪ 20 pages per minute (PPM)
5.15.10	<p>Airport Lounge Kiosk: 1 set at Trinoma Clark Airport Lounge</p> <p>The kiosk provides the following standard features:</p> <ul style="list-style-type: none"> • PC • UPS • 17 inch LCD with SAW technology touchscreen • Card reader • Full-page passport reader with RFID function & OCR data capture • Barcode reader • Wide format boarding pass printer (GPP) • Front and rear access doors with door-open sensors • Remote power management module • Bagtag printer • Wireless device

	<ul style="list-style-type: none"> • Pedestal with stability base plate • Service keyboard • Standard LAN connections • 60 Hz or 230VAC 50 Hz <p>The contractor shall submit the proposed enclosure for the kiosk.</p>
5.15.11	<p>Uninterrupted Power Supply to be installed at the following:</p> <p>Check-in counter – 34 sets Boarding Gates (Int'l) – 12 sets Boarding Gates(Domestic) – 8 sets Airport Lounge – 1 set Transfer Desk – 1 set Core/Server Room – 2 sets Spare units/sets – 2 sets</p> <p>1. Uninterrupted Power Supply (UPS)</p> <p>Uninterrupted Power Supply shall meet or exceed the following criteria:</p> <ul style="list-style-type: none"> ▪ Output Power Capacity of 720Watts/1200VA ▪ Typical Backup Time at Half Load of 10 minutes (360watts) ▪ Typical Backup Time at Full Load of 4 minutes (720watts) ▪ Nominal Output Voltage of 230V ▪ Nominal Input Voltage of 230V ▪ Input Frequency of 50/60Hz +/- 3 Hz
5.16	<p>Training</p> <p>The supplier will provide training to the airport personnel in the use of the system.</p> <p>The supplier will provide training sessions (Training of Trainers) in English. This training shall be conducted on-site at the airport.</p> <p>In "Train the Trainer" format, provide at least two (2) four-hour sessions for representatives nominated by each airline and ground handler which shall include hands-on training.</p> <p>The supplier will provide training to the CIAC Technicians in the use and maintenance of the system.</p>
5.17	<p>Warranty must cover all supplied workmanship, hardware in core room and network equipment supplied by supplier and software for the entire period of the contract.</p>

5.18

References and Standards

The CUTE system shall be developed and implemented for CRK, based on the industry standards, principles and practices including but not limited to the following:

- AEA Technical Spec “Parametric ATB Data Concept” (PECTAB 99) (March 2001)
- IATA - Passenger Services Conference Resolutions Manual - Resolution 722c “Automated Ticket/Boarding Pass (ATB) and Multiple Purpose Document (MPD) Coupon-by-Coupon Technical Specification” 21st Edition
- IATA - Passenger Services Conference Resolutions Manual - Resolution 722d “Off Premise Automated Ticket/Boarding Pass Version 2 (OFATB2)” 21st Edition
- IATA - Passenger Services Conference Resolutions Manual - Resolution 722e “Automated Ticket/Boarding Pass (ATB) and Multiple Purpose Document (MPD) Coupon-by-Coupon Technical Specification” 21st Edition
- IATA - Passenger Services Conference Resolutions Manual - Recommended Practice 1797 “Common Use Terminal Equipment (CUTE) Systems” 21st Edition
- ISO 1073-1:1976 – “Alphanumeric character sets for optical recognition -- Part 1: Character set OCR-A -- Shapes and dimensions of the printed image” (March 30 2001)
- ISO 1073-2:1976 – “Alphanumeric character sets for optical recognition -- Part 2: Character set OCR-B -- Shapes and dimensions of the printed image” (March 29 1999)
- ISO/IEC 7811-2:2001 – “Identification cards -- Recording technique -- Part 2: Magnetic stripe -Low coercivity” (February 1 2001)
- ISO/IEC 7811-6:2001 – “Identification cards -- Recording technique -- Part 6: Magnetic stripe -High coercivity” (February 1 2001)
- FCC -Part 15 “Radio Frequency Devices – Class A – Digital Devices” (December 18 2001)

Specific to network communications, the CUTE system shall follow standards specified below and applicable derivatives, as agreeable with network communication technologies in place at time of CUTE

	deployment: <ul style="list-style-type: none"> ▪ IEEE 802.3 Ethernet ▪ IEEE 802.11b/g Wireless LAN ▪ IEEE 802.3af Power over Ethernet
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List of Abbreviations:

- CUPPS – Common Use Passenger Processing System
- ATB – Automated Ticket and Boarding Pass
- BTP – Baggage Tag Printer
- DCS – Departure Control System
- IWS – Intelligent Work Station
- DCP – Document Printer
- BGR – Boarding Gate Reader
- BPP – Boarding Pass Printer
- LAN – Local Area Network
- WAN – Wide Area Network
- MSR – Magnetic Stripe Reader
- OCR – Optical Character Recognition
- GUI – Graphical User Interface
- IP – Internet Protocol
- IATA – International Air Transport Association

C. Business Terms

1. Terms of the Contract

The contract is for a period of three (3) years, exclusive of installation period.

2. Performance Commitment

The project is for the supply, installation, operation and maintenance of a Common User System/Terminal Equipment at the Clark International Airport (CRK).

a. The cost of installation of equipment shall be on the account of the winning proponent. Any and all removals, replacements, re-installations shall be on the account of the winning proponent.

b. All equipment shall be inspected and approved by the Engineering and Maintenance Department prior to installation.

c. The winning proponent shall be responsible for the maintenance repair of the equipment, such as, but not limited to, computer, printer, scanner, and all other equipment during the effectivity of the contract.

3. Monthly Concessionaire's Privilege Fee and Terms of Payment

Interested proponents shall submit their proposed Concessionaire's Privilege Fee. The Concessionaire's Privilege Fee (CPF) shall be based on a revenue share percentage of the total monthly facility fees collected by the proponent from the participating airlines at the Clark International Airport (CRK).

