

**RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY**  
RAJAGIRI VALLEY P.O.  
KOCHI – 682039

Ref:

Date: 13/04/12

**Notice inviting quotation for Network Engineering Lab Equipments**

Competitive quotations are invited for the supply of equipments for Networking Lab. The quotation along with specifications, warranty period, taxes etc. should reach the undersigned on or before 25th April 2012. The list of equipments with specification is given below.

Principal  
Rajagiri School of Engineering & Technology, Kochi

## Technical Specification of Computing Terminals in PG Lab

### ITEM :- 1

**Device : Personal Computers – Type 1**

**No. of Systems Required : 10nos**

S.No.	Feature	Device	Remarks
1	Processor	<b>Intel® 2nd Generation Core™ i3, i5, i7 Processors</b> Intel Core i3-2100, i3-2120 Processor	Support for the latest Intel® 2nd Generation Core™ processors
2	Chipset	Intel Q65 Express Chipset	Intel latest chipset support 2nd generation core I Processors
3	Motherboard	OEM Motherboard	
4	Memory	4GB Non-ECC dual-channel 1066/ 1333 MHz DDR3 SDRAM, Memory Expandable to 16GB DDR3-1333Mhz	
5	Hard Disk Drive & controller	500GB SATA 3.0-( 6Gb/s Hard Drive ( 7200 RPM, NCQ, Smart IV) (Provision of Total of 2*Internal hard drive support); Support for 10k RPM Hard Drive.	SATA 6.0-Gb/s supports with SMART IV HDD which can help in prefailure alerts for the HDD, making service an ease and wide HDD capacity for always growing needs.
6	Optical Drive	SATA SuperMulti DVD Writer Lightscribe Drive	
7	Graphics	Intel HD Graphics (integrated) Discrete graphic support	
8	Audio	Integrated High Definition audio with Realtek ALC261 codec (all ports are stereo) with Internal Speaker	
9	Ethernet	Integrated Gigabit (10/100/1000 NIC) LAN (Support WOL / PXE & ASF 2.0)	

10	Slots	(1) <b>Full Height</b> PCI slot (2) Full Height PCIe x1 slots, (1) Full Height PCIe x16	
11	Bays	(2) 3.5-inch internal drive bay supporting hard disk drive (1) 3.5" external bay for optional Media Card Reader, pocket media drive, or Secondary HDD (2) 5.25" external bay for optional optical drive, or other 5.25" device	
12	Ports	<b>Rear I/O:</b> (6) USB 2.0, (1) standard serial port, (1) optional serial port (1) optional parallel port, (2) PS/2, (1) RJ-45, (1) VGA, audio in/out , (1) DisplayPort <b>Front I/O:</b> (4) USB 2.0, headphone and microphone, Dual color Diagnostic LEDs	Default support for integrated dual monitor support.
13	Form Factor	<b>Micro Tower</b>	
14	Power Supply	320-watt standard efficiency power supply, Active Power Factor Correction (PFC) Optional: 90% efficient energy saving power supply Energy Star 5.0 & EPEAT GOLD Certified	
15	Keyboard	PS/2 104 keys keyboard (Same make as PC)	
16	Mouse	PS/2 2 Button Scroll Mouse (Same make as PC)	

**ITEM: - 2****Device : Personal Computers – Type 2****No. of Systems Required : 10nos**

S.No.	Feature	Device	Remarks
1	Processor	<b>Intel® 2nd Generation Core™ i3, i5, i7 Processors</b> <b>Intel Core i5-2400, i5-2500 Processor</b>	Support for the latest Intel® 2nd Generation Core™ processors
2	Chipset	Intel Q65 Express Chipset	Intel latest chipset support 2nd generation core I Processors
3	Motherboard	OEM Motherboard	
4	Memory	4GB Non-ECC dual-channel 1066/ 1333 MHz DDR3 SDRAM, Memory Expandable to 16GB DDR3-1333Mhz	
5	Hard Disk Drive & controller	500GB SATA 3.0-( 6Gb/s Hard Drive ( 7200 RPM, NCQ, Smart IV) (Provision of Total of 2*Internal hard drive support); Support for 10k RPM Hard Drive.	SATA 6.0-Gb/s supports with SMART IV HDD which can help in prefailure alerts for the HDD, making service an ease and wide HDD capacity for always growing needs.
6	Optical Drive	SATA SuperMulti DVD Writer Lightscribe Drive	
7	Graphics	Intel HD Graphics (integrated) Discrete graphic support	
8	Audio	Integrated High Definition audio with Realtek ALC261 codec (all ports are stereo) with Internal Speaker	
9	Ethernet	Integrated Gigabit (10/100/1000 NIC) LAN (Support WOL / PXE & ASF 2.0)	
10	Wifi PCI Cards	WLAN Standard - IEEE 802.11b/g, Wi-Fi compliant Host Interface - PCI Express Frequency Range - 2.4 GHz ISM radio band Number of Channels 802.11b:, 802.11g: Receive Sensitivity - 802.11b: typical -80dBm at 11Mbps	

