BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NOTEBOOK — GENERAL

SPECIFICATION NO - NB01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF NOTEBOOKS	**380**	
2	MAKE OFFERED		
3	MODEL OFFERED		
4	PROCESSOR	Intel Core 2 Duo processor, 1.83 GHz or higher, 667 MHz FSB or above	
5	L2 CACHE	2 MB or higher	
6	CHIPSET	Intel 945 GM or higher Intel Chipset	
7	MEMORY	1 X 1 GB 667 MHz DDR2 SDRAM expandable to 4 GB	
8	HDD	80GB SATA - 5400 RPM or higher	
9	OPTICAL DRIVE	Integrated 24x or more DVD-CDRW Combo	
10	DESIGN	2 Spindle only	
11	SCREEN	15" XGA or higher color TFT display	
12	KEYS	Full size keys	
13	TOUCH PAD	TouchPad / Trackpoint	
14	MOUSE	USB based External 2/3 button Optical Mouse	
15	AUDIO	Integrated High Definition audio with integrated speakers and volume control	
16	MODEM	Integrated 56K with RJ 11 port	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NOTEBOOK – GENERAL

SPECIFICATION NO - NB01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
17	ETHERNET	Integrated 10/100 Mbps port or higher	
18	WIRELESS	Integrated 802.11a/b/g Wireless LAN and Blue tooth enabled	
19	PORTS	Minimum 2 USB (Ver 2.0), VGA, S-Video, blue tooth enabled, Speaker, Microphone	
20	Smart card Reader	As per specifications in SCR NB01-02L	
21	PCMCIA SLOTS	Minimum 1 No. of Type II / Type III PCMCIA	
22	Smart Card Reader (PCMCIA or USB Based with necessary softwares)	Should support Type II slot. Compatibility - Windows XP Professional, plug-n-play, hot plugging, suspend, resume, hibernation - all other features as per the attached smart card reader specification / feature	
23	BATTERY LIFE	Minimum 6 Cell Lithium Ion with 4.5 hours or more backup in standard business environment, ACPI Compliant, Hibernation	
24	Preloaded Management Software	Should come with preloaded client of management software having following features: 1. Remote software deployment 2. Remote patch deployment/management 3. Asset Tracking, Inventory Management (Software & Hardware) 4. Data and settings Migration tool	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NOTEBOOK – GENERAL

SPECIFICATION NO - NB01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
25	SOFTWARE	Windows XP Pro with SP2 or latest service pack, Restore / Recovery CD & with OS media CD with each PC (in absence of OS Media CD OEM pack of OS to be supplied), a sofware to provide data recovery to restore user data, settings, applications and Operating System in the event of a software crash or virus infection. The latest system drivers should be available on OEM's website for the entire lease period.	
26	CARRY BAG	Carry Bag From OEM	
27	WEIGHT	Specify max weight in KG (Not more than 2.8 KG)	
28	CERTIFICATION	OS Certification from Microsoft Site (WLP 2.0) Certificate to be enclosed.	
		ERTL / FCC / EMC class B Certificate to be enclosed.	
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	
29	ADD ON FEATURES	Spill Proof Keyboard	
		Hard disk Protection System	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NOTEBOOK – LIGHTWEIGHT

SPECIFICATION NO - NB02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF NOTEBOOKS	**1**	
2	MAKE OFFERED		
3	MODEL OFFERED		
4	PROCESSOR	Intel Core Duo processor, 1.20 GHz or higher, 533 MHz FSB or above	
5	L2 CACHE	2 MB or higher	
6	CHIPSET	Intel 945GM / 945GMS Chipset	
7	MEMORY	1 X 512 MB 533 MHz DDR2 expandable upto 1 GB or more	
8	HDD	60 GB ATA / PATA - 4200 RPM or higher	
9	OPTICAL DRIVE	USB based external 24x or more external DVD-CDRW Combo	
10	DESIGN	1 Spindle only	
11	SCREEN	12" WXGA or higher color TFT display	
12	KEYS	Full size keys	
13	TOUCH PAD	Touchpad / Trackpoint	
14	MOUSE	USB based External 2/3 button Optical Mouse	
15	AUDIO	Integrated High definition audio with integrated speakers and volume control	
16	MODEM	Integrated 56K with RJ 11 port	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NOTEBOOK – LIGHTWEIGHT

SPECIFICATION NO - NB02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
17	ETHERNET	Integrated 10/100 Mbps port	
18	WIRELESS	Integrated 802.11a/b/g Wireless LAN and Blue tooth enabled	
19	PORTS	Minimum 2 USB (Ver 2.0), VGA, blue tooth enabled, Speaker, Microphone	
20	Smart card Reader	As per specifications in SCR NB01-02L	
21	PCMCIA SLOTS	Minimum 1 No. of Type I / Type II PCMCIA	
22	BATTERY LIFE	Minimum 6 Cell Lithium Ion with 4.5 hours or more backup in standard business environment, ACPI Compliant, Hibernation	
23	Preloaded Management Software	Should come with preloaded client of management software having following features: 1. Remote software deployment 2. Remote patch deployment/management 3. Asset Tracking, Inventory Management (Software & Hardware) 4. Data and settings Migration tool	
24	SOFTWARE	Windows XP Pro with SP2 or latest service pack, Restore / Recovery CD & with OS media CD with each PC (in absence of OS Media CD OEM pack of OS to be supplied), a sofware to provide data recovery to restore user data, settings, applications and Operating System in the event of a software crash or virus infection. The latest system drivers should be available on OEM's website for the entire lease period.	
25	CARRY BAG	Carry Bag From OEM	
26	WEIGHT	Specify max weight in KG (Not more than 1.5 KG excluding Optical drive)	

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NOTEBOOK – LIGHTWEIGHT

SPECIFICATION NO - NB02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
27	CERTIFICATION	OS Certification from Microsoft Site (WLP 2.0) Certificate to be enclosed.	
		ERTL / FCC / EMC class B Certificate to be enclosed.	
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	
28	ADD ON FEATURES	Spill Proof Keyboard	
		Hard disk Protection System	

Place (Signature of Bidder)

SCR NB01-02L   **Specification for Smart Card Reader for NoteBooks**

			Vendors Compliance (YES / NO)
1.0	**SMART CARD**	Should support all ISO Smart Cards	
		Interface should read from and write to all ISO 7816-1, 2, 3, 4, memory and microprocessor smart card (T=0, T=1)	
		Standard API support	
		Power	
		- from USB	
		- short circuit detection to protect smart card and reader	
		- automatic card insertion / removal detection	
		- support for 3V / 5V cards	
		Card insertioin rating / cycle	
		Communication	
		- from card - Programmable (in bauds)	
		- from computer (in bauds)	
		Interface mode : USB communicateion through USB port	
		Operating system support - MS Windows XP Professional	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR PC - GENERAL WITH TFT MONITOR

SPECIFICATION NO — PC01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF PCs	**3549**	
2	MAKE OFFERED		
3	MODEL OFFERED		
4	Processor	Intel Core2 Duo 2.13 GHz, 2 MB L2 Cache, 1066 MHz FSB	
5	Motherboard	OEM's own motherboard or Intel Original (Management agent should show the revision level)	
6	Chipset	Intel Q965 Express or higher Intel Chipset	
7	RAM	2 x 512 MB dual channel DDR2 SDRAM @ 667 MHz or above expandable to 4 GB	
8	HDD	80 GB SATA **SMART II/III** 7200 rpm with **Pre Failure Alert**	
9	Optical Drive	48x CDRW/DVD ROM (Combo, OEM make)	
10	Monitor (Asset Controlled)	17" TFT Monitor (Same make as PC)	
11	Graphics	Integrated Intel Graphics Media Accelerator 3000 with Dynamic Video Memory Technology.	
12	Keyboard	Minimum 104 keys (Same make as PC)	
13	Mouse	2/3 Button Optical Scroll Mouse	
14	Audio	Integrated Intel® High Definition Audio, AC'97/20-bit audio with internal speakers	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR PC - GENERAL WITH TFT MONITOR

SPECIFICATION NO – PC01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	Ethernet	Integrated (on-board)10/100/1000Mbps RJ45 port with WOL, PXE & ASF (Alert Standard Format) 2.0 OS independent software to monitor & analyse network connection	
16	PCI Slots	Minimum 2 (PCI & PCI-E) slots	
17	Ports	Minimum 1 Serial, 6 USB (Ver 2.0), VGA, Speaker, Microphone, Headphone	
18	Smart card Reader	As per specifications in SCR PC01-02L	
19	Software	Windows XP Pro with SP2 or latest service pack, with Restore / Recovery CD & with OS media CD with each PC (in absence of OS Media CD OEM pack of OS to be supplied), a sofware to provide data recovery to restore user data, settings, applications and Operating System.	
20	Form Factor	Mini Micro ATX	
21	Power Supply	Vendor shall specify power rating	
22	Diagnostic Tool / Software	OEM's Diagnostic tool for hardware diagnostics	
23	Preloaded Management Software	Should come with preloaded client of management software having following features: 1. Remote software deployment 2. Remote patch deployment/management 3. Asset Tracking, Inventory Management (Software & Hardware) 4. Data and settings Migration tool	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR PC - GENERAL WITH TFT MONITOR

SPECIFICATION NO – PC01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
24	Security	Removable media boot control, Serial, Parallel & USB Interface Control, Power-On Password, Setup Password, should give alert on management console and desktop on tampering the system. Trusted Platform Module TPM 1.2 Security Chip Integrated	
25	Certification	For OEM : ISO 9001:2000 (CERTIFICATE TO BE ENCLOSED)	
		ERTL / FCC / EMC class B Certificate to be enclosed.	
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	
		CERTIFIED FOR MS Windows XP (CERTIFICATE TO BE ENCLOSED)	
26	Chassis	Tool Less chassis	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR THIN CLIENT - WITH TFT MONITOR

SPECIFICATION NO — PC02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF THIN CLIENTS	**400**	
2	MAKE OFFERED		
3	MODEL OFFERED		
4	Processor	True X86 1 GHz or higher	
5	Firmware Features	MS Internet Explorer 6.0, HTML, JAVA JSP support , Javascirpt, XML, Active X, Sun JRE, Media Player, Citrix Web client	
6	Browser	MS IE 6.0	
7	RAM	1GB Flash, 1GB DDR	
8	Monitor (Asset Controlled)	17" TFT Monitor (Same make as Thin Client)	
9	Keyboard	Minimum 104 keys (Same make as Thin Client)	
10	Mouse	2/3 Button Optical Scroll Mouse	
11	Audio	Output 1/8 inch mini, full 16 –bit stereo, 48 Khz sample rate	
12	Ethernet	Integrated (on-board)10/100 Mbps RJ45 port	
13	PCI Slots	Minimum 1 PCI slot	
14	Ports	Minimum 1 Serial, 1 Parallel, 4 USB (Ver 2.0), VGA	
15	Smart card Reader	As per specification in SCR PC01-02L	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR THIN CLIENT - WITH TFT MONITOR

