

# ***ANNEX II + III* : TECHNICAL SPECIFICATIONS + TECHNICAL OFFER**

**Contract title : ICT Development Programme - Supply of Equipment**

**Publication reference : EuropeAid/127217/D/SUP/DM**

**Column 1-2 should be completed by the Contracting Authority**

**Column 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the Contractor's technical offer

The tenderers are requested to complete the template on the next pages:

- Column 2 is completed by the Contracting Authority shows the required specifications (not to be modified by the tenderer),
- Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words “compliant” or “yes” are not sufficient)
- Column 4 allows the tenderer to make comments on his proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offered specifications.

1. Item Number	2. Specifications	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
1	<p><b>Computers (Desktops &amp; Laptops)</b></p> <p><b>Qty: four hundred and fifty hundred (450)</b></p> <p><b>Desktops PCs - or comparable products</b>  Dual Core (2x2.0 Ghz, 1 Mb, 800FSB), or better  Minimum 2GB DDR2 Memory or better  160GGB hard drive  DVD + - RW  'Qwerty' Keyboard, Mouse</p> <p>Intel @ Motherboard or comparable motherboard (BTX form factor)  Graphics Media Accelerator  17" LCD Monitor or better</p> <p>Windows Vista Business Volume Licence installed  3.5" FDD drive</p> <p>3 years warranty on parts and labour</p> <p><b>Qty: fifteen (15)</b></p> <p><b>Lap Tops</b></p> <p>15.4" Notebook DVDRW</p> <p>Core 2 Duo (2x 2.00 GHz, 800 MHz, 2Mb) or comparable processor</p> <p>2 GB DDR2 Memory</p> <p>80gb SATA Hard Disk Drive</p> <p>Wireless Card (8021.11a,b/g)</p> <p>OEM WINDOWS VISTA BUSINESS INSTALLED (volume licence)</p> <p><b>Qty: fifteen (15) Laptop cases</b></p>			

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2	<p><b>Printers – Network Lasers</b></p> <p><b>Qty: twenty-two (22)</b></p> <p><b>Network Printers</b></p> <p>Print speed, black (best quality mode): min 19ppm  Print technology: Laser  Print quality, black; min 1200 x 1200 dpi  Digital display – yes  Minimum paper trays, std.; 1 input tray  Input capacity: Min 260 sheets  Standard envelope capacity: min 15 envelopes  Output capacity, std.: min 150 sheets  Duplex printing (printing on both sides of paper) – yes  Paper handling, input (standard) – minimum 10-sheet priority feed slot,  250-sheet input tray  Paper handling, output (standard) – minimum 150-sheet face-down bin  Letter, legal, executive, postcards, envelopes  Media sizes, std: No.10, Monarch  Media sizes, custom: 3 x 5 to 8.5 x 14 in</p> <p>Media types: Paper (laser, plain, photo, rough, vellum), envelopes, labels,  cardstock, transparencies, postcards</p> <p>Interfaces: Ethernet and USB  Input voltage 11/220 V</p>			

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3	<p><b>Computer software:</b></p> <p><b>Qty: twelve hundred and fifty (1250)</b></p> <p><b>Software for classroom networks management of PCs</b>  CrossTec SchoolVue Licences or comparable product</p> <p>Thumbnail view monitor mode  Wireless support  Student application control  Ability for teachers to control student screen and access  Instant survey and test creation and marking  Student register  Keyboard Logger  Monitoring group chat of students</p> <p>Record and Replay of all activities on student PC  Anotation capabilites  File Transfer and Distribution capabilities  Lecturer ability Launch applications and websites on student PCs  Lecturer ability to display video to selected student/s  Lecturer ability to copy tutor module to external drive  Ability to power on/off student workstation over LAN and remotely log them on and off</p> <p>Lecturer ability to monitor student use of PC as it relates to curriculum task and browse through student pc to check running applications remotely  Web control module that allows lecturer to control all student web activities remotely  Printer control capabilities  USB and CD Drive control capabilities  Lesson Planning and Scheduling capabilities  Whiteboard Interactivity capabilities  Lecture ability to assist students by controlling their PC remotely  Student ability to request help via private message to lecturer  Ability to capture students screen and save as a file  Messenger monitoring system  Ability for lecture to assign group leader(teachers right to a student) to assist other students</p> <p>Minimum system requirements:  Win 98, Win ME, Win 2000, 2003,Win XP &amp; Windows Vista.  Compatible 6 Microsoft Office 2007 licences</p> <p>(Training and installation support required on site)</p>			