		802.11g: typical -71dBm at 54Mbps Data Rates - 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps Security - WEP 64-bit and 128-bit encryption WPA(Wi-Fi Protected Access) Operating System - Windows XP/server 2003/64bit XP/Ubuntu/Debian/Fedora	
11	Slots	(1) <b>Full Height</b> PCI slot (2) Full Height PCIe x1 slots, (1) Full Height PCIe x16	
12	Bays	(2) 3.5-inch internal drive bay supporting hard disk drive (1) 3.5" external bay for optional Media Card Reader, pocket media drive, or Secondary HDD (2) 5.25" external bay for optional optical drive, or other 5.25" device	
13	Ports	<b>Rear I/O:</b> (6) USB 2.0, (1) standard serial port, (1) optional serial port (1) optional parallel port, (2) PS/2, (1) RJ-45, (1) VGA, audio in/out , (1) DisplayPort <b>Front I/O:</b> (4) USB 2.0, headphone and microphone, Dual color Diagnostic LEDs	Default support for integrated dual monitor support.
14	Form Factor	<b>Micro Tower</b>	
15	Power Supply	320-watt standard efficiency power supply, Active Power Factor Correction (PFC) Optional: 90% efficient energy saving power supply Energy Star 5.0 & EPEAT GOLD Certified	
16	Keyboard	PS/2 104 keys keyboard (Same make as PC)	
17	Mouse	PS/2 2 Button Scroll Mouse (Same make as PC)	

**ITEM :- 3****Device : Thin Client Machines****No. of Systems Required: 5nos**

<b>Sr. No.</b>	<b>Parameter</b>	<b>Minimum specification required</b>
1	Flash Memory	Self-powered 2GB Flash
2	Main Memory	1 GB DDR 3 800 Mhz DDR3 667 Mhz SODIMM, 64 MB reserved for Graphics. Additional free Memory Slot
3	Secondary storage	Option to have internal storage through USB in a secured compartment
4	Processor	Intel Atom N280* processor, with Intel GL40 chipset
5	Peripherals	(a) PS/2 or USB Optical mouse (b) 104 Keys PS/2 or USB Keyboard (c) option for VESA mounting support for the thin client to mount the thin client behind TFT, Under the desk or on the wall.
5	Network Interface	10/100 / 1000 Mbps Ethernet (auto sensing) NIC, RJ45 connector.
	Graphics	Intel GL40 graphics with support for two high-resolution monitors up to 2048 x 1536, or up to 32 bit color depth
6	Ports/Slots	(a) 2 serial port, 1 parallel port ,PCIe x4/PCI expansion module (b) 2 PS/2, 4 External USB ( 2 in front and 2 in back), 2 Internal USB ports in secured compartment

		(d) 1/8 inch 16 bit, stereo audio output +8 bit mini mike input with internal speaker
		(e) VGA & Display Port
7	Security	Option to SELECTIVELY enable / disable external & secured USB ports.
8	Display	Max Resolution 1920 x 1200, 32 Bit
9	OS Support	Windows® Embedded Standard 2009
10	Emulation/Protocol support	Citrix ICA 12.0 and Microsoft RDP 7.0 Microsoft Internet Explorer 8.0 Windows Media Player 12 Symantec Endpoint Protection Agent Remote Management Agent Builtin tool to capture TC image and redeploy using a USB pendrive. TeemTalk Terminal Emulation Suite 7.0 VMware View Manager 4.5, Citrix Desktop delivery controller enabled through web browser
11	Network	(a) TCP/IP with DNS and DHCP wake on LAN (b) DHCP support for automatic firmware upgrades & unit configuration. (c) PPP (PPPOE, PPPTP)
12	Power supply	00-240 VAC, 50-60 Hz energy-saving automatic power-down, surge-tolerant, ENERGY STAR® 2.0 qualified 65-watt power supply supplying 19VDC, Must be external to avoid internal heating