"Participating Airlines" refer to all airlines operating at CRK who have entered into a Service Agreement with the proponent. "Monthly Facility Fees" refer to the total facility fees charged and invoiced by the proponent to a participating airline for its use of the system in a single calendar month.

The CPF should not be lower than Twenty-Five Percent (25%) of the total monthly facility fees. The proponent who will submit the highest and most responsive and advantageous CPF shall be awarded the contract for this project.

The CPF shall be paid on or before the fifteenth (15th) day of every month for the duration of the contract.

4. Installation Period

The winning proponent will be granted a 75-day installation period.

D. Minimum Qualification Requirements

The firm intending to submit proposals must have the following qualifications:

1. The proponent must have a business track record for at least five (5) years or more in the supply of a Common User System/Terminal Equipment.
2. The proponent must have installed a Common User System/Terminal Equipment for five (5) major customers (local or international) for whom they have carried out a similar supply/service on a similar or larger scale within the last 5 years (company addresses and contact names and contact details with e-mail addresses should be included for verification purposes).
3. Must have good credit standing on any of its financial commitments to any financial institution, agency or party. CIAC reserves the right to conduct background and credit investigation of the proponents and reject the proposal of those found not to have a good credit standing.

4. The Proponent must have a minimum net worth of Ten Million Pesos (Php10,000,000.00) excluding deposits and/or advance for future subscriptions. Proponents are therefore required to submit proof of financial capability to handle the project.

E. Errors and Omissions in the Bid/Proposal

The proponents are responsible for reviewing all portions of this project. Proponents are to promptly notify the Selection Committee, in writing, if they discover any ambiguity, discrepancy, omission, or other error in the project. No notification and request for clarification shall be entertained five (5) days before the date of the opening of proposals. Supplemental Bulletin/s will be issued for modifications and clarifications.

F. Unacceptable Proposals

Among the causes for disqualification and rejection of a proposal include, but is not limited to, the following:

1. Evidence of collusion among the proponents.
2. Failure to meet the minimum qualifications.
3. Failure to offer the minimum CPF required.
4. Submission of false statement in any of the documents comprising the proposal and submission of falsified documents.
5. Submission of incomplete requirements as specified in the Proposal Contents.

G. Reservation of Rights by the CIAC

The issuance of this TOR does not bind the CIAC into entering into a contract with any proponent. CIAC expressly reserves its right at any time to:

1. Reject any or all proposals;
2. Request additional information from each proponents;
3. Ask proponents to clarify information on their proposals;
4. Rescind or reissue the project; and
5. Decide not to pursue the project.

H. Inquiries Regarding the Project

Interested parties will have an opportunity to pose questions at the Pre-Proposal Conference. Proponents may also submit written questions or requests for clarification regarding the project addressed to:

The Chairman
 CUTE Selection Committee
 Clark International Airport Corporation
 Corporate Office Building
 Clark Freeport Zone
 Pampanga

II. SCHEDULE AND INSTRUCTION TO PROPONENTS

A. Qualified Proponents

Only proponents, who purchased this TOR, are qualified to join the selection process. Interested parties may purchase this document in the address given above in the amount of PESOS: TEN THOUSAND PESOS (Php10,000.00). The said price is non-refundable except in case where CIAC cancels the project.

B. Schedule

The schedule for the selection process is as follows:

Advertisement of Request for Proposal	February 1, 2017
Purchase of the Terms of Reference	February 1, 2017
Ocular Inspection of Passenger Terminal Building	February 7, 2017
Pre-Proposal Conference	February 7, 2017
Deadline for submissions of written questions or requests for clarification	February 12, 2017
Submission of Proposals	February 17, 2017
Opening of Proposals	February 17, 2017
Proposal Evaluation	February 18-21, 2017
Board Approval of the Award	between February 22-28, 2017
Issuance of the Notice of Award	March 1, 2017
Effectivity of the Contract	March 1, 2017

The schedule above is subject to change upon the sole discretion of CIAC.

C. Ocular Inspection and Pre-Proposal Conference

All interested parties are encouraged to attend the scheduled Ocular Inspection and Pre-Proposal Conference. Questions regarding the project will be addressed at this Conference. However, only those who purchased the Terms of Reference will be provided a Supplemental Bulletin containing the issues clarified during the Conference.

Only written queries from those who purchased the Terms of Reference will be entertained before and after the Conference.

D. Time and Place for Submission of Proposals

Proposals must be received at the **Records Management Office (RMO) at the CIAC Corporate Office lobby before twelve o' clock in the afternoon (12:00pm) of 17 February 2017**. Late proposals or additional documents relating to a proposal shall not be accepted once the CIAC bundy clock located in front of the RMO indicates 12:00pm.

Proposal must be addressed to:

MR. DAN A. BAUTISTA
Chairman
Selection Committee
Clark International Airport Corporation
Corporate Office Building
Clark Freeport Zone
Pampanga

E. Format

Proponents must submit their proposal in two (2) envelopes. The first envelope should contain documents 1 to 8 as listed in the Proposal Contents and the second envelope containing document 9 which refers to the CPF offer. Each envelope must contain one (1) set of the original documents required and shall be marked "A" and two (2) copies of the same documents marked as "COPY 1" and "COPY 2".

F. Proposal Contents

Proponents must submit all the information and documents requested below. Statements must be true, complete, accurate, and in the form requested. Omission, inaccuracy, misstatement, or failure to submit any or all of the items required are grounds for the rejection of the bid.

