

M.P. State Electronics Development Corporation Ltd.
(A Govt. of M.P Undertaking.)

TENDER DOCUMENT

For

**Global Positioning System (GPS) based Vehicle Tracking system for the Food and Civil Supplies
Department of the Government of Madhya Pradesh**

(Tender no. MPSEDC/MKT/2011/207)

(All pages of this document except for Commercial-bid to be submitted in original duly signed on each page along with the technical bid envelope. The Commercial bid in original is to be enclosed in a separate sealed envelope)

M.P. State Electronics Development Corporation Ltd.
(A Govt. of M.P Undertaking.)
147, Zone-I, M.P. Nagar, Bhopal-462011 (M.P.)
Ph.0755-2769816, 2769823
Fax: 0755-2769824

Technical Bid **INVITATION FOR BIDS**

Addl. Chief General Manager, MPSEDC Ltd., Bhopal invites sealed bids, under two envelopes system, from bidders for GPS based vehicle tracking system for the Food and Civil Supplies Department of the Government of Madhya Pradesh. Interested bidders may obtain further information from the office of MPSEDC Ltd. Bhopal Bids are invited for the work mentioned hereunder:

S.N	Items	Description
a	Scope of Work	GPS based Vehicle Tracking System for the Food and Civil Supplies Department of the Government of Madhya Pradesh The details of the Scope is Given in Annexure 1
b	Cost of bid document	Rs.5000.00 (non-refundable) by Demand Draft/Cash
c	Postal charges	Rs.100.00(MPSEDC LTD. shall not be responsible for any postal delay)
d	Pre bid meeting	14.10.11 at 3 PM
e	Sale of bid documents	Date 7-10-11 to 24.10.11 (Between 10.30 AM to 5.30 PM)
f	Last date of submission of bid	Date 25.10.11 up to 3.00 PM.
g	Date of opening of technical bid	Date 25.10.11 at 4.00 PM.
h	EMD	Rs.2,00,000/- in the form of Demand Draft or Bank Guarantee in the format that can be obtained from MPSEDC payable to/made in the name of MPSEDC Ltd Bhopal
i	Place of opening of bids:	Office of MPSEDC LTD., 147, Zone-1, Maharana Pratap Nagar, BHOPAL (M.P.)
j	Address for communication:	MPSEDC LTD., 147, Zone-1, Maharana Pratap Nagar, BHOPAL (M.P.)

Note; Tender can be downloaded from the website www.mpsedc.com. In case tender form has been downloaded from the website, the bidder will have to enclose a Demand Draft of Rs.5000/- (Rupees Five thousand only) of any scheduled bank in favour of MPSEDC Ltd. payable at Bhopal along with the tender.

***Any future Corrigenda/Information shall be posted only on our website www.mpsedc.com**

Letter for Submission of tender

To
MPSEDC
147 Zone I, M P Nagar
Bhopal (M P)

Dated ----- ,2011.

Ref: "GPS based Vehicle Tracking System for the Food and Civil Supplies Department of the Government of Madhya Pradesh against tender No MPSEDC /Mkt/2011/ 207 dated 5.10.11 due for opening on 21.10.11

Dear Sir,

Having examined the tender document relating to the GPS based Vehicle Tracking System for the Food and Civil Supplies Department of the Government of Madhya Pradesh as detailed in your tender, Terms & Conditions and scope of procurement, Specifications etc., and having understood the provisions and requirements relating to the procurement and all other factors governing the tender, We hereby submit our offer for the GPS based vehicle tracking system for the Food and Civil Supplies Department of the Government of Madhya Pradesh in accordance with terms and conditions and confirm our acceptance to execute the order within the time period specified in the tender document, at the rates quoted by us in the accompanying Technical & commercial Bid.

If, after the tender document is accepted, we fail to complete the commissioning of the items as per the order; we agree that, M/s. MPSEDC LTD. Bhopal shall have full authority to forfeit the earnest money and cancel our order with no obligation on their part.

We confirm having deposited earnest money of Rs 2,00,000/- (Rupees Two lakh only) by Demand Draft No.....dated drawn onBank Branch attached here to, and general information required is as per annexure attached.