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4	<p><b>Servers</b></p> <p><b>Quantity: seventeen (17)</b>  <u>Education Servers</u>  3 years manufacturer's warranty (on-site)  Intel ® Xeon Quad 2.00GHz/1333MHz/8Mb or better  4GB (2x1GB) Fully buffered Memory or better  Raid Card 0/1/5/10 capable  Minimum 3 x 147GB SAS 15k HDD  Minimum 3 x 2.5" Hot Swap bays  Tape Backup  Tower Chassis  Black PS2 Keyboard  Black Optical PS2 Mouse  DVD RW Drive  17" LCD Monitor  Redundant power supplies</p> <p><b>Quantity: two (2)</b>  <u>Management Servers</u>  Quad-Core Xeon 2.93 GHz or better  Type: Server  Form Factor: Rack-mountable - 4U  Localization: English  Server Scalability: 4-way  Processor: 2 x Intel Quad-Core Xeon 2.93 GHz ( Quad-Core ) or better  RAM: 16 GB (installed) - 667 MHz - PC2-5300 or better  Storage Controller: Serial Attached SCSI ( Serial Attached SCSI )  ( LSISAS1078 ) or similar  Server Storage Bays: Hot-swap 2.5"  Hard Drive: 3 X 146 GB or better  Optical Storage: CD-RW / DVD-ROM combo  Monitor: 19" LCD.  Graphics Controller: 16 MB  Networking: Network adapter - Ethernet, Fast Ethernet, Gigabit Ethernet - Ethernet Ports:  2 x Gigabit Ethernet  Power: AC 120/230 V (50/60 Hz)  Power Redundancy: Yes  Manufacturer Warranty: 3 years warranty (on-site )</p> <p>Operating system: Windows Server 2003</p> <p>Back up recording software</p> <p>Security: Multi-lock Security features</p> <p>Manufacturer Warranty: 3 years warranty (on-site )</p>			

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	<p>Operating system: Windows Server 2003            Back up recording software            Security: Multi lock security features            Manufacturers warranty: 3 years warranty (on site)</p> <p><b>Qty: three (3) Application/Email Servers</b></p> <p>Two 64-bit 1.65 GHz POWER5+ processor cores or better            3.8MB L2 and 72MB L3 cache per QCM            Minimum 16GB of DDR2 SDRAM</p> <p>Five PCI-X adapter slots (4 – 133 MHz; 1 – 266 MHz (DDR))            Four standard and four optional hot-swappable SCSI disk bays</p> <p>Ten 73GB Disk drives</p> <p>Maximum I/O drawers add an additional 54 PCI-X slots and 96 disk bays (28.8TB)</p> <p>Dual channel Ultra320 SCSI controller (internal; RAID optional)            Dual ported Ethernet 10/100/1000 Mbps controller            4 Gigabit Fibre Channel,</p> <p>Two USB, two HMC, two system ports            One DVD Burner            Monitor: 19 inch LCD            Manufacturer Warranty: 3 years warranty (on-site )            Server Racks ( Must be able to meet Management server and application server requirements)</p>			

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12	<p><b>Qty: forty (40)</b>  <b>Digital Projectors</b>  <i>Device Type:</i> DLP Projector  <i>Built-in devices:</i> Speaker  <i>Image brightness: Minimum</i> 2000 ANSI lumens  <i>Image Contrast Ratio:</i> 2000:01:00  <i>Resolution:</i> 800 x 600  <i>Native Aspect Ratio:</i> 4:03  <i>Lens Shift Direction:</i> Vertical  <i>Bulb Life Cycle:</i>2500 hours(s)/3000 hour(s) (economic mode)</p> <p><i>Video input:</i> RGB, S-Video, composite video (NTSC, SECAM, PAL, PAL-N, PAL-M, NTSC 4.43, NTSC 3.58)  <i>Digital Television Video Formats: minimum</i> 720p, 1080i,1035i  <i>Audio Output:</i> Speaker(s) – integrated  <i>Sound Output Mode:</i> Mono 2 Watt  <i>Input Device:</i> Remote Control  <i>Power:</i> AC 120/230V (50/60 Hz)</p> <p><u>Projector mounts</u></p> <p><b>Projector Mounts – Qty: sixteen (16) Ceiling Mounts</b></p> <p>Universal mounts:  Minimum 3ft extension and flexible joints at both ends, capable of being locked in different positions</p> <p><b>Projector Mounts – Qty: sixteen (16) wall mounts</b></p> <p>Universal mounts:  Minimum 3ft extension and flexible joints at least projector end, capable of being locked in different positions</p> <p><b>(Mounts must meet the requirements of projectors in this lot)</b></p> <p><b>Qty: Twenty-five (25)</b>  15 – 20 ft extended projector cords</p>			