TABS	DESCRIPTION
1	Company Profile
2	List of ongoing and completed contracts
3	For corporations – Registration Certificate from the Securities and Exchange Commission (SEC) with Articles of incorporation and Bylaws For single proprietorship – Registration Certificate from the Department of Trade and Industry (DTI) For joint ventures – duly executed joint venture agreement and SEC or DTI registration of the parties
4	Business permit issued by the City/Municipality where the principal place of business is located

5	Authority of the Signatory to represent, sign the proposal and other documents; and to bind the Proponent in the selection process. Submit any of the following, as may be applicable: Notarized Corporate Secretary's Certificate, if corporation; or Notarized Authority from the partners, if partnership.
6	Audited Financial Statement for the last two (2) years showing that the proponent has net worth of not less than Ten Million Pesos (Php 10,000,000.00). This should be properly stamped received by the Bureau of Internal Revenue (BIR).
7	Certificate of good credit standing from previous parties with which proponent has entered into a contract. These should have been performed within the last three (3) years.
8	Statement of Compliance
9	Proposal Form

G. Opening of Proposals and Post-Qualification Evaluation

1. The proposals shall be opened at one o'clock in the afternoon (1:00 pm) of the date of the submission of proposals at the CIAC Board Room, in the presence of the proponents or their representatives at the time and place aforesated.
2. Only the proposals which complied with the requirements of this TOR will be opened and evaluated. Failure to submit the documents requested will disqualify the proposal. As a result of such disqualification, the second envelope will no longer be opened.
3. Proponents who will be affected by the rulings of the Committee at any stage of the bidding shall have three (3) days within which to file a motion for reconsideration. The motion should be addressed to the Selection Committee. No motion for reconsideration will be entertained after the 3-day period.
4. The appeal procedure as provided in R.A. 9184 shall be followed after the Committee denies any motion for reconsideration.

H. Notice and Execution of Award

1. Notice of Award

A Notice of Award, signed by the President and CEO of the CIAC, shall be issued after the Selection Committee has conducted its post-evaluation and qualification of the proposals submitted. The Proponent, which complied with the documentation requirements and has submitted the highest CPF offer, shall be awarded the contract.

2. Posting of Performance Security

The winning proponent must, prior to the execution of the contract, post a refundable and non-interest bearing Performance Security to guarantee the faithful performance of its obligations under this Terms of Reference and the Contract for the Supply, Installation, Operation and Maintenance of a Common User System/Terminal Equipment (CUTE) at the Clark International Airport (CRK).

The Performance Security may be in the form of cash, bank draft, irrevocable letter of credit issued by a universal or commercial bank, or non-interest bearing surety bond from the Government Service Insurance System (GSIS) equivalent to six (6) months CPF, amounting to Twenty Six Thousand Three Hundred Twenty-Three U.S. Dollars (USD 26,323.00) *(based on average monthly CPF remitted to CIAC in 2016 by the CUTE service provider)*.

3. Execution of the Contract

A Contract for the Supply, Installation, Operation and Maintenance of a Common User System/Terminal Equipment will be executed after the issuance of the Notice of Award.

4. Notice to Proceed

The Notice to Proceed will be issued to the winning proponent, together with a copy of the signed contract.

The CIAC reserves the right to review other relevant information affecting the proponent in the proposal before the approval of the contract. Should such review uncover any misinterpretation made in the proposal, or any change in the situation of the proponent, which affects the substance of the proposal, CIAC may disqualify the proponent from obtaining the project.

ANNEX A

Airlines

Airlines that operate at CRK are listed in the table below.

Airline	Name	Host
5J	Cebu Pacific Air	Navitaire
EK	Emirates	TRAVSYS
PR	Philippine Airlines	SABRE
QR	Qatar Airways	Amadeus CM
LJ	Jin Air	Amadeus CM
OZ	Asiana Airlines	Amadeus CM
KA	Cathay Dragon	Amadeus CM
TR	Tiger Air	Navitaire

ANNEX B

Quantities

	# of IWS	# of BPP	# of BTP	# of BGR	# of DCP	# of Keyboards/OCR/MSR	# of UPS
Check-in Counters	34	34	34	0	0	34	34
Boarding Gates (1-6)	12	6	6	12	6	12	12
Domestic Gates (1-3)	8	4	4	8	4	8	8
Transfer Desk	1	1	1	1	1	1	1
Core/Server Room	1					1	2
Kiosk	1	1	1			1	1
Total without spares	57	46	46	21	11	57	58
Spares	5	4	4	2	1	5	2
Total	62	50	50	23	12	62	60

ANNEX C

Proposal Form

Date: _____

To: *[name and address of Procuring Entity]*

Gentlemen and/or Ladies:

Having examined the Terms of Reference (TOR), including Supplemental Bulletin Number *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, offer a revenue share percentage (Concessionaire's Privilege Fee) of *[insert percentage in words and figures]* to carry out the supply, installation, operation and maintenance of the Common User System/Terminal Equipment at Clark International Airport.

If our proposal is accepted, we undertake to provide a performance security in the form, amounts, and within the times specified in the TOR.

Until a formal Contract is prepared and executed, this proposal, together with your written acceptance thereof and your Notice of Award, shall be binding upon us.

Dated this _____ day of _____ 20_____.

[signature]

[in the capacity of]

Duly authorized to sign for and on behalf of _____

ANNEX D

Statement of Compliance

Proponents must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered.

Item	SUPPLY, INSTALLATION, OPERATION AND MAINTENANCE OF NEW COMMON USER SYSTEM/TERMINAL EQUIPMENT AT CLARK INTERNATIONAL AIRPORT	“Comply” or “Not Comply”
1.0	General Requirements	
1.1	The common-use platform will serve as a shared passenger handling platform for multiple carriers to perform check-in and boarding operations seamlessly. The CUTE solution will enable passenger check-in desks and gate areas to be equipped with computers, boarding pass printers, and baggage tag printers, document printers and boarding gate readers that can be used by multiple airlines. Common Use Terminal Equipment system shall mean all the required components for typical CUTE operation.	
1.2	The system should allow the connection of all areas of the passenger terminal to a central server and gateways including remote kiosk installed for airport lounge. The solution should allow cost savings to be realized through the deployment of smaller scale mini core rooms at the airports where there are typically between 10 to 100 workstations.	
1.3	The bidder/contractor must submit a written proof that their company has at least 5 years experience/specialties in the supply, installation, commissioning and maintenance, and provider of the Common User System/Terminal Equipment being used to other international airport terminals.	
1.4	The role of the contractor will be to design, install and commission a complete CUTE solution for CRK. The work will include the supply of all software, hardware and materials plus the provision of all necessary integration requirements to allow these components to operate in a seamless CUTE environment.	
1.5	The scope of work shall not in any way limit the true intent of the project. It shall be the responsibility of the bidder/contractor to incorporate any works or other incidental expenses that the contractor deems necessary to satisfy the true intent of the project to the best engineering standard and practices.	