SPECIFICATION NO — PC02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	Software	Windows XP / Windows CE	
17	Form Factor	Small Footprint with Fanless Design	
18	Power Supply	External Power Adapter with Cable	
19	Preloaded Management Software	Remote Management Agent	
20	Protocols	RDP, ICA, Wyse Wy-60, WY-50, WY-50+, IBM TN3270e, TN5250, TN3151, DEC VT 420, ADS A2; Hazeltine 1500; Tandem 6530 ; and SCO Console resident ,Terminal Emulations	
21	Additional	Citrix metaframe Compatible	

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SCR PC01-02L   **Specification for Smart Card Reader for PCs**

			Vendors Compliance (YES / NO)
1.0	SMART CARD	Should support all ISO Smart Cards	
		Interface should read from and write to all ISO 7816-1, 2, 3, 4, memory and microprocessor smart card (T=0, T=1)	
		Standard API support	
		Power	
		- from USB	
		- short circuit detection to protect smart card and reader	
		- automatic card insertion / removal detection	
		- support for 3V / 5V cards	
		Card insertioin rating / cycle	
		Communication	
		- from card - Programmable (in bauds)	
		- from computer (in bauds)	
		Interface mode : USB communicateion through USB port	
		Operating system support - MS Windows XP Professional	

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CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR GRAPHIC WORKSTATION - P4
TO BE FILLED BY BIDDER

SPECIFICATION NO - WS01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF WORKSTATIONS -P4	**47**	
2	MAKE OFFERED		
3	MODEL OFFERED		
4	Processor	Intel Core2 Duo Processor 2.40 GHz, 4 MB L2 Cache, 1066 MHz FSB with Virtualization Technology support	
5	Chipset	Intel 975X or higher Chipset	
6	RAM	2 x 1GB dual channel DDR2 ECC @667 MHz expandable to 8 GB with 4 DIMMs	
7	HDD	160 GB (unformatted), 7200 rpm SATA drive with Integrated SATA Controller	
8	Optical Drive	8x or higher DVD-CDRW Combo Drive	
9	Graphics Card	nVidia Quadro FX550 / FX560 with 128 MB RAM or higher	
10	Monitor	19" TFT (OEM make) with min. resolution of 1280*1024	
11	Keyboard	Minimum 104 keys with additional shortcut keys	
12	Mouse	2/3 Button Optical Scroll Mouse	
13	Audio	Integrated Audio with Internal speakers	
14	Ethernet	Integrated 10/100/1000 Mbps RJ45 port with WOL	

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CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR GRAPHIC WORKSTATION - P4
TO BE FILLED BY BIDDER

SPECIFICATION NO - WS01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	Bays/Slots	Min. 4 (PCI, PCI Express / PCI Express x16) Slots	
16	Ports	Minimum 1 Parallel, 1 Serial, 4 USB (Ver 2.0), VGA, Speaker, Microphone, Headphone	
17	Software	Pre installed Windows XP Professional 64 bit with Restore / Recovery CD/disk & with OS media CD. Should have option to install Red Hat Linux WS3.0 also	
18	Compilers	FORTRAN 77, C & C++ Compilers with manuals to be provided	
19	Power Supply	Vendor shall specify power rating of WS	
20	Diagnostic Tool / Software	OEM's Diagnostic tool for hardware diagnostics	
21	Preloaded Management Software	Should come with preloaded client of management software having following features: 1. Remote software deployment 2. Remote patch deployment/management 3. Asset Tracking, Inventory Management (Software & Hardware) 4. Data and settings Migration tool	
22	Security	Removable media boot control, Serial, Parallel & USB Interface Control, Power-On Password, Setup Password, should give alert on management console and desktop on tampering the system.	
23	CERTIFICATIONS	For OEM : ISO 9001:2000 (Certificate to be enclosed)	
		ERTL / FCC / EMC class B Certificate to be enclosed.	

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CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR GRAPHIC WORKSTATION - P4
TO BE FILLED BY BIDDER

SPECIFICATION NO - WS01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	
		Certified for MS Windows XP (Certificate to be enclosed)	
		Certified for UGS products (Certificate to be enclosed)	
		Certified for autodesk products (Certificate to be enclosed)	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR HIGH GRAPHIC WORKSTATION – XEON

SPECIFICATION NO - WS02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF WORKSTATIONS -XEON	**71**	
2	MAKE OFFERED		
3	MODEL OFFERED		
4	Processor	Quad Core Intel Xeon 2.66 GHz with 8 MB L2 Cache, 1333 MHz FSB	
5	Chipset	Intel 5000X or higher Intel Chipset	
6	RAM	4 x 1GB dual channel DDR2 FBDIMMs @667 MHz , expandable upto 32GB	
7	HDD	2 x 73 GB SAS HDD 15K rpm with SAS RAID Controller	
8	Optical Drive	8x or higher DVD-CDRW Combo Drive	
9	Graphics Card	Nvidia Quadro FX 3500 with min. 256 MB RAM	
10	Monitor	19" TFT (OEM make) with min. resolution of 1280*1024	
11	Keyboard	Minimum 104 keys with additional shortcut keys	
12	Mouse	2/3 Button Optical Scroll Mouse	
13	Audio	Integrated Audio with Internal speakers	
14	Ethernet	Integrated 10/100/1000 Mbps RJ45 port with WOL	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR HIGH GRAPHIC WORKSTATION – XEON

SPECIFICATION NO - WS02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	Bays/Slots	Minimum 5 bays, 3 (PCI / PCI Express / PCI Express x16) Slots	
16	Ports	Minimum 1 Parallel, 1 Serial, 4 USB (Ver 2.0), VGA, Speaker, Microphone, Headphone	
17	Software	Pre installed Windows XP Professional 64 bit with Restore / Recovery CD/disk & with OS media CD. Should have option to install Red Hat Linux WS3.0 also	
18	Compilers	FORTRAN 77, C & C++ Compilers with manuals	
19	Power Supply	Vendor may specify power consumption	
20	Diagnostic Tool / Software	OEM's Diagnostic tool for hardware diagnostics	
21	Preloaded Management Software	Should come with preloaded client of management software having following features: 1. Remote software deployment 2. Remote patch deployment/management 3. Asset Tracking, Inventory Management (Software & Hardware) 4. Data and settings Migration tool	
22	Security	Removable media boot control, Serial, Parallel & USB Interface Control, Power-On Password, Setup Password, should give alert on management console and desktop on tampering the system.	
23	CERTIFICATIONS	For OEM : ISO 9001:2000 (Certificate to be enclosed)	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR HIGH GRAPHIC WORKSTATION – XEON

SPECIFICATION NO - WS02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
		ERTL / FCC / EMC class B Certificate to be enclosed.	
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	
		Certified for MS Windows XP (Certificate to be enclosed)	
		Certified for UGS products (Certificate to be enclosed)	
		Certified for autodesk products (Certificate to be enclosed)	

Place   (Signature of Bidder)

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Specification for Smart Card Reader for Workstations

		Vendors Compliance (YES / NO)
1	Should support all ISO 7816 Smart Cards	
2	Interface should read from and write to all ISO 7816-1, 2, 3, 4, memory and microprocessor smart card (T=0, T=1)	
3	Standard API support	
4	Power	
	- from USB	
	- short circuit detection to protect smart card and reader	
	- automatic card insertion / removal detection	
	- support for 3V and 5V cards	
5	Card insertioin rating / cycle - Please specify	
6	Communication	
	- from card - Programmable - Pl. specify in bauds	
	- from computer - pl specify in bauds	
7	Interface mode USB communicateion through USB port	
8	Operating system support - MS Windows XP Professional	

Note : SMART CARD READER SHALL BE USB BASED

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASERJET PRINTER - A4 MONO

SPECIFICATION NO - LJ01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Printers	**363**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print Speed	30 ppm (A4, normal) or higher	
6	Network Ready	Should be LAN Ready	
7	RAM	64 MB or higher (OEM original)	
8	Paper Trays	2	
9	Duplex printing	Auto duplex ready	
10	Media Size	A4, A5, letter, executive, legal	
11	Print Resolution	1200x1200 dpi or better	
12	Connectivity	USB, Fast Ethernet 10/100	
13	Print Management Software	Should come with management software for remotely installing, configuring, and managing network printer using standard Web browser.	
14	OS Compatibility	Windows 2000, Windows XP,Windows Server 2003, Unix	
15	Print Language	PCL5e,PCL6,PostScript 3	
16	Duty Cycle	100000 Pages or Higher per Month	
17	Compliance	Energy Star	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASER PRINTER - A4 COLOR

SPECIFICATION NO - LJ02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. Of Printers	**23**	
2	Make Offered		
3	Model offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print Speed(Mono)	30 ppm(A4, normal) Or higher	
6	Print Speed(Color)	30 ppm(A4, normal) Or higher	
7	Memory	256 MB (OEM Original)	
8	Paper Trays	2	
9	Duplex Printing	Auto duplex ready	
10	Network Support	LAN ready	
11	Media Size	A4, letter, executive	
12	Connectivity	Usb 2.0, Fast Ethernet 10/100	
13	Print Resolution	600x600 dpi or better	
14	Print Language	PCL5c,PCL6,PostScript 3	
15	Duty Cycle	100000 Pages or Higher per Month	
16	Print Management Software	Should come with management software for remotely installing, configuring, and managing network printer using standard web browser.	
17	OS Compatibility	Windows 2000, Windows XP, Unix	
18	Compliance	Energy Star	

Place

(Signature of Bidder)

Date

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASER PRINTER - A3 MONO

SPECIFICATION NO - LJO3L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Printers	**33**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print speed	40 ppm (A4, normal), 20 ppm (A3, normal) or higher	
6	Print Resolution, Black	600 X 600 dpi quality Min.	
7	Duty Cycle	250000 pages per month or higher	
8	Memory	128 MB or higher (OEM Original)	
9	Duplex Printing	Auto duplex ready	
10	Network Support	LAN ready	
11	Paper Trays	2	
12	Input Capacity	1000 or higher	
13	Media Sizes	ISO A4, ISO A5, ISO A3, JIS B5, JIS B4	
14	Media Types	Paper (plain, preprinted, letterhead, prepunched, bond, recycled, color, card stock, rough, recycled), envelopes, transparencies, labels	
15	Print Languages	PCL 6, PCL 5e, PostScript 3 emulation	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASER PRINTER - A3 MONO

SPECIFICATION NO - LJ03L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	Print Management Software	Should come with management software for remotely installing, configuring, and managing network printer using a standard web browser.	
17	Connectivity	Fast Ethernet 10/100	
18	OS Compatibility	Windows 2000, Windows Server 2003, Windows XP, Unix	
19	Compliance	Energy Star	

Place

(Signature of Bidder)

Date

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASERJET PRINTER - A3 COLOR

SPECIFICATION NO - LJ04L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Printers	**19**	
2	Make offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print Speed(Mono)	25 ppm (A4, normal) & 12 ppm (A3, normal) or higher	
6	Print Speed(Color)	25 ppm (A4, normal) & 12 ppm (A3, normal) or higher	
6	Paper Trays	2	
7	Network Ready	LAN Ready	
8	RAM	160 MB or higher (OEM Original)	
9	Document size	A3, A4, letter, legal, executive	
10	Duplex printing	Auto duplex ready	
11	Connectivity	IEEE 1284 compliant bidirectional parallel, Fast Ethernet 10/100	
12	Print Resolution	600x600 dpi or better	
13	Print Languages	PCL 6, PCL 5e, PostScript 3 emulation	
14	OS Compatibility	Windows 2000, Windows XP	
15	Print Management Software	Should come with management software for remotely installing, configuring, and managing network printer using a standard web browser.	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASERJET PRINTER - A3 COLOR