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6	<p><b>Interactive &amp; Non-interactive Whiteboards</b></p> <p><b>Qty: one (1) Interactive Whiteboard</b>  Interactive Whiteboard with touch-sensitive, dry-erase, low-glare, stain-resistant Teflon surface and interactive projection capabilities. Unit to be equipped with cables, software, pens, erasers, mounting hardware and accessories for a complete installation.  Wall mountable 78" Width minimum  Four-, eight- and 16-point projection alignment process.  2. On-board icon strip for easy set-up and operation.  3. Compatible with Windows® 98, NT, 2000, ME, and XP, Vista; and Macintosh X.  4. Resolution of 8000 x 8000 points across whiteboard surface.  5. File Export Formats: Microsoft Windows® JPEG (.jpg), bitmap (.bmp), TIFF (.tif), metafile (.wmf), HTML (.htm), and PDF (.pdf); Macintosh® JPEG (.jpg), bitmap (.bmp), PDF (.pdf), PICT (.pct), TIFF (.tif), MacPaint, Photoshop (.psd), PNG (.png), and QuickTime Image.  6. Information can be saved from the board to a personal computer for printing, e-mail, fax, or uploading to the Web. Transfer images via drag &amp; drop, clipboard or file export.  7. Captures the projected image and any handwriting on top of and next to the projected image simultaneously.  8. Anti-aliased markup including highlighters. Termination tools for connectors specified above and fault finder, ends  9. Real-time playback of strokes. Input Voltage 220V (<b>Installation on location required</b>)</p> <p><b>Qty: sixteen (16) Non-interactive Whiteboards</b>  Portable Projector Screen with Both Video (4:3 Aspect Ratio) and HDTV (16:9 Aspect Ratio) formats  65" width minimum, on tripod stands</p>			

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7	<p><b>Networking equipment – Switches, fibre optic tools, cable, patch panels</b></p> <p><b>Qty: Ten (10)</b></p> <p><b>24 port switch 10/100/1000mb switch</b></p> <p><b>Network Protocol and Standards Compatibility</b>  IEEE 802.3 10BASE-T Ethernet  IEEE 802.3u 100BASE-TX Fast Ethernet  IEEE 802.3ab 1000BASE-T Gigabit Ethernet  IEEE 802.3x full-duplex flow control</p> <p><b>Interfaces</b>  24 RJ-45 connectors for 10BASE-T, 100BASE-TX, and 1000BASE-T (Auto Uplink on all ports)  2 RJ45 Gigabit ports</p> <p><b>Administrative Switch Management</b>  IEEE 802.1D Spanning Tree Protocol  Private Enterprise MIB  Jumbo Frame Support (Minimum 9216 bytes)  IEEE 802.1Q Tag VLAN (Minimum 64 Static VLAN groups)  Port-based VLAN (minimum 24 groups)  IEEE 802.1p (Class of Service)  Diffserv Port-based QoS (options Normal)High/  Port Trunking - Manual as per IEEE802.3ad Link Aggregation  DHCP client function  Port mirroring (many to one)  Port setting  Web-based configuration, anywhere on the network  Smartwizard Discovery Utility program auto discovers devices (Minimum 254 agents/switches); set system configuration to each agent  Configuration Backup/Restore (easy to configure more than one switch)  Password access control and Restricted IP Access List  Firmware upgradeable</p> <p><b>Active Flow Control</b>  Full-duplex IEEE 802.3x pause frame flow control  Half-duplex back-pressure control</p> <p><b>Performance Specifications</b>  Forwarding modes : Store-and-forward  Bandwidth: Minimum 48 Gbps; Network latency: Less than 20 µs for 64-byte frames in store-and-forward mode for 100 Mbps to 100 Mbps transmission;  Buffer memory: Minimum 256 KB embedded memory per unit  Priority queues: 4, Priority queueing: weighted round robin (WRR)  Address database size: Minimum 8,000  Media access control (MAC) addresses per system  Addressing: Minimum 48-bit MAC address,  Warranty: 5 years  Input voltage: 110/220V input voltage</p> <p><b>Qty: Six (6)</b></p> <p><b>16 port switch 10/100mb switch</b></p> <p><b>Standards Compliance</b>  IEEE 802.3 10BASE-T Ethernet  IEEE 802.3u 100BASE-TX Fast Ethernet  IEEE 802.3x full-duplex flow control</p> <p><b>Interfaces</b>  16 RJ-45 connectors for 10BASE-T, 100BASE-TX, and 1000BASE-T (Auto Uplink on all ports)  2 RJ45 Gigabit ports</p>			