1.6	The contractor shall have full knowledge of the project, work and site condition, and have reviewed the true intent of the project and bid documents, and thus warrants the availability of the labor, works, and specialties to the system, systems, operation and maintenance of the new Common User System/Terminal Equipment at CRK.	
1.7	The bidder/contractor must be a local authorized representative of the leading Common User System/Terminal Equipment system and must have qualified and trained operation and maintenance personnel that will handle <u>24 hours, 7 days per week</u> operations of CRK.	
1.8	The Bidder/Contractor shall include a Billing System that can generate Billing reports based on Airline login/logoff in CUPPS usage such as: <ul style="list-style-type: none"> a. Capture and process daily, weekly or monthly input data from Airlines Login/Logoff usage. b. Generate CUPPS Login/Logoff usage report per Airline c. Provide Statistical reporting and analysis capabilities 	
1.9	The Bidder/Contractor shall include a Passenger Loading Report (PLR) software that can generate periodic reports on the number of passengers and obtain information for each departing flight for Billing purposes.	
1.10	The Bidder/Contractor shall include a Local Departure Control System (LDCS) fully featured system that can serve as back-up in case of failure of the host DCS or Gateway to avoid the possibility of having to fall back to a manual check-in. The DCS should fully conform to all relevant IATA standards for DCS systems and should be certified to operate on the common use platform installed at the airport.	
1.11	<p>The Bidder/Contractor shall install a Common Use Self Service (CUSS) Kiosk at the Trinoma Clark Airport Lounge.</p> <p>The kiosk shall also be connected to the CUPPS system of Clark International Airport including gateways and interfaces.</p> <p>The kiosk is designed to support current industry standards, as well as future developments, the kiosk incorporates the latest in CUSS kiosk technology</p> <p>The kiosk's modular design supports multiple peripheral configurations and allows for easy field upgrades. It's simple, uncomplicated layout makes it easy to access each component and quickly replenish paper stock. From an accessibility standpoint, the kiosk conforms to the American Disability Act (ADA) standard for barrier free design.</p>	

1.12	The system will be required to provide the environment on which each airline or handling agent can access their required Departure Control System (DCS) at the check-in counter and at the boarding gates at Clark International Airport and all known related developments.	
1.13	Full support services after complete installation of the system within the duration of the contract.	
1.14	The contractor shall perform such additional works as may be requested by the CIAC related to the Scope of Services under such terms and conditions to be mutually agreed upon by both parties.	
2.0	Scope of Services	
2.1	<p>The works include the furnishing of materials, spare parts, labor, tools, equipment, system, test instruments, apparatus and other engineering services necessary for the Supply, Installation, Operation and Maintenance of Common User System/Terminal Equipment for CRK. This includes the following:</p> <ol style="list-style-type: none"> 1. Redesign of Local Area Network for CUTE that currently exist at CRK: <ol style="list-style-type: none"> i. Reuse of existing cable facilities (e.g. Fiber, Cat 5). ii. Testing and replacement (e.g. installation of new cables if necessary or using existing spare cables) of defective existing cable facilities iii. Redesign, replacement and installation of local active network components 2. Testing and commissioning of the whole system 3. Checking and testing of completed services as required for the project 4. Manning of the <u>24 hours x 7 days per week</u> operation and maintenance of the system 5. Submittal of As Built Plan 6. The core room/space and power supply will be to the account of CIAC. Central air-conditioning will also be provided. 7. Maintenance training of personnel required under the project 8. Operators training of personnel required under the project 9. Acceptance and turnover of the completed project 	
3.0	Technical Requirements	
3.1	The CUTE solution shall provide to the operator an interface to manage their respective airline data and the individual local and	

	<p>host applications. The user interface shall be a graphical, web-based environment, and shall provide a common look and feel for all CUTE applications. Authorized users shall have the ability to select their specific applications for execution (e.g., airline terminal emulator, DCS, overhead display) via the common user menu.</p>	
3.2	<p>The CUTE system solution shall support all airlines applications regardless of the platform they are developed on i.e. legacy and IP-based host applications. Other than standard certification activities, the airline applications would not require modification to be supported on the platform.</p>	
3.3	<p>The CUTE solution shall comply with the latest revision of IATA RP 1797.</p>	
3.4	<p>All computer hardware for full and comprehensive Common Use Passenger Processing System should be all, including Intelligent Workstations (IWS), Document Printers (DCP), Boarding Gate Scanners (BGR), Baggage Tag Printer (BTP), Boarding Pass Printers (ATB), Bar Code Readers (BCR), Optical Character Recognition (OCR), Magnetic Stripe Reader (MSR) and scanner for passport reading.</p>	
3.5	<p>The system shall be designed to be accessed via a common browser-based interface from any CUTE workstations.</p>	
3.6	<p>The system must be scalable to any number of workstations and allows multiple applications (such as airline TEs) to be run on multiple airline hosts from a single workstation, thus maximizing the use of airport resources and space.</p>	
3.7	<p>The system should enable peripheral devices such as boarding pass printer (ATB) and baggage tag printer (BTP) that is deployed at a particular workstation to be accessed by multiple users. The system should also support AEA standard peripherals, and the supplier should propose devices that offer clear cost savings benefits.</p>	
3.8	<p>The system should have no restrictions to integrate with other airport systems such as FIDS, BRS, Airport Database, Gate Management System, and other systems presently deployed at the airports.</p>	
3.9	<p>The components of the CUTE platform shall be seamless integrated to provide a robust shared platform to support passenger operations at CRK.</p>	
3.10	<p>The solution shall support ability to print standard commercial off-</p>	