13	Regulatory Standards	IEC60950-1, TUV, CE, FCC-B, VCCI, STQC/UL/RoHS certified for effective power consumption and reduction in hazardous substances.EPEAT Certified
14	Monitor	18.5-inch Wide-Aspect Active Matrix TFT, Viewable Image Area (diagonal) 18.5 inches widescreen; diagonally measured

**ITEM : - 4**

**Device : Workstation**

**No. of Systems Required: 2nos**

<b>Sl. No.</b>	<b>Features</b>	<b>Qualifying Minimum Requirements</b>
1	Processor	2 X Intel Xeon Processor W3503 2.40 GHz, 4MB cache, 1066 memory, 4.8GT/s QPI, Dual-Core  <b>CPU should be Liquid-cooled.</b>
2	Chipset	Intel® X58 Chipset
3	RAM	8 GB (6 x 1GB) DDR3 ECC Memory  System should support upto 24 GB of DDR3 ECC memory with total 6 memory slots.
4	Drive Controllers	Integrated 6 channel SATA 3Gb/s controller, RAID 0, 1, 5, 10 capable  At least 2 SATA ports should be eSATA capable, and optional eSATA connector kit should be available.
5	HDD	<b>500GB SATA 7200 RPM Drive</b>  <b>System should support upto 4 internal SATA/SAS OR SFF SAS/SATA drives.</b>  Optional additional SAS controller should provide Hot-spare drive capability  <b>Enterprise class SATA SLC Solid State Drives should be available as an option.</b>
6	Removable Media	No Floppy Drive.  Option for removable boot drive.

7	Optical Drive	DVD+/-RW Double Layer SuperMulti (SATA) <b>with LightScribe Direct Disc Labeling in Windows and Linux.</b>
8	Graphics Card	NVIDIA 600 1 GB GC  Graphics card should be supplied integrated with the system and system manufacturer should provide ISV certified Graphics drivers for all operating systems supported.
9	GPU Computing	<b>System should support optional Nvidia Tesla C2050 card.</b>
10	Monitor	<b>22" Wide screen Professional TFT monitors. Specifications of monitors attached in next sheet.</b>
11	Keyboard	Minimum 104 keys with additional shortcut keys. Interface - USB
12	Mouse	USB Optical 2 button scroll mouse
13	Audio	High-definition integrated Realtek ALC262 Audio with <b>jack retasking and autosensing capability.</b>  Internal speaker.
14	Communications	<b>Integrated Broadcom 5764 LAN with Infineon TPM 1.2 Controller – 10g support</b>  <b>Additional Network controller with support for DASH OOB management features.</b>
15	Bays/Slot	3 external 5.25-inch bays, 2 internal 3.5-inch HDD bays (4 max with converter)  2 PCI Express Gen2 x16 1 PCI Express Gen2 x8 mechanical/x4 electrical 1 PCI Express Gen1 x8 mechanical/x4 electrical 2 PCI  All slots should be placed on the motherboard itself, without any raiser card.

16	Ports	<p>Front: 2 USB 2.0, 1 microphone in, 1 headphone out</p> <p>Rear: 6 USB 2.0, 1 audio in, 1 audio out, 1 microphone in, 2 PS/2, 1 RJ-45 to integrated Gigabit LAN</p> <p><b>Internal: 4 USB 2.0</b></p> <p><b>(Rear Audio ports should be re-taskable)</b></p> <p><b>Vendor should provide with an optional internal USB dongle mounting kit.</b></p>
17	Operating System	<p>Genuine Windows 7® 32-bit and Debian OS pre-loaded.</p> <p>All drivers required for proper integration of components should be supplied by the vendor. All latest drivers should be available to download from vendor's website.</p> <p><b>Vendor to supply an optional Linux Installer Kit with drivers and automatic installation and X configuration utility. System should be certified for running SuSe Linux.</b></p>
18	Form Factor with Tool free design	<p>Minitower with tool-less entry and maintenance.</p> <p>Screw-less disk mounting with Acoustic dampening rails and tool free PCI card installation features.</p> <p><b>System should feature Active Acoustic Reduction, with noise level below 5 Bels. Memory and CPU should have separate fans for cooling.</b></p>
19	Power Supply	<p>475 WATTS Continuous Power Supply :</p> <ul style="list-style-type: none"> <li>- Full ranging input and APFC</li> <li>- Surge tolerance upto 2000V</li> <li>- <b>85% efficient</b></li> <li>- <b>EPEAT Gold certification for the system model.</b></li> </ul>