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	<p><b>Performance Specifications</b></p> <p>Forwarding modes : Store-and-forward  Bandwidth: Minimum 3.2 Gbps or better  Network latency: Less than 20 μs for 64-byte frames in store-and-forward mode for 100 Mbps to 100 Mbps transmission  Buffer memory: Minimum 512 KB, Address database size: Minimum 8,000  Addressing: Minimum 48-bit MAC address, input power 110/240V  <b>Warranty: 3 years warranty</b></p> <p><b>Qty: Ten (10)</b>  <b>24 port 10/100 w/ 2 fibre port</b></p> <p>Layer 2 Services  IEEE 802.1Q static VLAN (512), IEEE 802.1p Class of Service (CoS)  IEEE 802.1D Spanning Tree Protocol, IEEE 802.1v protocol VLAN &amp; port VLAN  IEEE 802.1 QinQ, IEEE 802.1w Rapid Spanning Tree  IEEE 802.1s Multiple Spanning Tree, IEEE 802.3ad Link Aggregation (LACP)  IEEE 802.1x port access authentication, IGMP v1, v2 snooping support  Network storm protection including broadcast, multicast and unicast traffic  Static multicast filtering, Weighted round robin (WRR) query technology</p> <p><b>INTERFACES</b></p> <p>24 RJ-45 connectors for 10BASE-T, 100BASE-TX, and 1000BASE-T (Auto Uplink on all ports), 2 SFP slots for fiber Gigabit Ethernet modules</p> <p><b>Switch Management Specifications</b></p> <p>SNMP v1, v2c, v3 with multiple IP addresses, UDP relay UDP relay, Private Enterprise MIB, Port mirroring support (many-to-one), IGMP querier, DHCP/BOOTP relay primary and backup (RFC3046, option 82), SYSLOG SYSLOG, Firmware upgrade via TFTP or HTTP</p> <p><b>Performance Specifications</b></p> <p>Forwarding modes: Store-and-forward Forwarding modes  Bandwidth: Switch latency: Minimum 20 μs for 64-byte frames (1G to 1G),  System memory: Minimum 64 MB, Packet buffer memory: Minimum 122 KB embedded memory per port  Code storage (flash): Minimum 8 MB, minimum trunks: 6, minimum queues: 8  Jumbo frame support: Minimum up to 9K packet size</p> <p>User Interfaces  Command Line Interface (CLI) via console port (4 sessions), Web-based management via embedded HTTP server protected with Secure Sockets Layer, (SSLv3) or Transport Layer Security (TLSv1), Telnet remote login (5 sessions) securable with Secure Shell (SSH v1.5, v2)</p> <p><b>Network Standards Compatibility</b></p> <p>IEEE 802.3i 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T, IEEE 802.3z 1000BASE-X, IEEE 802.3x flow control</p> <p><b>Physical Specifications: 19" rack mountable</b></p> <p><b>Modules</b></p> <p><b>Warranty: 3 years warranty</b></p> <p><b>Fibre Modules and cables</b></p> <p><b>Fibre Optic cable</b>  Multimode fibre 1000 Base SX – three hundred (300) meters  1000 Base SX SFP Transceiver modules (LC Connectors) - twenty-two (22)  Fibre Trays 8 ports – eight (8)  (2 meters) Fibre patch cable w/ LC Connectors – twelve (12)</p> <p><b>24 Port patch panel – Qty: twenty (20)</b></p> <p><b>16 port patch panel – Qty: ten (10)</b></p> <p><b>Qty: One (1)</b>  <b>Fiber optic tool kit (Must include but not limited to:</b> Termination tools for connectors specified above and fault finder, Ends</p>			

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8

**Routers & Wireless Access Points**

**Qty: two (2) Hardware firewall & Router**

Wireless

Standards: IEEE, 802.11g, 54 Mbps, Super G  
Technology up to 108 Mbps  
Antenna: (2) 5dBi, detachable