	the-shelf Windows printers using plain paper.	
3.11	The solution shall utilize proven and IATA compliant devices to support carrier operations	
3.12	The solution shall utilize proven software solutions to minimize problems/disruptions to airport operations and improve the overall airport experience for the passenger	
3.13	The solution shall optimize the airport real-estate and resources to allow for modular growth and flexibility.	
3.14	The solution shall leverage on opportunities for cost reduction where feasible.	
3.15	The system architecture should be based on “client-server” configuration.	
3.16	The system shall support future Common use Passenger Processing Systems (CUPPS) applications.	
3.17	The existing Core Room shall be used to house the CUPPS core server and other systems and sub systems. This room shall serve as the central location for servers, routers, gateways required for the CUPPS and other subsystems including core serve and its new power supply UPS system.	
3.18	The contractor/bidder shall provide racks and cooling units to support the equipment housed in the core server room.	
3.19	The existing LAN cabling required to support the CUPPS shall be used. The contractor are responsible for any additional cabling works, active components and configurations for the additional equipment and subsystems as well as spare units that will be required to operate the LAN facility efficiently.	
3.20	The system shall provide one or more gateways to which communications connections to each airline Host local DCS can be connected.	
3.21	If the connection between a workstation and gateway is disconnected due to malfunction, the system shall ensure that it is reconnected using alternative gateway, preferably without the need for intervention by the end user.	
3.22	The system shall provide facilities to enable new or relocated counters or gates to be added to the system. The system shall hold data associated with each gate or counter intelligent workstation.	
3.23	The system shall provide facilities for adding new software configurations to the system such as new emulators, new airline DCS, workstations and peripherals, Server and gateway upgrades.	
3.24	The system shall allow new version of application software to be attached to the network and shall provide test facilities to check	

	that all workstations and peripherals can make full use of it.	
3.25	<p>The system must be designed so that a single point of failure shall not be capable of disconnecting any of the following from the network:</p> <ul style="list-style-type: none"> • A Host or Local DCS • Network Management System • The Configuration Server 	
3.26	<p>All servers shall be duplicated to minimize the impact of failure. The effect of a failure of a single server shall be invisible to the end user.</p> <ul style="list-style-type: none"> • If the server is responsible for downloading software to workstations, a duplicate server should provide hot backup service immediately. • If the server is a gateway, and the service to the gates or counters using the gateway is interrupted, the system should re-establish connections with appropriate DCS through an alternative gateway. User should be notified of a failed connection and for security reasons, shall be required to log in again. • All failures and conditions at time of failure should be logged and recorded in a log file. 	
4.0	Security Requirements	
4.1	<p>The common user system design will be required to conform to the following SECURITY REQUIREMENTS, (Security to be provided at a minimum of three levels):</p> <ul style="list-style-type: none"> • Access to Common User System configuration function; • Access to particular emulator or airline application from work station. • Access to an airline Host Local DCS once logged in. <p>Compliance with PCDISS (Payment Card Industry Data Security Standards) https://www.pcisecuritystandards.org</p>	
4.2	Security access to the system for each workstation prior to airline application or emulator will be solely from the station control for each Local Area Network (LAN)	
4.3	Security access to emulator or airline application from a workstation will consist of a minimum of user ID and password supplied by the user.	
4.4	If the password is necessary, the password shall be accepted provided it is alphanumeric.	
4.5	Consumables – Paper consumables will be under airline’s responsibilities	
5.0	Functional Requirements	

5.1	<p>The CUTE system shall have the following features:</p> <ul style="list-style-type: none"> ▪ Allow multiple instances of Windows, DOS or Java applications to allow access to multiple airline host applications from a single workstation ▪ Provide a robust peripheral management utility which would enable airline applications access to the shared common-use devices ▪ Allow multiple carriers to use the same check-in and gate hardware for their operations ▪ Allow each airline to have individual airline login to their host application ▪ Able to support both legacy and IP-based host airline protocols ▪ Each CUTE workstation shall have the ability to support the relevant airline terminal emulators for access to the respective airlines host system ▪ Support for wireless technologies ▪ Must be able to support the incorporation of newer technologies e.g. CUSS and RFID in future ▪ The boarding pass and bag tag printers must have the ability to support common stock or airline provided stock as desired ▪ The CUTE system must be able to be remotely monitored. ▪ Supports migration path to CUPPS. ▪ Have at least one CUPPS pilot site ▪ Supports BCBP by converting AEA magnetics to and from barcode. ▪ Support Windows printing. 	
5.2	<p>CUTE system shall be able to interface to or support standard airport/airline industry applications such as:</p> <ul style="list-style-type: none"> ▪ Airline Departure Control System (DCS) ▪ Local Boarding Application ▪ Local Departure Control Systems ▪ Flight Information System (FIDS) ▪ Self-service kiosks ▪ Interfacing with downstream applications e.g. Baggage 	

	Reconciliation Systems	
5.3	<p>DCS Functions</p> <p>The CUTE system will be capable of executing the standard operational check-in and boarding tasks based on industry standards. The tasks considered shall include, but not be limited to:</p> <ul style="list-style-type: none"> ▪ Processing passenger, baggage and ticketing information; ▪ Reading OCR documents; ▪ Issuing boarding passes in 2DBC ▪ Issuing of Bag Tags; ▪ Logging for audit trails and ▪ Interfacing with downstream systems e.g. Baggage Reconciliation etc. 	
5.4	<p>2D barcode support</p> <p>The vendor must have the capability within the CUTE platform to support the conversion of Automated Ticket and Boarding Pass version 2 (ATB2) data from the airline host to Portable Data File (PDF) 417 2D barcode format and vice versa seamlessly without requiring changes to be made to the airline host application.</p> <p>This feature/product is required by CRK to enable airlines who are not 2D barcode ready to make a seamless transition without the pressure of having to enhance their legacy host applications within the stipulated IATA timeframe.</p> <p>The conversion software must be made available by the CUTE provider as part of the 2D barcode product suite. The following feature is mandatory as it will enable CRK to transition from the expensive ATB2 devices and stock to the less costly 2D barcode ready peripherals.</p> <p>The vendor must propose a solution for this 2D barcode data conversion and must have demonstrated having this product/feature in operation at a CUTE airport for at least 4 months.</p> <p>The vendor must also propose the relevant certified devices to support this requirement.</p>	
5.5	<p>Device Connectivity and Communication</p> <p>TCP/IP, USB, serial or parallel interfaces shall be accepted at the sub-component level (printers etc.). The CUTE vendor shall</p>	