SPECIFICATION NO - LJO4L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	Duty Cycle	100000 pages per month or higher	
17	Compliance	Energy Star	

Place   (Signature of Bidder)

Date   Page 26 of 102   (Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASERJET PRINTER - A4 MONO LOW END

SPECIFICATION NO - LJ05L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Printers	**307**	
2	Make offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print Speed	25 ppm(A4, nornal) Or higher	
6	Network Ready	LAN Ready	
7	Duplex Printing	Auto duplex ready	
8	RAM	32 MB or higher (OEM original)	
9	Paper Trays	1	
10	Media Size	A4, A5, letter, executive, legal	
11	Connectivity	USB 2.0 port, Fastethernet 10/100	
12	Print Resolution	1200x1200 dpi or better	
13	Duty Cycle	15000 Pages or Higher per Month	
14	Print Management Software	Should come with management software for remotely installing, configuring, and managing network printer using a standard web browser.	
15	OS Compatibility	Windows 2000, Windows Server 2003,Windows XP	
16	Print Language	PCL5e,PCL6,PostScript 3	
17	Compliance	Energy Star	

Place

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Date

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASERJET PRINTER - A4 COLOR LOW END

SPECIFICATION NO - LJ06L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Printers	**29**	
2	Make offered		
3	Model offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print Speed(Mono)	20 ppm(A4, normal) Or higher	
6	Print Speed(Color))	20 ppm(A4, normal) Or higher	
7	Network Ready	LAN Ready	
8	RAM	128 MB or higher (OEM original)	
9	Paper Trays	2	
10	Media Capacity	350 or higher	
11	Document Size	A4, A5, letter, executive, legal	
12	Connectivity	USB 2.0, Fast Ethernet 10/100	
13	Print Management Software	Should come with management software for remotely installing, configuring, and managing network printer using a standard web browser.	
14	OS Compatibility	Windows 2000, Windows Server 2003, Windows XP	
15	Print Language	PCL5e,PCL6,PostScript 3	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LASERJET PRINTER - A4 COLOR LOW END

SPECIFICATION NO - LJ06L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	Duty cycle	50000 pages per month or higher	
17	Compliance	Energy Star	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR DESKJET PRINTER - A4 COLOR

SPECIFICATION NO - DJ01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Printers	**80**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print Speed (black)	35 ppm(draft) Or higher	
6	Print Speed (color)	32 ppm(draft) Or higher	
7	RAM	32 MB or higher (OEM original)	
8	Paper Trays	1	
9	Duplex Printing	Auto duplex ready	
10	Input Capacity	250 sheets or higher	
11	Document Size	Letter, legal, tabloid, executive	
12	Media Type	Paper (plain, inkjet, photo, banner), envelopes, transparencies, labels, greeting cards	
13	Connectivity	USB 2.0	
14	OS Compatibility	Windows 2000, Windows XP	
15	Duty Cycle	6000 pages per month or higher	
16	Print Language	PCL3	
17	Print Cartridges	4(1 each black,cyan,magenta,yellow)	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR DOT MATRIX PRINTER

SPECIFICATION NO - DM01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. Of Printers	**425**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print speed at 10 cpi	Minimum 400CPS(High-speed draft) and Minimun 100CPS (LQ)	
6	Printing method	24 Pin impact dot matrix	
7	Print direction	Bidirectional with logic seeking in both text & graphic	
8	Character size	Minimum at 10cpi 136 maximum printed characters	
9	Character set	PC 437 & Italics	
10	Paper width and length	Single sheet min 182 to 364 mm; continuous sheet 101 to 406mm	
11	Input Buffer	Minimum 32 KB	
12	Reliability	10000 POH or more	
13	Connectivity, Std.	Connectable to serial & parallel ports of devices	
14	OS Compatibility	Windows 9x, Windows 2000, Windows XP, Redhat Linux 7.2 and above	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR DOT MATRIX PRINTER

SPECIFICATION NO - DM01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	Power and Data cables	Each Printer is to be provided with Power cable and data cable	
16	Indian Language printing Capability	Unicode supported	
17	Scripts supported	Default Language, English + Hindi	
18	Standard supported	ISCII-91, PC-ISC11	
19	Ribbon life	3 million characters or more	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LINE MATRIX PRINTER

SPECIFICATION NO - LM01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Printers	**18**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print speed (Draft)	Minimum 1500 lines per minute	
6	Print speed (DP, Uppercase)	1100 lines per minute or higher	
7	Printing method	Line Impact. Should support high speed, DP, NLQ	
8	Connectivity (Interface) Required	Serial, Parallel , Ethernet	
9	OS Compatibility	Windows 9x/NT 4.0,Windows 2000/2003/XP, Redhat Linux, Unix	
10	Paper handling	Paper motion detection , paper out detection.	
11	Form Loop Control	Form loop control mechanism to be provided for pre-printed stationery.	
12	Ribbon Life	Minimum 75 million characters	
13	Noise Level	55dB(A) or less	
14	Printer Management Software	Printer Management Software to be provided	
15	Network Interface	10/100Mbps Ethernet Interface (Inbuilt) with autosensing dual speed minimum TCP/IP Support	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LINE MATRIX PRINTER

SPECIFICATION NO - LM01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	Network Management Software	Printer Manager Software (original)	
17	Cabinet	Quietised cabinet	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR PLOTTER- A0 LOW END

SPECIFICATION NO - PL01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Plotters	**10**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Print Speed	85 sq. ft. per hour (image fast mode) or higher	
6	Media Size	42 inch wide sheet or roll	
7	Print Resolution, Black& color	1200x600 dpi	
8	Print lenghth	150 ft	
9	Print language support	HP PCL 3-GUI,adobe post script3 via s/w Rip, HPGL/2 RTL	
10	Memory	32 MB (OEM)	
11	Connectivity	IEEE 1284-compliant bidirectoinal parallel, Fast Ethernet 10/100Base-TX	
12	Media handling / document finishing	Single sheet feed, roll feed, automatic cutter	
13	Type faces	136 post script on Rip	
14	Operating System Support	Windows NT, Windows 2000, Windows ME, Windows XP. UNIX (HP-UX; Solaris)	
15	Media for Drivers	All necessary drivers required should given in CD media.	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR PLOTTER- A0 LOW END

SPECIFICATION NO - PL01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	AutoCAD Support	Drivers to print from AutoCAD 2002 or Higher version to be provided.	
17	Certifications	IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR MULIT FUNCTION SYSTEM HIGH END (PLOT-COPY-SCAN)

SPECIFICATION NO - PLO3L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Multi Function System	**1**	
2	Make Offered		
3	Model Offered		
4	Support Pack for 5/5/5 warranty	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Compliance	Energy Star	
6	**PRINTER**		
7	Print Speed	Min 4 A0 per minute or heigher	
8	Resolution	400 DPI or higher	
9	Electronic Collation	Required	
10	Auto Roll Switching	Required	
11	Job Accounting	Required	
12	Paper Handling	3 rolls or more	
13	Media Cutter	Automatic Cutter	
14	Print output Size	914mm X 15m	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR MULIT FUNCTION SYSTEM HIGH END (PLOT-COPY-SCAN)

SPECIFICATION NO - PLO3L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	**CONTROLLER**		
16	Network Ready	Should be LAN Ready	
17	RAM	512 MB or higher (OEM original)	
18	HDD	Min 18 GB or higher	
19	Connectivity, Std.	IEEE 1284 compliant bidirectional parallel and 10/100 Base-T Fast Ethernet with RJ45 compatibility with External print Controller or with standard Embedded Print Controller . Protocol Suit: TCP/IP	
20	Remote Management Software (Plotter and Scanner)	Should come with remote management software to monitor & manage the system from remote location	
21	OS Compatibility	Windows 9x, Windows NT/2000, Windows XP/2003 Optional - Redhat Linux 7.2 or above and Unix	
22	Drivers	Windows 95, 98, Me, NT, 2000, XP; Embedded webserver file submitter. AutoCAD: R 14, 2000, 2002, 2004, 2005 for Windows ; ADOBE Acrobat 6.0	
23	Print Language	TIFF 6.0, CALS/G4, HP-GL/2, HP RTL	
24	Adobe Postscript3 with PDF	Required	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR MULIT FUNCTION SYSTEM HIGH END (PLOT-COPY-SCAN)

SPECIFICATION NO - PL03L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
25	**SCANNER**		
26	Scanning Speed	4 A0 per minute	
27	Scanning Resolution	400 DPI or higher	
28	Max Scan Length	36" x 15m	
29	Scan Media thickness	1mm or more	
30	Con-currency (Printing, Scans)	Required	
31	Scan preview station	Using External monitor (17") OR Using Client Machine (PC to be provided as integral part of the solution)	
32	Centering and Deskewing	Required	
33	Tray to Hold Originals	Required	
34	Zoom Options	25% TILL 400% ADJUSTABLE IN 1% AND 0.1% STEPS	
35	Set Collation / Job Program	Copying and Printing	

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR MULIT FUNCTION SYSTEM HIGH END (PLOT-COPY-SCAN)

SPECIFICATION NO - PL03L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
36	**Software**		
37	Scanned Image Editing	Required	
38	Raster to Vector Conversion (Semi & Fully Automatic)	Required	
39	Raster to Vector Conversion (Semi & Fully Automatic)	Required	

Place (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR INKJET PLOTTER - A0 LOW END

SPECIFICATION NO - PL04L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Plotters	**6**	
2	Make Offered		
3	Model Offered		
4	Technology	Ink Jet	
5	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
6	Print Speed, Normal Mode	140 Sq ft/hr	
7	Resolution	1200 x 600 dpi black, 600 x 600 dpi color	
8	Paper Handling	Single sheet feed, roll feed	
9	Media Cutter	Automatic cutter	
10	Media Type	Plain Paper, Polyester Film, Tracing & Vellum	
11	Print Output Size	A0,A1,A2, 914mm x 15m	
12	Network Ready	Ethernet 10/100 Mbps with UTP Port	
13	RAM	64 MB or higher (OEM original)	
14	Connectivity Required	IEEE 1284 compliant bi-directional parallel , 10/100 Base-T Fast Ethernet	
15	OS Compatibility	WIN NT/2000, Win XP/2003	
16	Drivers	Win NT/2000, XP Autocad: R14, 2000,2002,2004,2005, ADOBE Acrobat 6.0	
17	File Format	TIFF 6.0, CAL/G4, HPGL, HP-GL/2, HP RTL, AutoCad, Postscript, pdf	
18	Adobe Postscript with PDF	Required	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR INKJET PLOTTER - A0 LOW END

SPECIFICATION NO - PL04L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
19	Power Consumption	Vendor may specify Power Consumption	
20	Compliance	Energystar	

Place

(Signature of Bidder)