Physical interfaces

LAN ports: Eight (8) 10/100Mbps autosensing,  
Auto Uplink™ RJ-45 ports  
WAN port: 10/100BASE-T Ethernet RJ-45  
ADSL WAN Port: One (1) RJ-11 supporting annex A of Annex B (Region  
Specific)

Networking standards

IEEE 802.3i 10Base-T Ethernet  
IEEE 802.3u 100Base-TX Fast Ethernet  
IEEE 802.3ab Gigabit Ethernet

Security

SPI firewall: Stateful packet inspection (SPI) Intrusion Detection System (IDS) including logging, reporting and email alerts, address, service and protocol, Web URL keyword filtering, port/ service blocking. Advanced features include block Java/URL/ActiveX based on extension, FTP/SMTP/RPC program filtering  
VPN Functionality: Fifty (50) dedicated VPN tunnels, Manual Key and Internet Key Exchange Security Association (IKE SA) assignment with pre-shared key and RSA/DSA signatures, key life and IKE lifetime settings, perfect forward secrecy (Diffie-Hellman groups 1 and 2 and Oakley support), operating modes (Main, Aggressive, Quick), fully qualified domain name (FQDN) support for dynamic IP address VPN connections  
IPSec Support:IPSec- based 56-bit (DES), 168-bit (3DES), or 256-bit (AES) encryption algorithm, MD5 or SHA-1 hashing algorithm, AH/AH-ESP support, PKI features with X.509 v.3 certificate support, remote access VPN (client-to-site), site-to-site VPN, IPSec NAT traversal (VPN pass-through)  
Mode of operation: one-to-one/ many-to-one multi-network address translation (NAT), classical routing, unrestricted users per port  
IP address assignment: Static IP address assignment, DHCP replay, DHCP address reservation  
Wireless Security: Wi-Fi Protected Access 2 Enterprise (WPA2), 802.1x

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	<p><u>Performance features:</u> Throughput: Minimum Up to 50 Mbps WAN-to-LAN, up to 20 Mbps for 3DES throughput</p> <p><u>Management features:</u> Administration interface: SNMP (v2c) support, Web graphic user interface, Secure Sockets Layer (SSL) remote management, user name and password protected; Secure Remote Management support authenticated through IP address or IP address range and password; configuration changes/ upgrades through web GUI</p> <p>Configuration and upgrades: Upload and download configuration settings, firmware upgradeable flash memory</p> <p>Secure HTTPS remote management support: Authenticated through IP address or IP range and password</p> <p><u>Functions:</u> VPN Wizard to simplify configuration of the VPN, port range forwarding, port triggering, exposed host (DMZ), enable/disable WAN ping, DNS proxy, MAC address cloning/spoofing, Network Time Protocol support, keyword content filtering, email alerts, DHCP server (info and display table), WAN DHCP client, diagnostic tools (ping, trace route, other), port/service/MAC address blocking</p> <p><u>Protocol Support:</u> Network: IP routing, TCP/IP, UDP, ICMP, PPPoE; IP Addressing: DHCP (client and server); Routing: Static, RIPv1, RIPv2; VPN/Security: IPSec (ESP, AH), MD5, SHA-1, DES, 3DES, IKE, PKI, AES</p> <p><u>User Support:</u> LAN: up to 253 users; WLAN: up to 20 users</p> <p><u>Hardware:</u> Processor: Minimum 266 Mhz 32-bit RISC; ADSL Processor: T.I. AR7; Memory: minimum 8 MB flash, 32MB SDRAM; Power requirements: 100-240V AC, 50-60Hz; Power supply Input voltage 220V; 3 years warranty</p> <p><b>Qty: sixteen (16) Wireless Access Points</b></p> <p><b>Physical Specifications</b> Processor and memory: 8 MB Flash, 16 MB DRAM</p> <p><b>Wireless</b> Standards: IEEE 802.11b/g 54 Mbps Antennas: Minimum Two (2) 5 dBi detachable Maximum power output: approx 19.8 dBm Maximum receive sensitivity: approx 96 dB</p> <p><b>Physical interfaces</b> LAN Port: One (1) 10/100BASE-T Ethernet (RJ-45) port with Auto Uplink™ (Auto MDI-X) With IEEE 802.3af Power over Ethernet (PoE) support Power adapter: input voltage 220V LEDs: Power, Test, 100 Mbps, Link/ACT., and WLAN 802.11g Console port: One (1) with standard RS-232C interface with DB-9 male connector Antenna Connectors: Two (2) reverse SMA</p> <p><b>Network Management</b> Remote configuration and management through Web browser, SNMP or Telnet with command line interface (CLI) SNMP management supports SNMP MIB I, MIB II, and 802.11 MIB VLAN capabilities</p> <p><b>Advanced Wireless Features</b> Bridging and repeater mode Simultaneous wireless bridge and access point mode Adjustable transmit power control 100mW down to 0mW Wi-Fi Multimedia (WMM™) to optimise audio, video, and voice applications</p> <p><b>Receive sensitivity</b> Up to approximately 92dBm</p> <p><b>Security</b> Wi-Fi Protected Access 2 (WPA2) and 802.11i-ready</p>			