20	Certification	<p>The system should be certified for software products from by leading ISV.</p> <p>At least one certification required from Autodesk, PTC, SIEMENS PLM, Avid and Dassault Systems.</p> <p>Vendor should supply certified graphics driver for major CAD/CAM/CAE and other leading commercial workstation applications.</p>
21	Security and BIOS Features	<p><b>System should be supplied with a BIOS controllable Internal Electro-mechanical Lock and Hood sensor with password protection.</b></p> <p>Support Kensington Lock support Serial / USB enable and disable options.</p> <p>Should support Memory Change Alert, Thermal Alert, System / Emergency ROM Flash Recovery with Video and Removable Device and Boot control</p> <p>Should support Drive Lock feature for selected SATA drives from system BIOS.</p> <p><b>System should be enabled for using 1W of power in S5 state in compliance to EU directive 2005/32/EC.</b></p> <p>System should allow control of parameters of each IO slot on motherboard.</p>

22	Additional Software	<p><b>1. The hardware vendor should supply an automatic system performance tuning software, which ensures optimum performance tuning for leading ISV applications on Windows.</b></p> <p><b>2. System Software Manager should be available free of cost.</b></p> <p><b>3. A complete Offline Diagnostics and Asset Discovery software suite should be supplied along with the system.</b></p> <p><b>4. Software for monitoring GPU usage under Windows should be provided.</b></p>
23	Warranty	3 years onsite parts and labour warranty for system and monitor
24	Vendor Status	The hardware vendor should be a reputed concern, having global presence in multiple countries. Vendor should have ISO certifications.
25	Industry Standards	<p>System should be fully compliant with industry standards.</p> <p>System and all internal components should be RoHS compliant.</p> <p><b>System model should be EPEAT Gold certified for selected configurations.</b></p>
26	Rack Mounting	<b>System should support optional Depth Adjustable Sliding Rail Rack Mounting.</b>

**ITEM: - 5**

<b>Sl. No</b>	<b>Device</b>	<b>No. of Devices</b>	<b>Specifications</b>
1	Router	1	cisco router 2600/Cisco Base Level router with configuration equivalent or better than Cisco 2600

**ITEM: - 6**

<b>Sl. No</b>	<b>Device</b>	<b>No. of Devices</b>	<b>Specifications</b>
1	24 port - Rackmount Gigabit Switch w/ WebView	2	<p>24-Port 10/100/1000 Gigabit Switch with WebView. Standards IEEE 802.3, 802.3u, 802.3ab, 802.3x, 802.1p, 802.1q. Ports 24 10/100/1000 RJ-45 ports and 2 shared MiniGBIC slots. Cabling Type Cat5e or better. LEDs System, Link/Activity, Gigabit. Security Features ACL, 802.1x.</p> <p>24 autosensing 10/100/1000 full duplex, auto MDI/MDI-X ports. Two mini GBIC expansion ports for fiber expansion. WebView remote monitoring and configuration via web browser. 64 VLANs, 8 port trunking groups, console port, 802.1p CoS support.</p>
2	8 – port fibre channel switch	1	Support for 10g Ethernet and 8gbps fibre channel support
3	Fibre to Ethernet Convertor	1	1000Base-T to 1000Base-X Fiber Media Converters
4	Wireless Access Point	2	Cisco Small Business AP500 Series/Netgear
5	Switch Rack	1no	Medium sized for keeping Switches and Routers (Trolley type)

**ITEM: - 7**

<b>Sl. No</b>	<b>Device</b>	<b>No. of Devices</b>	<b>Specifications</b>
1	CACE- AirPcap - 802.11 a/b/g/n Wireless LAN Packet Capture	1	
2	CACE- TurboCap2 - Gigabit Ethernet Packet Capture	1	
3	CACE – Pilot Software	1	Tool for network performance and protocol analysis

**ITEM: - 8**

<b>Sl. No</b>	<b>Device</b>	<b>No. of Devices</b>	<b>Specifications</b>
1	Mica Motes and data acquisition boards	10	868/916 MHz multi-channel transceiver with extended range Supported by MoteWorks™ wireless sensor network platform for reliable, ad-hoc mesh networking

**ITEM: - 9**

<b>Sl. No</b>	<b>Device</b>	<b>No. of Devices</b>	<b>Specifications</b>
1	10/100/1000 LAN Tester	1	
2	Cabling		Cabling to support Maximum bandwidth upto 10gbps
3	Fibre Cables		Small bundle for Study Purpose
4	RJ 45 Connectors		A bundle for study purpose
5	Crimping Tool	5nos	
6	Tool Kit for Cabling	5 nos	
7	Fibre Optics Connectors and Terminators		A bundle for Study Purpose