Date

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SCANNER - A4 GENERAL

SPECIFICATION NO - SC01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF SCANNERS	**163**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Type	A4 Color Flatbed Scanner	
	ADF speed	25 ppm / 50 ipm	
6	Hardware Resolution	4800 x 4800 dpi	
7	Scanning Resolution	9600 dpi	
8	Preview Speed	<= 5 seconds	
9	Transparency Adapter	Should come with transparency adapter to scan transparencies, slides and negative films	
10	Software	Scanning Software, OCR software , Adobe Acrobat Reader 4.0, Adobe Photoshop 7(elements) or latest photoediting software	
11	Scan Modes	Color Mode: 42 bits/pixel, Grayscale Mode:14 bits/pixel, Linear Mode: 1 bit/pixel	
12	OS Support	MS Windows Me/2000/XP	
14	INTERFACE	SCSI-II / USB 2.0 with requisite cables. In case of SCSI interface, SCSI card must also be provided	
15	OCR SOFTWARE	Integrated OCR	
16	SCAN TO PDF	Scan to searchable PDF facility should be available	

Place
(Signature of Bidder)

Date
(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SCANNER - A4 GENERAL

SPECIFICATION NO - SC01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
17	PHOTO EDITOR SOFTWARE	Adobe Photoshop ver. 7 or latest	
19	COMPLIANCE	Energy Star	

Place   (Signature of Bidder)

Date   Page 44 of 102   (Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SCANNER - A3 Color Flatbed

SPECIFICATION NO - SC02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF SCANNERS	**13**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	Type	A3 Color Flatbed Scanner	
6	Hardware Resolution	800 x 1600 dpi	
7	Scanning Resolution	9600 dpi	
8	Speed	10.8 ms/line	
9	Transparency Adapter	Should come with transparency adapter to scan transparencies, slides, positive and negative films	
10	Software	Scanning Software, OCR software (viz. Abbyy Finereader 7.0 or higher) , LAN scanning software, Corel PrintOffice 2000, Adobe Acrobat Reader 4.0, Adobe Photoshop 7 or latest photoediting software	
11	Scan Modes	Color Mode: 42 bits/pixel, Grayscale Mode:14 bits/pixel, Linear Mode: 1 bit/pixel	
12	OS Support	MS Windows 95/ 98/ NT/ Me/2000/XP	
13	Interface	Necessary SCSI card & cable to be provided for connecting scanner to work station/PC	

Place   (Signature of Bidder)

Date   (Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SCANNER - A4 HIGH END

SPECIFICATION NO - SC03L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. Of Scanners	**12**	
2	Make Offered		
3	Model Offered		
4	Support Pack	OEM Support Pack (labour/parts/on-site) warranty for the entire contract period	
5	SCANNER TYPE	A4 Flatbed Color Scanner	
6	IMAGE SENSOR TYPE	CCD(Charge Coupled Device)	
7	FEED	Manual & ADF Ready with paper tray/stacker/chute	
8	ADF CAPACITY	100 pages or higher	
9	DUPLEX	Should be duplex ready	
10	OPTICAL RESOLUTION	600dpi or higher	
11	OUPUT RESOLUTION	600dpi or higher	
12	SCANNING SPEED AT 200DPI(COLOR, PORTRAIT)	15 ppm (30 ipm in duplex mode) or higher	
13	SCANNING SPEED AT 200DPI(B & W , PORTRAIT)	40 ppm (80 ipm in duplex mode) or higher	
14	DOCUMENT SIZE	A4, Legal, Letter	
15	INTERFACE	SCSI-II (50M)/USB with requisite cables. In case of SCSI interface, SCSI card must also be provided	
16	POWER CONSUMPTION	Vendor may specify Power Consumption	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SCANNER - A4 HIGH END

SPECIFICATION NO - SCO3L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
17	DRIVER SUPPORT	Driver should be ISIS & TWAIN Compliant	
18	OCR SOFTWARE	Integrated OCR Abbyy Finereader 7.0 or higher to be provided	
19	OS COMPATIBILITY	WIN98/2000/XP	
20	PHOTO EDITOR SOFTWARE	Adobe Photoshop CS or latest	
21	DAILY DUTY CYCLE	4000 documents per day	
22	SCAN TO PDF	Scan to PDF facility should be available	
23	COMPLIANCE	ENERGYSTAR	

Place (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SCANNER - A3 HIGH END

SPECIFICATION NO - SC04L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF SCANNERS	**8**	
2	Make Offered		
3	Model Offered		
4	SCANNER TYPE	A3 Flatbed Color Scanner	
5	IMAGE SENSOR TYPE	CCD(Charge Coupled Device)	
6	FEED	Manual & ADF Ready with paper tray/chute/stacker	
7	ADF CAPACITY	200 pages or higher	
8	DUPLEX	Should be duplex ready	
9	OPTICAL RESOLUTION	600dpi or higher	
10	OUPUT RESOLUTION	600dpi or higher (color, grayscale, binary)	
11	SCANNING SPEED AT 200DPI (A4 COLOR , PORTRAIT)	40 ppm (80 ipm in duplex)or higher	
12	SCANNING SPEED AT 200DPI(A4 B&W, PORTRAIT)	50 ppm (100 ipm in duplex) or higher	
13	DOCUMENT SIZE	A8 to A3	
14	INTERFACE	Ultra SCSI-(50M)SCSI-I/High Speed USB 2.0 with requisite cables. In case of SCSI interface, SCSI card must also be provided	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SCANNER - A3 HIGH END

SPECIFICATION NO - SC04L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	POWER CONSUMPTION	Vendor may specify Power Consumption	
16	DRIVER SUPPORT	Driver should be ISIS & TWAIN Compliant	
17	OCR SOFTWARE	Integrated OCR Abbyy Finereader 7.0 or higher to be provided	
18	OS COMPATIBILITY	WIN98/2000/XP	
19	PHOTO EDITOR SOFTWARE	Adobe Photoshop CS or latest	
20	DAILY DUTY CYCLE	8000 documents per day	
21	SCAN TO PDF	Scan to PDF facility should be available	
22	COMPLIANCE	ENERGYSTAR	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SMALL UPS

SPECIFICATION NO - UP01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF UPS	**934**	
2	Make Offered		
3	Model Offered		
4	Rating	800 VA or above	
5	Technology	Line-Interactive	
6	Nominal Input Voltage	230V single phase	
7	Input Voltage Range	160V AC to 275V AC	
8	Input Frequency	50 Hz +/- 3 Hz	
9	Nominal Output Voltage	230V AC +/- 5%	
10	Output Frequency	50 Hz +/-1 Hz	
11	Output power capacity	Min. 560 watts	
12	Automatic Voltage Regulation	Automatic Voltage Regulation to be provided	
13	Transfer time	< 6ms	
14	Overload capability	110% for 60 minutes, 150% for 5 minutes	
15	Protection	Surge, brownout, sag, short circuit, etc protection to be provided	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SMALL UPS

SPECIFICATION NO - UP01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	Battery Type	Sealed maintenance-free	
17	Battery make	Panasonic / Global Yuasa / Rocket	
18	Communication Port	RS232C or USB port & necessary communication cables to be provided	
19	Backup	Min. 20 minutes on single PC load	
20	Power Management Software	The UPS should come with Power Management Software to view & monitor UPS status, backup time & shutdown scheduling for Windows 9x/ME/XP systems	
21	Warranty	OEM warranty (labour/parts/on-site) for the entire contract period	
22	Compliance	IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2KVA UPS

SPECIFICATION NO - UP02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF UPS	**46**	
2	Make Offered		
3	Model Offered		
4	Rating	2KVA	
5	Technology	Line Interactive	
6	Nominal Input Voltage	230V single phase	
7	Input Voltage Tolerance	170V to 275V	
8	Input Frequency	50 Hz +/- 3 Hz	
9	Nominal Output Voltage	230 V AC +/- 5%	
10	Output Frequency	50 Hz +/- 1 Hz	
11	Output power factor	0.7 or higher	
12	Automatic Voltage Regulation	Should be provided	
13	EMI/RFI Protection	Should be provided	
14	Overall Efficiency	>90%	
15	Overload capability	110% for 60 minutes, 150% for 5 minutes	
16	LED indicators	Should be provided (on mains, on battery, replace battery, overload, etc)	
17	Cold start	Cold start on 100% load	
18	Battery Type	Sealed, maintenance-free	
19	Battery Make	Panasonic / Global Yuasa / Rocket	

Place (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2KVA UPS

SPECIFICATION NO - UP02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
20	Backup	Min. 20 minutes on full load	
21	Communication Port	RS232C port & necessary communication cables to be provided	
22	Power Management Software	The UPS should come with Power Management Software to view & monitor UPS status, backup time, battery status, temperature & shutdown scheduling for Windows 9x/NT//200/XP & Red Hat Linux 7.2 & above systems	
23	Warranty	OEM warranty (labour/parts/on-site) for the entire contract period	
24	Compliance	IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place   (Signature of Bidder)

Date   (Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 5KVA UPS

SPECIFICATION NO - UP03H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF UPS	**28**	
2	Make Offered		
3	Model Offered		
4	Rating	5KVA	
5	Technology	True Online, Double Conversion with PWM Technology & IGBT based Inverter	
6	Nominal Input Voltage	230V single phase	
7	Input Voltage Range	160V AC to 275V AC	
8	Input Frequency	50 Hz +/- 3 Hz	
9	Input Power Factor	> 0.90	
10	Nominal Output Voltage	230 Vac +/- 5%	
11	Output Frequency	50 Hz +/- 1 Hz	
12	Output power factor	0.7 or higher	
13	Overall efficiency	> 85%	
14	Overload capability	110% for 60 minutes, 150% for 5 minutes	
15	THD	<5%	
16	Battery Type	Sealed, maintenance-free	
17	Battery Make	Panasonic / Global Yuasa / Rocket	
18	Backup	Min. 30 minutes on full load	
19	Cold Start	Cold start on 100% load	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 5KVA UPS

SPECIFICATION NO - UP03H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
20	Communication Port	RS232 or USB port & necessary communication cables to be provided	
21	SNMP Card	SNMP Card to be provided for connecting UPS to Ethernet LAN to monitor and manage the UPS with a standard Web browser, while simultaneously providing shutdown & restart for multiple windows, Linux & Unix computer systems over LAN	
22	Power Management Software	The UPS should come with Power Management Software to view & monitor UPS status, backup time & shutdown scheduling for Windows 9x/NT//200/XP & Red Hat Linux 7.2 & above systems	
23	Battery Refresh	The bidder shall replace all the batteries after every 2.5 years and whenever the batteries get faulty.	
24	Warranty	OEM warranty (labour/parts/on-site) for the entire contract period	
25	Compliance	IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place   (Signature of Bidder)

Date   (Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 10 KVA ONLINE UPS

SPECIFICATION NO - UP04H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF UPS	**11**	
2	Make Offered		
3	Model Offered		
4	System Configuration	10 KVA	
5	Technology	True Online, Double Conversion with PWM Technology & IGBT based Inverter	
6	Input Source	Mains/Local DG Set Compatibility	
7	Input Voltage	415V AC 3 phase, 4 wires	
8	Input Voltage Tolerance	± 20%	
9	Input Frequency	50 Hz	
10	Input Frequency Tolerance	45 HZ TO 55 HZ	
11	Input Power factor at nominal voltage and full load	>0.9	
12	Total Harmonic Distortion at 100% NonLinear Load	< 5%	
13	Output Voltage	230 Volts Single Phase	
14	Output Voltage Regulation	± 1% - For 100% static load , ± 1% For 100% balanced load, ± 1% - For 100% un-balanced load. THDU <3% between phase to neutral for 100% non-linear load	
15	Output Power Factor	0.9 or higher (KVA x PF will also be considered for evaluation)	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 10 KVA ONLINE UPS