	<p>propose the most cost effective system solution, regardless of sub-component device connectivity methods, so long as the entire solution has been certified for use by the proponent.</p> <p>At the TCP/IP Ethernet layer, all information shall be communicated between the server(s) and the clients via dedicated VLANs. The system shall synchronize the date and time on all devices from a designated source.</p> <p>If required, the successful CUTE system proponent shall provide in advance, a detailed network layout schematic and all connectivity requirements to CRK and the Common Network Infrastructure (CNI) contractor for inclusion into the final design. The CUTE contractor shall coordinate network requirements and all activities with the CNI contractor on an ongoing basis.</p>	
5.6	<p>Administration</p> <p>CUTE system administration shall be via a central GUI based management tool capable of remote administration of all CUTE components. Administrative properties of all CUTE devices shall include, but not be limited to:</p> <ul style="list-style-type: none"> ▪ Network parameters ▪ Operational setup parameters ▪ Runtime information ▪ Health status information 	
5.7	<p>Auditing</p> <p>The CUTE system shall provide an audit trail on a per-user and per-workstation basis. The audit trail file for each subsystem shall indicate any time-stamped changes that occurred to applications configuration, data structure, or database fields/records, and other details of the change. This information shall be stored on CUTE servers, and shall be available for remote interrogation upon proper authentication.</p>	
5.8	<p>Software</p> <p>The CUTE contractor shall install all software required for delivery of the CUTE solution. All such software shall conform, at minimum, to the following:</p> <ul style="list-style-type: none"> ▪ Commercial-off-the-shelf, 32-bit ▪ Support multithreading ▪ Support Symmetric Multi-Processing (SMP) 	

	<ul style="list-style-type: none"> ▪ Support conversion of ATB2 data to 2D bar code ▪ Have latest, at time of delivery, software patches and service packs applied ▪ Support TCP/IP network protocol ▪ Support Windows printing ▪ Built using industry-standard application development software such as Java Visual Basic, C/C++ and XML 	
5.9	<p>Barcode Transformation</p> <p>The CUTE platform must have the built in optional support for 2D barcode transformation to support IATA's Simplify the Business initiative to have all airlines be 100% 2D barcode compliant by 2010. The CUTE platform must support the conversion of airline host data to IATA compliant 2D barcode data seamless without requiring changes to be made to the airline DCS or TEs except for modification to the airline PECTABs.</p>	
5.10	<p>Windows Device Printing</p> <p>The CUTE platform must have the built in optional support for Windows print devices controlled by Windows driver. The CUTE platform must support printing using Windows print spooler.</p>	
5.11	<p>Workstation Operating System</p> <p>The CUTE contractor shall select and pre-install Microsoft Windows Operating System (incorporating all the latest updates and patches) to use across all workstations.</p>	
5.12	<p>Server Operating System</p> <p>The CUTE contractor shall select and pre-install a standardized Operating System to use across all servers. The proposal shall specify the server operating system along with any exceptions. The selected Operating System shall, at minimum, conform to the following:</p> <ul style="list-style-type: none"> ▪ Commercial-off-the-shelf, 32-bit stable production release ▪ Support multitasking and multithreading ▪ Support Symmetric Multi-Processing (SMP) ▪ Have latest, at time of hand-over to the CRK, software patches and service packs applied 	

5.13	<p>Database Software</p> <p>All database software products selected for the delivery of the CUTE system shall, at minimum, conform to the following:</p> <ul style="list-style-type: none"> ▪ Commercial-off-the-shelf, industrial grade RDB; ▪ Latest, stable version, at time of delivery, from one software vendor; ▪ Based on accepted and recognized industry standards; ▪ ODBC/SQL compliant and capable of supporting real time data warehousing; ▪ Capable of self-maintenance with configuration control. ▪ Designed such that the addition of fields and/or tables is easily accommodated 	
5.14	<p><u>Host Gateways and Interfaces</u></p> <p>Wide Area Network</p> <p>The proposal shall include interfaces to a Host DCS System and will include:</p> <ul style="list-style-type: none"> ▪ Any additional routers and leased line circuits required for cut-over ▪ Connection to Airline gateway / router equipment <p>The CUTE vendor shall coordinate with the airlines all the required steps and procedures in order to establish connectivity and communication with the carrier hosts.</p>	
5.15	<p>Equipment Specifications</p>	
5.15.1	<p><u>Core Servers</u></p> <p>1. General</p> <p>The contractor shall recommend an appropriate server configuration for the proposed solution.</p> <p>Only hardware that meets approval of the Operating System (OS) vendor shall be considered. All the hardware shall be commercial-off-the-shelf and use industry standard non-proprietary components.</p> <p>Minimum server requirements:</p>	

- All servers shall be latest and stable technology at time of delivery, from a single vendor;
- Rack mountable in a standard 19-inch rack;
- Intel or AMD based 32-bit, with 2 and 4-way SMP support for up to four (4) processors;
- The total processor performance shall be delivered such that the total processor utilization under maximum expected load shall not exceed 25%;
- Integrated 1000Mbps network adapters (as required);
- Integrated hardware RAID to allow the capacity to be increased by addition of RAID drives without system shutdown. At least one drive per array shall be in hot standby with automatic fail-over controlled by the RAID controller.
- Servers shall be individually protected by managed UPS devices.
- Rack mountable 1U high keyboard with integrated pointing device.

2. Configuration

In addition to minimum hardware requirements, the following configuration guidelines shall be observed:

The design should allow a server to be powered down and replaced without disruption to the network or applications.