We further confirm that –

- i. We have successfully executed orders of similar nature and we have sufficient experience and financial strength in handling orders of this value.
- ii. We have sufficient qualified manpower and necessary materials and after sales support to execute the order efficiently in the specified time schedule.
- iii. The quoted rates shall be valid till the completion of the order but not less than 90 days.
- iv. We further confirm that all chapters of the tender documents have been read, understood and signed and there is no deviation/discrepancy

Signature of the Bidder
With stamp and date

GENERAL INFORMATION AND EMD DETAILS

1	EMD /Bank Guarantee Details DD No and date: Amount in Rs. Name of the Bank:	
2	Name and Address of the Bidder: (Should have an office in Madhya Pradesh or should promise to open in one month if the work is allotted)	
3	Contacts:	
4	Telephones:	
5	Fax:	
6	E-mail:	
7	Mobile No:	
8	Category of the Bidder (Whether company, partnership firm or Proprietary concern)	
9	Name of Chief Executive Officer and Telephone No.	
10	Year of Establishment	
11	Sales Tax /Commercial Tax/ CST nos.	
12	Income Tax PAN/GIR No.	
13	Yearly Turnover of the Last 3 years.	
14	Name and Address of the Banker	
15	List of major Clients and the size of orders executed	

Note: Separate sheets may be attached wherever necessary.

Signature of the Bidder
With stamp and date

Terms and Conditions

Contents of Bidding Documents for GPS based Vehicle Tracking System for the Food and Civil Supplies Department of the Government of Madhya Pradesh, the bidding procedures and the terms of contract are prescribed here in under:

1 Eligibility Criteria:

- a. The Bidder must be a Company/Propriety or Partnership Firm in the Business of GPS/GIS based works
- b. Bidder must have executed at least two GPS based Vehicle Tracking system orders of value Rs. 50 Lakh or more and at least one single order worth of Rs. 80 lakh of GPS based Vehicle Tracking system must have been executed by the bidder. (Attach order copy)
- c. The company must have an average turnover of Rs 1.00 Crore in the past three years from the business of GPS based vehicle tracking system or GIS and GPS based monitoring system of any description (Submit balance sheet of the previous years for the purpose of verification) or engaged in the business of Information Technology. Certificate from the Chartered Accountant must be submitted if the Bidder has other businesses in the company.
- d. The company must be profitable and must have positive net worth.

2. Amendment in Bidding Document by the Competent Authority

At any time prior to the deadline for the submission of bids, the competent authority may, for any reason, whether on its own or in response to a clarification requested for by a prospective bidder, modify the bidding document by way of amendment(s).

The prospective bidders having received the bidding documents will be notified of the amendment(s) so made in writing or by Fax and such amendments shall be binding on them.

In order to allow reasonable time to the prospective bidders for taking into account such amendment(s), in the preparation of their bids, the competent authority, at its discretion, may extend the deadline for the submission of bids.

3. Bid Price

The bidders shall indicate the price on the prescribed Price Schedule, including item-wise and final Bid Price of the items listed

Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and shall not be subject to variation on any account.

A bid submitted with an adjustable price will be treated as non-responsive and rejected.

4. The EMD may be forfeited:

If a Bidder withdraws its bid during the period of bid validity specified by the bidder on the bid Form: or In case of a successful Bidder, if the Bidder fails:

- (i) To accept the order
- (ii) To furnish performance security
- (iii) If the supplier, after accepting the purchase order fails to deliver the material/services as per the order.

5. Any alterations, erasures or overwriting shall be valid only if the person or persons signing the bid initial them.

6. Technical requirements

The technical specifications as per Annexure V are the minimum configuration required. Higher specifications may be considered but no price weight-age for higher specifications shall be considered.

7 Service support requirement

Has been detailed at Annexure I Successful bidder will ensure that the GPS device as prescribed by MPSEDC is installed in the vehicle within Three days of the Call Centre (155343 phone number and the CRM system known as Telesamadhan) logging a request of the vehicle owner.

- b. The service support will require strengthening to suit the concerned Departments requirement. The acceptance for doing so with no extra cost is to be submitted along with the bid.