SPECIFICATION NO - UP04H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
16	Over Load Rating	110% for 60 minutes, 125% for 10 minutes, 150% for 60 seconds	
17	Inverter Efficiency	> 89%	
18	Overall efficiency	> 85%	
19	Static Bypass switch	A Built-in static transfer switch shall be provided as an integral part of the UPS. The Static switch shall be a Bi-directional naturally committed high-speed static (SCR type) device rated to carry full load current continuously.	
20	Manual Bypass switch	Built-in Maintenance Bypass Isolator A manually operated maintenance bypass isolator shall be incorporated into the UPS cabinet to directly connect the load to the input AC power source, bypassing the rectifier, inverter and static transfer switch.	
21	Battery type	Sealed Maintenance Free with a separate Battery Cabinet/Rack	
22	Battery make	Panasonic / Global Yuasa / Rocket	
23	Desired Backup	Min. 30 minutes backup on full load	
24	Battery management	Advance Battery Management for: Periodic Battery Test Controlling Charging Time and Current Increase in Battery Life Faster recharging than average boost charging when required. Protection : Battery low Cut-off without draining current	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 10 KVA ONLINE UPS

SPECIFICATION NO - UP04H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
25	LCD Panel	The UPS should have LCD panel for measuring Output voltages, Output currents and Frequency, Battery Voltage and charging / discharging current, display status of the battery capacity and backup time left and event logging	
26	RS232 interface	RS232 interface to be provided	
27	Power Management Software	The UPS should have Power management software and interface cable, providing complete power monitoring and control capabilities to system administrators. It should safely shutdown & restart multiple Windows & Linux clients over LAN. analyze power conditions with voltage logging, Should support Linux & Windows (95/98/2000/2003) operating systems	
28	SNMP Card	The UPS should have SNMP card & Remote Management of UPS System through LAN should be possible.	
29	Battery Refresh	The bidder shall replace all the batteries after every 2.5 years and whenever the batteries get faulty.	
30	Warranty	OEM onsite/labour/parts warranty for the entire lease period.	
31	Compliance	IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2X10 KVA ONLINE UPS

SPECIFICATION NO - UP05H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF UPS	**2**	
2	Make Offered		
3	Model Offered		
4	System Configuration	2x10 KVA in parallel redundant equal load sharing Mode. One UPS should be capable of taking 100% load instataneously in case other UPS fails.	
5	Technology	True Online, Double Conversion with PWM Technology & IGBT based Inverter	
6	Input Source	Mains/Local DG Set Compatibility	
7	Input Voltage	415V AC 3 phase, 4 wires	
8	Input Voltage Tolerance	± 20%	
9	Input Frequency	50 Hz	
10	Input Frequency Tolerance	45 HZ TO 55 HZ	
11	Input Power factor at nominal voltage and full load	>0.9	
12	Total Harmonic Distortion at 100% NonLinear Load	< %5	
13	Output Voltage	230 Volts Single Phase	
14	Output Voltage Regulation	± 1% - For 100% static load , ± 1% For 100% balanced load, ± 1% - For 100% un-balanced load. THDU <3% between phase to neutral for 100% non-linear load	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2X10 KVA ONLINE UPS

SPECIFICATION NO - UP05H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	Output Power Factor	0.9 or higher (KVA x PF will also be considered for evaluation)	
16	Over Load Rating	110% for 10 minutes, 125% for 01 minutes, 150% for 30 seconds	
17	Inverter Efficiency	> 89%	
18	Overall efficiency	> 85%	
19	Static Bypass switch	A Built-in static transfer switch shall be provided as an integral part of the UPS. The Static switch shall be a Bi-directional naturally committed high-speed static (SCR type) device rated to carry full load current continuously.	
20	Manual Bypass switch	Built-in Maintenance Bypass Isolator A manually operated maintenance bypass isolator shall be incorporated into the UPS cabinet to directly connect the load to the input AC power source, bypassing the rectifier, inverter and static transfer switch.	
21	Battery type	Two independent Sealed Maintenance Free battery banks with a separate Battery Cabinet/Rack	
22	Battery make	Panasonic / Rocket Global Yuasa	
23	Desired Backup	Min. 30 minutes backup on full load on each battery bank	
24	Battery management	Advance Battery Management for: Periodic Battery Test Controlling Charging Time and Current Increase in Battery Life Faster recharging than average boost charging when required. Protection : Battery low Cut-off without draining current	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2X10 KVA ONLINE UPS

SPECIFICATION NO - UP05H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
25	LCD Panel	The UPS should have LCD panel for measuring Output voltages, Output currents and Frequency, Battery Voltage and charging / discharging current, display status of the battery capacity and backup time left and event logging	
26	RS232 interface	RS232 interface to be provided	
27	Power Management Software	The UPS should have Power management software and interface cable, providing complete power monitoring and control capabilities to system administrators. It should safely shutdown & restart multiple Windows & Linux clients over LAN. analyze power conditions with voltage logging, Should support Linux & Windows (95/98/2000/2003) operating systems	
28	SNMP Card	The UPS should have SNMP card & Remote Management of UPS System through LAN should be possible.	
29	Battery Refresh	The bidder shall replace all the batteries after every 2.5 years and whenever the batteries get faulty.	
30	Warranty	OEM onsite/labour/parts warranty for the entire lease period.	
31	Compliance	IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2X40 KVA ONLINE UPS

SPECIFICATION NO - UP06H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of UPS	**13**	
2	Make Offered		
3	Model Offered		
4	System Configuration	2 x 40 KVA UPS in parallel redundancy equal Load Sharing Mode. One UPS should be capable of taking 100% load instantaneously in case the other UPS fails.	
5	Technology	True On-line, double conversion type	
6	Input Source	Mains/Local DG Set Compatibility	
7	Input Voltage	415 VAC 3 phase, 4 wires	
8	Input Voltage Tolerance	± 20%	
9	Input Frequency	50 Hz	
10	Input Frequency Tolerance	45 HZ TO 55 HZ	
11	Input Power Factor at nominal voltage and full load	>0.9	
12	Total Harmonic Distortion at 100% NonLinear Load	< %5	
13	Output Voltage	415 VAC 3 phase, 4 wires	
14	Output Voltage Regulation	± 1% for 100% static load , ± 1% for 100% balanced load, ± 1% for 100% un-balanced load. THDU < 3% between Phase to Neutral for 100% non-linear load	

Place

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Date

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2X40 KVA ONLINE UPS

SPECIFICATION NO - UP06H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	Output Power Factor	0.9 or higher (KVA x PF will be also be considered for evaluation)	
16	Over Load Rating	110% for 10 minutes, 125% for 01 minutes 150% for 30 seconds	
17	Inverter Efficiency	> 89%	
18	Overall efficiency	> 85%	
19	Static Bypass switch	A Built-in static transfer switch shall be provided as an integral part of the UPS. The Static switch shall be a Bi-directional naturally committed high-speed static (SCR type) device rated to carry full load current continuously.	
20	Manual Bypass switch	The UPS should have a Built-in Maintenance Bypass Isolator to directly connect the load to the input AC power source, bypassing the rectifier, inverter and static transfer switch.	
21	Battery type	Two independent Sealed Maintenance Free battery banks with a separate Battery Cabinet	
22	Battery make	Panasonic / Rocket / Global Yousa	
23	Desired Backup	Min. 60 minutes backup on full load on each battery bank	
24	Battery management	Advance Battery Management for: Periodic Battery Test Controlling Charging Time and Current Increase in Battery Life Protection : Battery low Cut-off without draining current	

Place

(Signature of Bidder)

Date

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 2X40 KVA ONLINE UPS

SPECIFICATION NO - UP06H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
25	LCD Panel	The UPS should have LCD panel for measuring Output voltages, Output currents and Frequency, Battery Voltage and charging / discharging current, display status of the battery capacity and backup time left and event logging	
26	RS232 interface	RS232 interface to be provided	
27	Power Management Software	The UPS should have Power management software and interface cable, providing complete power monitoring and control capabilities to system administrators. It should Safely shutdown & restart multiple Windows & Linux clients over LAN, analyze power conditions with voltage logging, Should support Linux & Windows (95/98/2000/2003) operating systems	
28	SNMP Card	The UPS should have SNMP card & Remote Management of UPS System through LAN should be possible.	
29	Battery Refresh	The bidder shall replace all batteries after every 2.5 years and whenever the batteries get faulty	
30	Warranty	OEM onsite / labour / parts warranty for the entire lease period	
31	Compliance	IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place

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Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SAN STORAGE

SPECIFICATION NO - ST01H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Storage Units	**3**	
2	Make Offered		
3	Model Offered		
4	Storage	The offered storage system should be compatible with multi-vendor heterogeneous servers and operating systems	
5	Storage Capacity (External Rack Mount)	25 Nos. of 73GB, 15K FC HDDs to be provided. 1 HDD shall be used as global hot spare.	
6	Storage Scalability	Should support scalability to at least 8-TB with 146GB HDDs	
7	RAID support	RAID 1, 1+0, 5	
8	Controller	Dual controllers (fully redundant with support for automatic failover)	
9	Cache per Controller	1 GB or higher Cache per controller	
10	Number Of Servers to be connected on SAN	2	
11	Fibre Channel HBA's	2 Nos. of 4 Gbps FC HBA's per server to be provided (Windows/Linux compatible)	
12	Fibre Channel Cable	12 Nos. of 5 m LC-LC Multi-Mode Fibre Channel Cables to be provided	
13	Muti-pathing software	Multi-pathing software to be provided for each server.	
14	Power Supply	Redundant Hot Pluggable Power Supplies.	
15	Front End / Back End Ports	2 nos. of 4 Gbps Front End ports per Controller. ALL backend ports shall be 4 Gbps.	
16	OS Support	Support for Windows 2000 AS /2003 AS/ Red Hat Linux AS 3 & ABOVE	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SAN STORAGE

SPECIFICATION NO - ST01H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
17	Fiber switch	2 No.s of 8 - port 4Gbps or higher fiber SAN Switches compatible with the storage solution	
18	Mounting	Rack mountable with necessary rack mounting kit and accessories.	
19	Storage Management Software	Software for storage management, RAID configuration, Storage Health monitoring, Alerting, partitioning (min. 32), etc. to be provided.	
20	IOPS	Storage should offer min. 1,00,000 IOPs.	
21	Throughput	Min. 650MB/s throughput	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NAS