The hardware design shall incorporate redundancy to ensure that there is no single point of failure.

Servers shall be “dual-homed” to the LAN core switches via server grade Gigabit Ethernet NICs.

3. Displays (Servers)

The CUTE contractor shall include 17-in flat panel, rack mountable flip-up type LCD monitor with the appropriate characteristics to meet the needs of particular applications. All monitors supplied shall be of prevailing performance characteristics at time of delivery.

The minimum performance criteria for LCD display are:

- Rack mountable 1U high, flip-up type.

	<ul style="list-style-type: none"> ▪ 1280 x 1024 non-interlaced resolution ▪ 15-in viewable area ▪ Viewing angle of 120 degrees 	
5.15.2	<p><u>Host Gateways and Interfaces</u></p> <p>1. Host Gateways</p> <p>Gateways must be proven common use gateways, running at a minimum of five airports of equal or larger size than CRK. Gateways must provide support for the legacy protocols used by the current airlines for CRK. Gateways should provide support for any airlines that are expected to be added to the CRK in the near future.</p> <p>2. Airline Host Interfaces</p> <p>CUTE must support any gateway required by workstation applications and comply with the IATA RP1797 requirements.</p>	
5.15.3	<p>Local Area Network</p> <ul style="list-style-type: none"> • Redesign of Local Area Network for CUTE that currently exist at CRK: • Reuse of existing cable facilities (e.g. Fiber, Cat 5). • Testing and replacement (e.g. installation of new cables if necessary or using existing spare cables) of defective existing cable facilities <p>1. CUTE LAN Design Criteria</p> <p>Network design shall be based on the common use network infrastructure environment that will exist at the Airport at time of CUTE deployment. The CUTE system shall be Ethernet TCP/IP based at the server and workstation levels. The systems shall adhere to a Client-Server or Peer-Peer (where allowed) networking models. The end devices shall be the clients to the primary/secondary servers. All end device addressing shall be coordinated with each airline.</p>	
5.15.4	<p>Intelligent Workstations to be installed at the following:</p> <p>Check-in counter – 34 sets</p>	

- Boarding Gates (Int'l) – 12 sets
- Boarding Gates (Domestic) – 8 sets
- Transfer Desk – 1 set
- Core/Server Room – 1 set
- Spare units/sets – 5 sets

1. Workstations

All workstation hardware for systems specified in this document shall meet or exceed requirements outlined in this section.

Only hardware that meets approval of the Operating System (OS) vendor shall be considered. The systems shall use industry standard non-proprietary components. At minimum, all workstations shall contain the following:

- All workstations shall be latest and stable technology at time of delivery, from a single vendor;
- Intel or AMD 32-bit processor.
- The total processor performance shall be delivered such that the total processor utilization under nominal maximum expected load shall not exceed 25%;
 - 4 GB RAM
 - Integrated 10/100 Mbps Ethernet NIC
 - CD-R/DVD ROM
 - 1 serial ports, 1 parallel port, and 4 USB v2.0 ports (all in back of chassis)
 - keyboard

2. Displays (Workstations)

The CUTE contractor shall include 21-in flat panel LCD monitor with the appropriate characteristics to meet the needs of particular applications. All monitors supplied shall be of prevailing performance characteristics at time of delivery.

The minimum performance criteria for a LCD display are:

- 1280 x 1024 non-interlaced resolution
- 21-in viewable area

Viewing angle of 120 degrees

5.15.5	<p>Keyboard/Magnetic Stripe Reader (MSR) / Optical Character Reader (OCR) to be installed at the following:</p> <p>Check-in Counter – 34units Boarding Gates(Int'l) – 12 units Boarding Gates(Domestic) – 8 units Transfer Desk – 1 set Spare units/sets – 5 units</p> <p>1. Magnetic Stripe Reader Magnetic Stripe Readers shall meet or exceed the following criteria:</p> <ul style="list-style-type: none"> ▪ Capable of reading data in accordance to ISO 7811/2 & 6 ▪ Capable of reading 3 and 4 track magnetic stripes ▪ Capable of (but not limited to) accepting: <ul style="list-style-type: none"> Credit Cards Frequent Flyer Cards Employee Travel Cards <p>2. Optical Character Reader</p> <ul style="list-style-type: none"> ▪ Optical Character Readers shall meet or exceed the following criteria: ▪ Capable of reading OCR A according to ISO 1073/1 ▪ Capable of reading CCR B according to ISO 1073/2 ▪ Capable of roller feeding documents at optimum speed ▪ Capable of (but not limited to) reading: <ul style="list-style-type: none"> Machine Readable Document (MRD) i.e. Passports and Visas <ul style="list-style-type: none"> ▪ ID Cards ▪ ATB Tickets ▪ TAT Tickets 	
5.15.6	<p>Boarding Pass Printer (BPP) to be installed at the following:</p> <p>Check-in counter – 34 sets Boarding Gates(Int'l) – 6 sets Boarding Gate(Domestic) – 4 sets Transfer Desk – 1 set Spare units/sets – 5 sets</p>	

	<p>1. Boarding Pass Printer (BPP)</p> <p>BPP printers shall meet or exceed the following criteria:</p> <p>Compliance with IATA resolutions 722(as appropriate) RP 1723</p> <ul style="list-style-type: none"> ▪ AEA 99 (latest standards) ▪ Single ATB coupon or wallet feed ▪ Direct Thermal Printing ▪ Extended graphics capability for logos and bar codes 	
5.15.7	<p>Baggage Tag Printer to be installed at the following:</p> <p>Check-in counter – 34 sets Transfer Desk – 1 set Boarding Gates (Int'l) – 6 sets Boarding Gate (Domestic) – 4 sets Spare units/sets – 5 sets</p> <p>1. Bag Tag Printers (BTP)</p> <p>Bag Tag Printers shall meet or exceed the following requirements:</p> <ul style="list-style-type: none"> ▪ Compliance with IATA requirements ▪ Direct thermal Printing ▪ Extended Graphics including IATA smooth fonts and True Type ▪ Scalable font technology ▪ Support Bar codes 128, 39, 2 of 5, Int 2 of 5 and 2-D ▪ Handle both fan-fold and roll paper stock ▪ Capable of handling different tag lengths <p>Ability to have add-on feature for RFID chips in bag-tag stock.</p>	
5.15.8	<p>Boarding Gate 2D Reader to be installed at the following:</p> <p>Boarding Gates(Int'l) – 12 units Boarding Gates (Domestic) – 8 units Spare units/sets – 2 units</p> <p>1. Barcode Reader (BCR)</p> <p>Bar Code Readers shall meet or exceed the following</p>	