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	<p>Block SSID Broadcast            VPN pass-through support            Mac address filtering with access control lists – up to 256 users            802.1x RADIUS support with EAP TLS TTLS, PEAP            Secure SSH Telnet            Secure Socket Layer (SSL) remote management login</p> <p><b>Wireless External Antennas</b>  <b>Qty: sixteen (16) Wireless Directional Antennas</b>            Description            Outdoor mountable            14 dBi Patch Panel Directional Antenna with reverse N female jack and reverse N to reverse SMA adapter</p> <p>Capabilities            Indoor/outdoor long range point-to-point connections            Maximum outdoor Range<sup>1</sup>            Minimum 15.8 km (~ 9.8 miles)</p> <p>Frequency range            Minimum 2.400 ~ 2.485 MHz</p> <p>Gain<sup>2</sup>14 dBi</p> <p>Beam Width: Minimum Horizontal 60°            Vertical 30 °</p> <p><b>Qty: ten (10)</b>  <b>5-meters length antenna cable</b></p> <p><b>Qty: ten (10)</b>  <b>10-meters length antenna cable</b></p>			
9	<p><b>Qty: one (1) Mobile Laptop Lab</b></p> <p>30 Laptop Storage &amp; Charging Trolley            30 Notebooks            15.4" Notebook Chassis w/ DVDRW            OEM WINDOWS VISTA BUSINESS INSTALLED (volume licence)            Core 2 Duo (2x 2.00GHz, 800MHz, 2Mb) or better            2GB DDR2 Memory            80gb SATA Hard Disk Drive            Wireless Card (802.11a,b/g)            WIFI Access Point (included)</p>			

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10	<p><b>Universal power supplies and Power Strips</b></p> <p><b>Qty: seventeen (17)</b>  <b>UPS Units for Servers 1</b></p> <p><b>OutPut</b>  Output Power Capacity -Minimum (<b>Must match needs of Education servers Nominal Output Voltage – 220 V being offered in LOT:4</b>)  Output Voltage Distortion - Max than 5% at full load Output Frequency (sync to mains) – 50hz  Crest Factor: up to 5:1  Waveform Type: Stepped approximation to a sinewave Nominal Input Voltage – 220 V  Input Frequency – 50 Hz <b>Battery and Runtime</b> Battery Type Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof Typical Backup Time at full load approx mins LED status display with On Line : On Battery : Replace Battery and Ove rload indicators Audible Alarm: Yes</p> <p><b>Communications &amp; Management</b>  Control panel30</p> <p><b>Surge Protection and Filtering</b>  Dataline protection  RJ-45 Modem/Fax/DSL/10-100 Base-T protection</p> <p><b>UPS part 2</b>  Output Power Capacity -Minimum (<b>Must match needs of Management servers being offered in LOT:4</b>)  Tower package  Protect against all nine of the most common power problems, including outages, sags, surges, spikes, brownouts, line noise, frequency variation, switching transients, and harmonic distortion.  USB Manageable  220V IEC 62040-1-1, IEC 60950, EN 62040-1-1, UL 1778, NOM-0190SCP8-1993 Safety Certifications  EN 50091-2 Class A Compliant Standards  Input frequency 50 Hz  Output Frequency 50 Hz  Run time of least 30 minutes at full load  At least 0.9 output power factor High Efficiency Low Input current distortion Hot Sync Technology Utilizes Advance Battery Management  Power Management Software  Graphical LCD user interface  SNMP capability  Remote monitoring  Real time performance indicators  2 years warranty</p> <p><b>Qty: fifty (50)</b>  <b>Power extension cords</b>  230V 6-Socket Power extension cords</p>			