SPECIFICATION NO - ST02H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of NAS Storage Units	**5**	
2	Make Offered		
3	Model Offered		
4	Rack mount	Should be rack mount	
5	Processor	Two Dual Core Intel Xeon procesors 2.0 GHz or higher	
6	FSB	1333 MHz or higher	
7	RAM	2 GB DDR SDRAM expandable to 4 GB	
8	Cache Memory	1MB level 2 cache per CPU	
9	Hard Drives	2x36GB 10K rpm SCSI/SAS HDDs internal for mirrored OS, and 10x146 GB for Data storage. The HDDs for Data Storage should be Ultrs320 SCSI 15K rpm hot-pluggable or higher. The NAS box should also support SATA drives for aplications like snapshots.	
10	HDD Bays (Internal & External)	At least 16 bays (OEM Make) to be provided from day 1	
11	DVD Drive	8x24x DVD Drive or higher	
12	Scalability	Minimum 4TB	
13	Network Connectivity	2 10/100/1000 auto sensing NICs	
14	RAID Controller	RAID Controllor with 4 channels supporting RAID 0, RAID 1 & RAID 5 with 256MB battery backed cache	
15	Network support	TCP/IP, FTP, CIFS, HTTP 1.1, NFS	
16	Fault Tolerance	Mirrored(Hardware RAID) OS drives for recovery and system protection	
17	Power Suply & Fans	Redundant & hot pluggable	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NAS

SPECIFICATION NO - ST02H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
18	Fault Recovery	Quick restore CD for disaster recovery	
19	Network Client Types Support	Should support Windows 9x, Windows NT, Windows 2000, Windows XP, UNIX & Redhat Linux	
20	Manageability	Software with web interface for network management and specialized software required for increasing file serving capacity of NAS	
21	Data replication	Support for NAS to NAS data replication & snapshots	
22	Backup device	LTO 3 Ultrium drive with 5 nos. of 400GB capacity tapes and backup software with SCSI Adaptor & Cable to be provided to connect LTO to NAS box. Cleaning Cartridge per LTO drive to be provided also	
23	Operating System	Microsoft Windows 2003 Storage Server (NAS optimized) including powered OS drivers	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SERVER - 2 WAY RACK

SPECIFICATION NO - SR01H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF SERVERS	**38**	
2	Make Offered		
3	Model Offered		
4	Mounting	Rack Models	
5	Height	Max 2U	
6	Processor	Dual Core Intel Xeon 3.0 GHz or higher	
7	No. of Processors	Two (2)	
8	Chip Set	Intel 5000P / 5000X	
9	CPU Cache	4MB L2 Cache	
10	FSB	1333 MHz or higher FSB	
11	Memory	4 GB ECC DDR2 667 MHz SDRAM or more with 1 GB or higher memory modules.	
12	Extension slots	2 or more PCI-X / PCI-express slots	
13	HDD	5 x 73-GB or higher sff Hot Plug SAS 10K rpm RAID - 0,1, 5	
14	Internal HDD bays	6 or more hot plug drive bays	
15	DVDROM	8x or higher DVD-CDRW Combo Drive	
16	Raid Controller	3G SAS RAID Controller with 256 MB battery backed cache	
17	NIC	10/100/1000 Ethernet Card - 3 Nos. (2 ports on board and 1 in PCI slot)	
18	Power Supply	Hot plug & redundant power supply N+1	
19	Fans	Hot pluggable redundant fans	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SERVER - 2 WAY RACK

SPECIFICATION NO - SR01H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
20	Management Software	Management software having following features should be providede with each server: 1)OS independent remote management capabilities. 2)Provide proactive notification of actual or impending component failure alerts. 3)Inventory management (H/W & S/W) 4)Remote software deployment 5)Remote patch deployment	
21	CERTIFICATIONS	Red Hat Linux Advanced Server 3.0 or higher and MS Win2003 Enterprise Edition Server or higher. - Certificate to be enclosed	
		For OEM : ISO 9001:2000 (CERTIFICATE TO BE ENCLOSED)	
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place   (Signature of Bidder)

Date   (Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SERVER - 4 WAY RACK

SPECIFICATION NO - SR02H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF SERVERS	**20**	
2	Make Offered		
3	Model Offered		
4	Mounting	Rack Mount (Rack Optimized)	
5	Height	Max. 4U	
6	Processor	Intel Dual Core 64-Bit Intel Xeon 3.3 GHz or higher	
7	No. of Processors required	Four (4)	
8	Chip Set	Intel 8501 or equivalent OEM chipset	
9	CPU Cache	16 MB integrated L3 Cache or higher	
10	FSB	667 MHz FSB Split / 800 MHz FSB or higher	
11	Memory	8 GB 2/4 way interleaved ECC DDR2 RAM 400 MHz or more with enough free slots to upgrade to 16GB	
12	Extension slots	Four or more PCI-X/Express slots	
13	HDD	4 x 73 GB sff Hot Plug SAS 10K RPM RAID - 0,1 and 5	
14	Internal HDD bays	4 hot plug drive bays or higher.	
15	DVDROM	8x or higher DVD-CDRW Combo Drive	
16	Raid Controller	3G SAS RAID Controller with 256 MB or higher Battery Backed Cache	
17	NIC	10/100/1000 Ethernet Card/Ports - 3 Nos.	
18	Power Supply	Hot plug & redundant power supply N+1	
19	Fans	Hot pluggable fans	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SERVER - 4 WAY RACK

SPECIFICATION NO - SR02H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
20	Management	Management software having following features should be providede with each server: 1)OS independent remote management capabilities. 2)Provide proactive notification of actual or impending component failure alerts. 3)Inventory management (H/W & S/W) 4)Remote software deployment 5)Remote patch deployment	
21	CERTIFICATIONS	Red Hat Linux Advanced Server 3.0 or higher and MS Win2003 Enterprise Edition Server or higher. - Certificate to be enclosed	
		For OEM : ISO 9001:2000 (CERTIFICATE TO BE ENCLOSED)	
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SERVER - BLADE

SPECIFICATION NO SR03H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. of Servers	**32**	
2	Make Offered		
3	Model Offered		
4	Mounting	Rack Mount (Rack Optimized)	
5	Processor	Dual Core Intel Xeon 3.0 GHz processor or higher	
6	No. of Processors	Two (2)	
7	Chipset	Intel 5000P or equivalent	
8	CPU Cache	4MB (1 X 4MB) L2 Cache	
9	FSB	1333 MHz or higher FSB	
10	Memory	8 GB DDR2-667 Fully Buffered DIMMs with memory interleaving expandable to 32 GB	
11	PCI Expansion slots	2 or more PCI/PCI-X slots	
12	HDD	2 x 73GB SAS 10K RPM	
13	Internal HDD bays	2 drive bays or higher	
14	Raid Controller	Integrated hardware SAS RAID controller supporting RAID 1	
15	NIC	Embedded 2 No.s Multifunction Gigabit Network Adapters with TCP/IP Offload Engine + 1 dedicated 10/100 Ethernet port for remote management	

Place

(Signature of Bidder)

Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SERVER - BLADE

SPECIFICATION NO SR03H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
17	Management	Server OEM Browser based Management Software for Monitoring, Managing and Configuring Servers. The management should support Query based monitoring of the server components. Support for heterogeneous operating environments - Microsoft Windows , Linux.	
18	CERTIFICATIONS	For OEM : ISO 9001:2000 (CERTIFICATE TO BE ENCLOSED)	
		IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) Certificate to be enclosed.	

Place   (Signature of Bidder)

Date   (Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LAYER 3 NETWORK SWITCH

SPECIFICATION NO - NS01H

S.No.	Features	Minimum BHEL Requirements	Vendors Compliance (YES / NO)
1	No. Of Switches	**13**	
2	Make Offered		
3	Model Offered		
4	Ports	The offered switch should have following ports from day one	
	4.1	24 Nos. of 10/100/1000Mbps Ethernet ports	
	4.2	4 Nos. of SFP uplink ports with 1000Base SX Ports	
5	LC-to-SC Patch Cords	Should come with min. 5 meter long Fiber Multimode SX LC-to-SC Patch Cords -- 4 Nos.	
6	Forwarding Bandwidth	30 Gbps or More	
7	Throughput	35 Mpps or More for 64 Bytes Packets	
8	MAC Addresses	Should support min. 10000 MAC addresses	
9	Software	The offered switch should come with the latest operating system having full layer 2 and layer 3 features.	
10	Dynamic Trunking Protcol (DTP) support	Should support Dynamic Trunking Protocol (DTP) on all switch ports	
11	Port Aggregation Protocol (PAgP) support	Should support Port Aggregation (PAgP) for Gigabit EtherChannel groups	

Place

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Date

(Stamp of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR LAYER 3 NETWORK SWITCH

SPECIFICATION NO - NS01H

S.No.	Features	Minimum BHEL Requirements	Vendors Compliance (YES / NO)
12	DHCP Relay	Should support DHCP Relay to broadcast DHCP requests to the DHCP server	
13	IP Routing support	Should support RIPv1, RIPv2, OSPF, IGRP, EIGRP, BGP4, Policy Based Routing (PBR), Inter-VLAN routing, etc.	
14	STP support	Should support Spanning Tree Protocol IEEE 802.d & Multiple Spanning Tree Protocol (MSTP) IEEE 802.1s	
15	VTP suport	Should support VLAN Trunking Protocol	
16	Security features	Should support IEEE 802.1x for ports & vlans, VLAN ACLs, Port-based ACLs, TACACS+ & RADIUS	
17	Manageability	Should be remotely managable through a standard web browser.	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK SWITCH LAYER 2 - 48 PORT

SPECIFICATION NO - NS02H

S.No.	Features	Minimum BHEL Requirements	Vendors Compliance (YES / NO)
1	No. Of Switches	**32**	
2	Make Offerd		
3	Model Offered		
4	Ports	The offered switch should have following ports from day one	
	4.1	48 Nos. of 10/100Mbps Ethernet ports	
	4.2	2 Nos. of GBIC uplink ports with 1000Base SX Ports	
5	Software	The offered switch should come with the latest operating system having full layer 2 features.	
6	Forwarding Bandwidth	10Gbps or more	
7	Throughput	10 Mpps or More for 64 Bytes Packets	
8	Dynamic Trunking Protcol (DTP) support	Should support Spanning Tree Protocol IEEE 802.d , Per VLAN Spanning Tree Protocol (PVST)	
9	STP support	Should support Spanning Tree Protocol IEEE 802.d	
10	Standards support	It should support following standards: 802.1Q VLAN tagging· 802.1p Priority· 802.1D Spanning Tree· 802.3u Fast Ethernet· 802.3x Flow Control· 802.3z Gigabit Ethernet.· 802.3ab 1000Base-T (Gigabit Ethernet over Copper)· 802.1x Authentication	
11	VTP suport	Should support VLAN Trunking Protocol	

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK SWITCH LAYER 2 - 48 PORT

SPECIFICATION NO - NS02H

S.No.	Features	Minimum BHEL Requirements	Vendors Compliance (YES / NO)
12	Security features	Should support IEEE 802.1x for ports & vlans, VLAN ACLs, Port-based ACLs, TACACS+ & RADIUS	
13	Manageability	Should be remotely managable through a standard web browser.	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK SWITCH LAYER 2 - 24 PORT

SPECIFICATION NO - NS03H

S.No.	Features	Minimum BHEL Requirements	Vendors Compliance (YES / NO)
1	No. Of Switches	**98**	
2	Make Offered		
3	Model Offered		
4	Ports	The offered switch should have following ports from day one	
	4.1	24 Nos. of 10/100Mbps Ethernet ports	
	4.2	2 Nos. of fixed 10/100/1000BASE-T uplink ports	
5	Forwarding Bandwidth	10 Gbps or more	
6	Throughput	5Mpps or More for 64 Bytes Packets	
7	Software	The offered switch should come with the latest operating system having full layer 2 features.	
8	Dynamic Trunking Protcol (DTP) support	Should support Dynamic Trunking Protocol (DTP) on all switch ports	
9	STP support	Should support Spanning Tree Protocol IEEE 802.d , Per VLAN Spanning Tree Protocol (PVST)	
10	Standards support	It should support following standards: 802.1Q VLAN tagging· 802.1p Priority· 802.1D Spanning Tree· 802.3u Fast Ethernet· 802.3x Flow Control· 802.3z Gigabit Ethernet.· 802.3ab 1000Base-T (Gigabit Ethernet over Copper)· 802.1x Authentication	
11	VTP suport	Should support VLAN Trunking Protocol	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK SWITCH LAYER 2 - 24 PORT

SPECIFICATION NO - NS03H

S.No.	Features	Minimum BHEL Requirements	Vendors Compliance (YES / NO)
12	Security features	Should support IEEE 802.1x for ports & vlans, VLAN ACLs, Port-based ACLs, TACACS+ & RADIUS	
13	Manageability	Should be remotely managable through a standard web browser.	