	<p>requirements:</p> <ul style="list-style-type: none"> ▪ Compliant with IATA Resolutions; ▪ Ability to read bar codes 128, 39, 2 of 5, Int 2 of 5, 2D PDF417; ▪ Scan rate should be at least 35/second. 	
5.15.9	<p>Document printer to be installed at the following:</p> <p>Boarding Gates (Int'l) – 6 units Boarding Gates(Domestic) – 4 units Core/Server – 0 - unit Spare units/sets – 1unit</p> <p>1. Document Printer (DCP)</p> <p>Document printers shall meet or exceed the following criteria:</p> <ul style="list-style-type: none"> ▪ Printers using dot-matrix technology ▪ 20 pages per minute (PPM) 	
5.15.10	<p>Airport Lounge Kiosk: 1 set at Trinoma Clark Airport Lounge</p> <p>The kiosk provides the following standard features:</p> <ul style="list-style-type: none"> • PC • UPS • 17 inch LCD with SAW technology touchscreen • Card reader • Full-page passport reader with RFID function & OCR data capture • Barcode reader • Wide format boarding pass printer (GPP) • Front and rear access doors with door-open sensors • Remote power management module • Bagtag printer • Wireless device <ul style="list-style-type: none"> • Pedestal with stability base plate • Service keyboard • Standard LAN connections • 60 Hz or 230VAC 50 Hz <p>The contractor shall submit the proposed enclosure for the kiosk.</p>	

5.15.11	<p>Uninterrupted Power Supply to be installed at the following:</p> <p>Check-in counter – 34 sets Boarding Gates (Int'l) – 12 sets Boarding Gates(Domestic) – 8 sets Airport Lounge – 1 set Transfer Desk – 1 set Core/Server Room – 2 sets Spare units/sets – 2 sets</p> <p>1. Uninterrupted Power Supply (UPS)</p> <p>Uninterrupted Power Supply shall meet or exceed the following criteria:</p> <ul style="list-style-type: none"> ▪ Output Power Capacity of 720Watts/1200VA ▪ Typical Backup Time at Half Load of 10 minutes (360watts) ▪ Typical Backup Time at Full Load of 4 minutes (720watts) ▪ Nominal Output Voltage of 230V ▪ Nominal Input Voltage of 230V ▪ Input Frequency of 50/60Hz +/- 3 Hz 	
5.16	<p>Training</p> <p>The supplier will provide training to the airport personnel in the use of the system.</p> <p>The supplier will provide training sessions (Training of Trainers) in English. This training shall be conducted on-site at the airport.</p> <p>In "Train the Trainer" format, provide at least two (2) four (4) hours sessions for representatives nominated by each airline and ground handler which shall include hands-on training.</p> <p>The supplier will provide training to the CIAC Technicians in the use and maintenance of the system.</p>	
5.17	<p>Warranty must cover all supplied workmanship, hardware in core room and network equipment supplied by supplier and software for the entire period of the contract.</p>	
5.18	<p>References and Standards</p> <p>The CUTE system shall be developed and implemented for CRK, based on the industry standards, principles and practices including but not limited to the following:</p> <ul style="list-style-type: none"> ▪ AEA Technical Spec "Parametric ATB Data Concept" 	

	<p>(PECTAB 99) (March 2001)</p> <ul style="list-style-type: none"> ▪ IATA - Passenger Services Conference Resolutions Manual - Resolution 722c “Automated Ticket/Boarding Pass (ATB) and Multiple Purpose Document (MPD) Coupon-by-Coupon Technical Specification” 21st Edition ▪ IATA - Passenger Services Conference Resolutions Manual - Resolution 722d “Off Premise Automated Ticket/Boarding Pass Version 2 (OFATB2)” 21st Edition ▪ IATA - Passenger Services Conference Resolutions Manual - Resolution 722e “Automated Ticket/Boarding Pass (ATB) and Multiple Purpose Document (MPD) Coupon-by-Coupon Technical Specification” 21st Edition ▪ IATA - Passenger Services Conference Resolutions Manual - Recommended Practice 1797 “Common Use Terminal Equipment (CUTE) Systems” 21st Edition ▪ ISO 1073-1:1976 – “Alphanumeric character sets for optical recognition -- Part 1: Character set OCR-A -- Shapes and dimensions of the printed image” (March 30 2001) ▪ ISO 1073-2:1976 – “Alphanumeric character sets for optical recognition -- Part 2: Character set OCR-B -- Shapes and dimensions of the printed image” (March 29 1999) ▪ ISO/IEC 7811-2:2001 – “Identification cards -- Recording technique -- Part 2: Magnetic stripe -Low coercivity” (February 1 2001) ▪ ISO/IEC 7811-6:2001 – “Identification cards -- Recording technique -- Part 6: Magnetic stripe -High coercivity” (February 1 2001) ▪ FCC -Part 15 “Radio Frequency Devices – Class A – Digital Devices” (December 18 2001) <p>Specific to network communications, the CUTE system shall follow standards specified below and applicable derivatives, as agreeable with network communication technologies in place at time of CUTE deployment:</p> <ul style="list-style-type: none"> ▪ IEEE 802.3 Ethernet ▪ IEEE 802.11b/g Wireless LAN ▪ IEEE 802.3af Power over Ethernet 	
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