SUBMISSION OF BIDS

8. Sealing and Marking of Bids

The bidders shall submit EMD, technical bid (containing the technical specifications offered and original copy of commercial bid in separate sealed envelopes all the above envelopes shall be sealed in one main envelope). All the envelopes should be distinctly marked EMD, technical bid, and commercial bid.

9. Deadline for Submission of Bids

Bids must reach the competent authority at the address specified but not later than the time and date specified in the invitation of Bids. In the event of the specified date for the submission of bids being declared a holiday for the office of the competent authority, the bids will be received up to the appointed time on the next working day.

10. Late Bid

Any bid received after the deadline for submission of bids prescribed by the competent authority, will not be accepted and returned unopened to the bidder.

BID OPENING AND EVALUATION OF BIDS

11. Opening of Bids

Since it is a Two-bid system, Technical bid and EMD envelope will be opened first by the Committee constituted for this purpose. If the technical bid specifications offered, EMD and deviations asked (if any) are found in order, the Committee will open commercial bid only for the eligible bidders.

The Committee will open the bids, in the presence of Bidders' representatives who choose to attend on the date specified at the following location:

M.P. State Electronics Dev. Corporation Ltd
147, Zone-I, Maharana Pratap Nagar, BHOPAL-462011

Prospective Bidder representatives shall sign a register evidencing their attendance.

In case, the commercial bid is not opened on the same or next day of opening of technical bid the Committee may decide to open the commercial bid on subsequent dates. In such case the date, time and place of opening of commercial bid will be intimated to the bidders or their representatives.

12. Preliminary Examination

Before starting evaluation, the bids will be examined to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order. In case of computational error the basic price will prevail.

If bid is determined as not substantially responsive, the competent authority will reject it and only the substantially responsive commercial bids will be considered.

The process of evaluation of bid is as follows:

- (i) The Committee, appointed by the MPSEDC LTD, will first verify that the Bank Draft for Bid Security is in order and as per requirement of the bid. The Committee will examine the bid on Eligibility Criteria as specified. The scrutiny of technical proposals will be based on the Evaluation Criteria provided in this bid document.
- (ii) The commercial bid will be opened only for the proposals, which are found eligible and technically acceptable by the Committee and approved. On the day specified for the opening of bid, the Committee, appointed by the MPSEDC LTD., will open the commercial bids of eligible bidders and scrutinize the same minutely.
- (iii) After scrutiny, the MPSEDC LTD. After having examined the proposal may accept the same or accept the bid price of any other bidder found suitable or reject all or any proposal. The decision of the MPSEDC LTD. In this regard shall be final and binding.

13. Performance Security

The successful bidder shall be required to submit performance guarantee equivalent to 10% of the order value for the satisfactory performance/completion of the complete order (5 years), in the form of bank guarantee with MPSEDC LTD or Concern deptt.

14. Contacting the Competent Authority

Any effort on part of a Bidder to influence the Competent Authority or members of Technical/Monitoring committee, in its decisions on bid evaluation; bid comparison or contact award may result in rejection of the bidder's bid.

15. Payment:

Payment: Payment shall be released by MPSEDC as per details given in Annexure III:

16. General

- (i) Bid form shall be duly filled in, signed and complete in all respects
- (ii) The price should be inclusive of all expenses except taxes which should be indicated separately.
- (iv) The successful bidder will install the system as detailed in the Annexure II within 120 days of the receipt of the work order from MPSEDC.

- (i) Penalty- In case of delay in execution of the order, the concern MPSEDC may as its option either:

Recover from the supplier/contractor as agreed towards liquidated damages a sum @ ½% (half percent) of the price of any part of the project not implemented for a week, or Part thereof subject to maximum of 10% (ten percent). OR get the work completed from elsewhere on account and at the risk of supplier, the part not delivered.

OR

Cancel the contract reserving concern MPSEDC right to recover damages

The inner and outer envelopes shall be addressed to the competent authority at the following address:

The Additional Chief General Manager
M.P. state Electronics Dev. Corpo. Ltd
147, Zone-I, Maharana Pratap Nagar, BHOPAL-462011

The envelopes shall also indicate the name and address of the Bidder to enable the bid to be returned unopened in case it is declared "late."