Place (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR WIRELESS ACCESS POINT

SPECIFICATION NO - NS04H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. Of Wireless Access Points	**100**	
2	Make Offered		
3	Model Offered		
4	Network Standard	802.11g, 802.11b, 802.11a	
5	Data Transfer Rate Supported	Shall provide 11Mbps with 802.11b & 54Mbps with 802.11a/g	
6	No. of Channels Supported	Shall have 11 selectable channels.	
7	Uplink	Autosensing 10/100Base-T Ethernet , Auto MDIX, Carrier-Sense Multiple Access/Collision Avoidance (CSMA/CA)	
8	Software	Should come with the latest operating system	
9	Management	BootP, Secure Shell (SSH) Protocol, Secure HTTP (HTTPS), Trivial File Transfer Protocol (TFTP), FTP, Telnet, console port, SNMP MIB I and MIB II,	
10	Encryption	Shall support 128-bit WEP, 40-bit WEP, TLS, WPA encryption algorithms.	
11	WiFi Certification	Wi-Fi Protected Access (WPA) and WPA 2, 802.1x authentication, Intel Centrino certified/compliant	
12	Misc	Should come with necessary manuals, cables & CDs	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK SWITCH LAYER 2 - 24 PORT 10/100 with POE

SPECIFICATION NO - NS05H

S.No.	Features		Detailed Specifications	Vendors Compliance (YES / NO)
1	No. Of POE Switches		**1**	
2	Make Offered			
3	Model Offered			
4	Ports		The offered switch should have following ports from day one	
		4.1	24 Nos. of 10/100Mbps Ethernet ports	
		4.2	2 Nos. of fixed 10/100/1000BASE-T uplink ports	
5	Forwarding Bandwidth		30 Gbps or more	
6	Throughput		6Mpps or More for 64 Bytes Packets	
7	Software		The offered switch should come with the latest operating system having full layer 2 features.	
8	Dynamic Trunking Protcol (DTP) support		Should support Dynamic Trunking Protocol (DTP) on all switch ports	
9	STP Support		Should support Spanning Tree Protocol IEEE 802.d , Per VLAN Spanning Tree Protocol (PVST)	
10	Standards support		It should support following standards: 802.1Q VLAN tagging· 802.1p Priority· 802.1D Spanning Tree· 802.3u Fast Ethernet· 802.3x Flow Control· 802.3z Gigabit Ethernet.· 802.3ab 1000Base-T (Gigabit Ethernet over Copper)· 802.1x Authentication	
11	VTP suport		Should support VLAN Trunking Protocol	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK SWITCH LAYER 2 - 24 PORT 10/100 with POE

SPECIFICATION NO - NS05H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
12	Security features	Should support IEEE 802.1x for ports & vlans, VLAN ACLs, Port-based ACLs, TACACS+ & RADIUS	
13	Power over Ethernet	**Should have Power over Ethernet feature as per IEEE 802.3af**	
14	Manageability	Should be remotely managable through a standard web browser.	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK FIREWALL AND IPS

SPECIFICATION NO - NS06H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. Of Systems	**1**	
2	Make Offered		
3	Model Offered		
4	Device specifictions	Should be appliance based stateful Firewall with IPS functionality	
5	Ports	Should have following integrated ports from day one	
	5.1	Should have min. 4 Nos. of 10/100/1000 Mbps Ethernet ports	
	5.2	Should have min 1 Nos. of fixed 10/100BASE-T Ethernet ports	
6	Minimum connections/second	Should give min. 8000 connections per second	
7	Minimum simultaneous connections	250000	
8	Throughput	Should give a min. 400 Mbps firewall only throuhput	
9	Concurrent threat mitigation throughput (Mbps) (firewall + IPS services)	Min 200 mbps	
10	Software	The offered appliance should come with the latest operating system having full security features.	
11	Minimum site-to-site and remote access VPN user sessions	700	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR NETWORK FIREWALL AND IPS

SPECIFICATION NO - NS06H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
12	Minimum virtual interfaces (VLANs)	50	
13	Application-layer security	Should provide application and protocol inspection for H.323 v1-4, GTP (3G Wireless), MGCP, RTSP, TAPI / JTAPI, HTTP, FTP, TFTP, SMTP / ESMTP, DNS / EDNS, ICMP, TCP, UDP, ILS / LDAP, SIP, SCCP (Skinny),Oracle / SQL*Net (V1/V2), Microsoft RPC / DCE RPC, Microsoft Networking, NFS, RSH, SunRPC / NIS+, X Windows (XDMCP)	
14	Layer 2 transparent firewalling	Should provide layer 2 transperent firewalling functionality	
15	High availability support	Should support Active/Active and Active/passive stateful failover	
16	IPSec and WebVPN services	Should provide IPSEC and Web VPN services	
17	VPN clustering and load balancing	Should support VPN clustering and load balancing	
18	Dedicated OOB management port	Should have min. 1 dedicated ethernet port for out-of-band management	
19	Security contexts (included/maximum)	Should provide minimum 2 virtual firewalls	
20	Additional Support	Should support Network Antivrus/Anti Spyware, phising, Anti spam, Url Filtering	
21	Management	Should be remotely managable through any standard web browser	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR WEB SECURITY GATEWAY (CONTENT FILTERING APPLIANCE)

SPECIFICATION NO - NS07H

S.No.	Features	Vendors Compliance (YES / NO)
1	No. of Appliance - **1**	
2	Make Offered -	
3	Model Offered -	
1	Should be appliance based system with hardened OS based on linux kernel.	
2	Should have redundant power supplies, hard disk, etc	
3	Should have min. 2 Nos of 100/1000Mbs Ethernet ports	
4	Should have min. 2 Nos. of 1000Base SX fiber ports	
6	Should be able to support min. 5000 concurrent users	
7	Should be able to handle **450Mbps http traffic & 20,00,000** SMTP email messages per hour	
8	Web Filtering : Should provide inbuilt database based filtering of URLs	
9	Should provide antivirus that blocks both known and unknown viruses, spyware, trojans, worms, botnets, zombies, phising attacks, malware, etc.	
10	Should support ICAP	
11	Should provide protection at Internet Gateway against viruses, spyware, spam, phising, botnets, harmful URLs, etc	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR WEB SECURITY GATEWAY (CONTENT FILTERING APPLIANCE)

SPECIFICATION NO - NS07H

S.No.	Features	Vendors Compliance (YES / NO)
12	Should provide real-time scan for HTTP, SMTP, POP3, IMAP, FTP, and HTTPS protocols	
13	Should provide URL filters to block inappropriate URLs by category	
14	Should provide the facility to set web use polices for individuals or groups or company	
15	Should check realtime blacklists & block unwanted emails	
16	Should be rack mountable and should come with rack mount rails	
17	Should be managable remotely through any standard web browser	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR APPLICATION ACCELERATOR & SECURITY APPLIANCE

SPECIFICATION NO - NS08H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Appliance	**1**	
2	Make Offered		
3	Model Offered		
4	Device specifications	Should be an appliance based device for improving performance of web based applications, measuring end-user response time & and enforcing application security	
5	Ports	The offered appliance should have following ports from day one	
	5.1	Min 2 Nos. of 10/100/1000 Mbps Ethernet ports	
	5.2	Min. 2 Nos. of fixed 10/100/1000 Ethernet ports for out of band management.	
6	Should provide following features to improve response time of applications by 2-5 times		
	6.1	Request aggregation	
	6.2	FlashForwarding and browser cache management	
	6.3	Browser TCP multiplexing	
	6.4	PDF download optimization	
	6.5	Response redirection control	
7	Should provide following features to reduce bandwidth usage.		

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR APPLICATION ACCELERATOR & SECURITY APPLIANCE

SPECIFICATION NO - NS08H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
	7.1	Delta encoding	
	7.2	Dynamic browser caching	
	7.3	Dynamic image optimization (JPG, GIF, PNG)	
	7.4	Gzip/deflate compression	
	7.5	Flexible processing rules	
8	Should have following features to reduce CPU usage		
	8.1	Configurable dynamic caching	
	8.2	Load-based caching	
	8.3	Lazy request evaluation	
	8.4	Single sign-on optimizations	
	8.5	TCP connection multiplexing	
	8.6	SSL off-load and acceleration	
	8.7	Static caching	
	8.8	Extensible Markup Language (XML) off-load	
9	Should provide deep inspection firewalling of web applications to block following threats		
	9.1	Structured Query Language (SQL) injection	
	9.2	Cross-site scripting	
	9.3	Command injection	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR APPLICATION ACCELERATOR & SECURITY APPLIANCE

SPECIFICATION NO - NS08H

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
	9.4	Cookie and session poisoning	
	9.5	Application reconnaissance	
	9.6	Lightweight Directory Access Protocol (LDAP) injection	
	9.7	Buffer overflows	
	9.8	Directory traversals	
	9.9	Attack obfuscation	
	9.10	Application platform exploits	
	9.11	Zero-day attacks	
10	Should be possible to deploy in following modes		
	10.1	Out-of-band monitoring mode	
	10.2	Transparent inline mode	
	10.3	Application of rules in active and passive	
	10.4	Auto-recommendation of security rules	
11	Reporting	Should provide a GUI based reporting engine to measure end-to-end application performance The reporting engine should provide detailed graphical performance-monitoring results. The reporting tools should be compatible with Crystal reporting	
12	Management	Should provide out of band management through a standard web browser or external management station with minimum two 10/100 ethernet port.	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR PRINT SERVER

SPECIFICATION NO - MS01L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Print Servers	**72**	
2	Make Offered		
3	Model Offered		
4	Support Pack for lease period	Support Pack for 5 year (labour/parts/on-site) warranty	
5	Network Interface	10/100 Mbps Ethernet Interface with autosensing dual speed minimum TCP/IP support	
6	Ports	2 parallel and 1 USB	
7	Bidirectional communication	Should have Bidirectional communication	
8	Remote management	Should have Telnet support	
9	OS Compatibility	Windows 9x,Windows NT 4.0, Windows 2000, Windows XP,Unix, Redhat Linux 7.2 and above	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 42 U RACK & ACCESSORIES

SPECIFICATION NO - MS02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Racks	**5**	
2	Make Offered		
3	Model Offered		
4	Mounting	Floor Standing	
5	Height	42 U	
6	Dimensions (Width X Depth)	800 x 1000 mm	
7	Doors	Lockable front door of toughened tinted glass or perforated steel & lockable vented rear door of steel	
8	Side Panels	Side Panels with Slam Latches and Key Locks	
9	Top & Bottom Covers	Top & Bottom Covers with cable entry gland plates	
10	Stationary Shelves	3 No. of Stationary Shelves	
11	Sliding Rotary Keyboard Tray	1 No. of 19" Sliding Keyboard Tray	
12	Equipment Mounting Angles	One pair of Equipment Mounting Angles to provide 19" mounting positions	
13	Cooling Fans	Min. 4 Nos. of Cooloing Fans (230VAC, 90 CFM) in top mounted Fan Housing Unit	
14	Mounting Hardware Packet	Captive Mounting Hardware (10 Pkts)	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR 42 U RACK & ACCESSORIES

SPECIFICATION NO - MS02L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
15	PDU	Min. Two independent & redundant vertical or horizontal power strips each containing 10 Nos. of 5/15A IEC320 C14 & 2 normal type sockets, a fuse, indicator lamp and 15A Switch	
16	Cable Management accessories	Two horizontal , two vertical cable managers & two vertical Cable Channels with cabling loops	
17	Castors	4 castors with foot operated brakes	
18	Earthing Kit	Copper earthing kit (bars, straps, continuity kit, etc)	
19	Color	Preferred Graphite black	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR Miscellneous Items

Specification No.	Product Discription	Nos.	Vendors Compliance (YES / NO)
MS03L	**External DVD Writer** USB based with minimum 8x Speed	10	
MS04L	**External CDRW / DVDROM Combo Drive** USB based with minimum 48x Speed	20	
MS05L	**Ultrium Auto Loader** (OEM Make) (Rack Mount) with 1 no. of LTO (Generation 3) drive (400/800GB) and min. 7 nos. of media slots with necessary SCSI Controller (to be installed on server) & cable to connect to server, necessary backup software for automated backup and 10 media packs & one cleaning cartridge. The Ultrium Auto Loader must work with Windows 2000 or higher, Red Hat Linux 7.2 or higher & Unix Systems	8	
MS06L	**16 port KVM switch with integrated LCD monitor, keyboard and mouse** (touchpad) and min. 8 ft. length cables for connecting 16 servers. Should be rackmount and should come with rack rails.	12	

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR TOUCHSCREEN KIOSK

SPECIFICATION NO - MS07L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	No. of Touchscreens	**10**	
2	Make Offered		
3	Model Offered		
4	Processor	Intel Pentium 4 with Speed 3.4 GHz or above	
5	MemoryType	Flash ROM and DDR SDRAM	
6	MemoryType	1 GB Flash Memory, 1 GB DDR SDRAM	
7	Keyboard	USB/PS-2 Metallic (Rugged) Keyboard	
8	Power Supply	Inbuilt SMPS based Power Supply (input voltage 100 to 240 VAC) 50 Hz.	
9	Ports	4 USB, 1 Serial, 1 Parallel, 1 PS-2, 1 RJ45	
10	Network Connectivity	10/100 Base T Fast Ethernet wireless enabled 802.11 (b/g)	
11	Network Protocol Support	TCP/IP with DNS and DHCP, PPP, Direct Connection through RS232,PPPoE, PPTP, I2TP,PXE SNTP, SNMP.	
12	Audio	Full 16 bit Stereo over internal speakers with / external Speaker with provision of Audio out / Microphone ports.	
13	Operating System	Licensed Windows X P embedded with SP2.	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR TOUCHSCREEN KIOSK

SPECIFICATION NO - MS07L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
14	Remote Management Software Support.	Administration suite using industry standard protocols, administrator should be able to control the following terminal settings based on user privileges like Network Settings, Firewall, Display Settings, Input Parameters, Internet Options, Power Options, Regional Languages etc. It will also provide common functions like Wake-On-LAN, Restart, Backup and Restore options etc.	
15	Security	Enhanced User Security Policy: User privileged Security Access to view or access Control panel applets Enhanced Write Filter options.	
16	Monitor	17" TFT Screen with 1024x768 Resolution @ 60Hz.	
17	Touch Screen Resolution	16 K x 16 K	
18	Input Method	Finger	
19	Optical Clarity	More than 85% light transmission at 550 nm	
20	Coating	Protective Glass overcoat for protection of sensor by resisting scratches and increasing durability.	
21	Touch Contact Requirement	3 ms for finger print	
22	Surface Scratch hardness	Able to withstand more than 10000 grams of force per balance beam scrape adhesion mar tester	
23	NEMA Rating	NEMA Scalable	
24	Gasketing	Complete water resistant seal	
25	Cleaning	Water, Isopropyl Alcohol and similar no-abrasive cleaners.	

Place   (Signature of Bidder)

BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR TOUCHSCREEN KIOSK

SPECIFICATION NO - MS07L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
26	Endurance Test	Capability to withstand over 225 million mechanical touches without noticeable degradation to surface.	
27	Surface Obstructions	Tourch screen operations shall be unaffected by surface obstructions such as dirt, dust, grease, smoke butter etc.	
28	Operating Temperature Range	10 to 65 Degree Celsius	
29	Accuracy & Precision Area	Reported touch coordination are within 1.0% of true position.	
30	Glass Thickness	0.125" (+ or -- 0.01) Typical.	
	Cabinet for Touch Screen Kiosk		
	a. Suitable for indoor use		
	b. Outlet dimension shall be capable of housing Thin client, Touch Screen and 500 VA UPS.		
	c. Metal Cabinet made from high grade steel plates should be rugged, sturdy and durable		
	d. Should have cooling fans (proper size) & internal power distribution box.		
	e. Display Angle - 20 degree		
	f. Optional rear or side door		
	g. Front side speaker provision.		
	h. Adjustable levelling legs for adjustment on uneven floor surface with folding caster and brakes.		
	I. CNC based designing and manufacturing of Cabinet.		
	j. Base / Structure should be in metal frame.		
	Bidder shall be required to finalize Kiosk Cabinet Design in consultation with BHEL officials. Manufacturing of kiosk cabinet shall be after approval of design by BHEL.		

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR CHASSIS (BLADE SERVER)

SPECIFICATION NO - MS08L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
1	NO. OF Enclosure	As required for the blades offered	
2	Make Offered		
3	Model Offered		
4	Form Factor	Upto10 U Form factor per chassis with all redundancy features (Hard Drives, Power, Cable Management). The requisite number of Enclosures to be configured to populate the required Blade Servers mentioned and Storage/Expansion Units.	
5	Redundancy	Mechanical Devices such as Hard Disks, Fans and Power Units should be completely Hot Swappable and Redundant to ensure High Availability.	
6	Blade Server support	The enclosure offered should support Intel Xeon based Blade severs within the same enclosure.	
7	Management Software	1) Web based management software with GUI interface that enables inventory control with component serial no.s 2) Remote image based OS deployement software 3) Performance management software with graphical representation of key performance parameters	
8	Network Connectivity	Necessary Ethernet Patch Panels (in redundant mode) to be configured	
9	SAN Connectivity	Necessary Fibre Pass Through Units to be configured to enable connectivity to the external SAN switch for the Blade servers required to be on the SAN	

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR CHASSIS (BLADE SERVER)

SPECIFICATION NO - MS08L

S.No.	Features	Detailed Specifications	Vendors Compliance (YES / NO)
10	Power	Guaranteeing complete availability even on failure of any 2 power units across the enclosure. Sufficient Power to run a fully loaded enclosure in N+N redundant mode.	
11	KVM/CD/USB/Floppy	To be enabled Virtually over IP for Remote Access or Provided Locally	

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
SPECIFICATION FOR SOFTWARES

Specification No.	Product Discription	Nos.	Vendors Compliance (YES / NO)
SW01H	Microsoft Windows 2003 AS with Media	**27**	
SW02H	Red Hat Enterprise Linux AS Standard v.4 or latest with 5 years subscription and support (for updates & upgrades, telephonic / web support) from the Principal OEM	**2**	
SW03H	Red Hat Enterprise Linux ES Standardv.4 or latest with 5 years subscription and support (for updates & upgrades, telephonic / web support) from the Principal OEM	**5**	
SW04H	Microsoft SMS Enterprise Edition License & Software Assurance	**1**	
SW05H	Microsoft Client Access License & Software Assurance for SW01H	**500**	
SW06H	Microsoft Client Access License & Software Assurance for SW04H	**500**	

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
ADDITIONAL SPECIFICATIONS

SPECIFICATION NO - ADDONS

S.No.	Specification No.	Detailed Specifications	Nos.	Vendors Compliance (YES / NO)
1	PC01L	PC - General with TFT 2 GB RAM in place of 1 GB RAM	**20**	
2	WS01L	Graphic Workstation - P4 a) 4x1GB RAM in place of 2x1GB RAM b) 1x146GB unformatted ultra 320 SAS 15K rpm in place of 1x160GB unformatted SATA 7200 rpm c) nVidia Quadro FX3500 with 128Mb RAM in place of nVidia Quadro FX560 with 128MB RAM	**12**	
3	SR01H	Server - 2 Way Rack 5 x 146 GB Hard Disk in place of 5 x 73 GB Hard Disk	**1**	
4	SR02H	Server - 4 Way Rack 4 x 146 GB Hard Disk in place of 4 x 73 GB Hard Disk	**1**	
5	NS02H	Network Switch - Layer 2 (48 Port) with 2 nos. of Copper 1000Base-T Uplink Ports **IN PLACE OF** Network Switch - Layer 2 (48 Port) with 2 Nos. of 1000Base SX Ports	**1**	

Place

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BHARAT HEAVY ELECTRICALS LTD
CORPORATE INFORMATION TECHNOLGY, NOIDA
ADDITIONAL SPECIFICATIONS

SPECIFICATION NO - ADDONS

S.No.	Specification No.	Detailed Specifications	Nos.	Vendors Compliance (YES / NO)
6	NS03H	Network Switch Layer 2 with 24 10/100Base T ports & 2 fixed 1000BASE-SX uplink ports **IN PLACE OF** Network Switch Layer 2 with 24 10/100Base T ports & 2 fixed 10/100/1000BASE-T uplink ports	1	
7	NS05H	Network Switch Layer 2 with 24 10/100Base T ports (PoE) & 2 fixed 1000BASE-SX uplink ports **IN PLACE OF** Network Switch Layer 2 with 24 10/100Base T ports & 2 fixed 10/100/1000BASE-T uplink ports	1	
8	SW02H	Red Hat Cluster Suite with 5 years subscription and support (for updates & upgrades, telephonic / web support) from the Principal OEM **IN PLACE OF** Red Hat Enterprise Linux AS Standard v.4 or latest with 5 years subscription and support (for updates & upgrades, telephonic / web support) from the Principal OEM	1	
9	SW03H	Red Hat Global File System v 6.1 or latest with 5 years subscription and support (for updates & upgrades, telephonic / web support) from the Principal OEM **IN PLACE OF** Red Hat Enterprise Linux ES Standardv.4 or latest with 5 years subscription and support (for updates & upgrades, telephonic / web support) from the Principal OEM	1	

Place

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