If the outer envelope is not sealed and marked, the competent authority will assume no responsibility for the bids, misplacement or premature opening.

Telex; cable facsimile or fax bids will be rejected.

Conditional bids are liable to be rejected.

MPSEDC LTD. Does not bind itself to accept the lowest or any other tender and reserve the right to accept or reject any or all the tender in full or in part without assigning any reason.

Bid Submission Format

S.No	Description	Monthly Guaranteed Revenue (MGR) in Figures	Monthly Guaranteed Revenue in Words
1	<p>The cost to MPSEDC as detailed in the Scope (Annexure 1) and the Hardware and Software, manpower and GPRS service as detailed in Annexure 2 should be converted into a monthly guaranteed revenue which will be paid after the Data Center is established and all the trucks are fitted with GPS and on compliance with the SLA as defined in Annexure 3. It should be noted that amount will be deducted from the monthly guaranteed revenue if the Bidder fails to comply with the SLA.</p> <p>The tenure of the contract will initially be for the period of Five years and can be extended for a period of Three years.</p>		
	Total Project cost for Five years = MGR*5*12		

Scope of work

GPS based Vehicle Tracking system for the Food and Civil Supplies Departments and other Departments that may become clients. The selected bidder will be required to perform the following tasks:

1. Establish a data centre at Bhopal in the space provided by MPSEDC and with specifications as detailed at Annexure IV.
2. Provide and customise software as per the following details:
 - a. Provide Map Data of Madhya Pradesh with the following details as selectable layers with their names superimposed (on selection);
 - i. Geographical Boundaries
 - a) State,
 - b) District,
 - c) Block,
 - d) Tehsil,
 - e) Village Panchayat
 - f) May have to update the boundaries if new administrative entities are created by the government;
 - ii. Name as point data of the Administrative headquarter;
 - iii. Roads with their names on mouse over;
 - iv. Point data relevant to the Food and Civil Supplies Department (this is not an exhaustive list and more may be added)
 - a) Source (FCI and other storage) and destination (Shops and temporary storage) of food and kerosene;
 - b) Data relating to the vehicles engaged in the transport & distributions of food grains and Kerosene in the State.
 - c) Point data of 4 other Departments who may opt to become client as a layer;
 - b. Real time report of the movement of the GPS enabled vehicle on the map to the users based on their privileges;
3. Create user management system on the software with rights and privileges as defined by the Departments;
4. Rights to the user to enter the Vehicle Data for monitoring together with the source, destination, track to be followed. The formats (tentative) will be provided to the Bidder during the prebid meeting. The scope of the development of the software would not be restricted to the formats made available and the user departments may modify, add and delete a format as per requirement.
5. The bidder may be required to integrate the system so developed with enterprise GIS software that the State may develop.
6. The Bidder will be required to inspect, certify for compliance with specification, seal and make tamper proof a GPS device provided by the vehicle owner on the vehicle to be used for transporting food material and kerosene.
7. The bidder will be required to randomly and periodically (6 monthly) inspect the GPS and certify for it being tamper proof and comply to specifications.
8. The bidder will be required to provide SIM for enabling GPRS on the GPS Device and will have to make payments for the periodic bill ;
9. The Bidder will be required to provide reports as may be required by the Departments.
10. In case of damage to the GPS device already installed, the bidder shall have to submit a report within 24 hours of its status and monitor its replacement or otherwise by the vehicle owner.
11. The tenure of the contract will initially be for a period of five years stating from the date when the Data Centre becomes operational and 100 trucks are fitted with GPS and have commenced communication with the central server. The contract can be extended for a period of 3 years based on mutual agreement and satisfactory performance.

TECHNICAL SPECIFICATIONS and cost sheet for the Datacenter

Sl.No	Name of the Hardware and Specification	Number	Description of the product offered	Unit Cost	Total Cost
1	Chassis for Blade Server can accommodate 14 or more Blades Page 13 & 14	1			
2	Blade Servers Intel Xeon Page 15	3			
4	Router Cisco Page 17 and 18	1			
5	Switch Page 19	1			
6	KVM Switch	1			
7	Storage System (SAN + NAS) 5 TB Page 19 and 20	1			
8	UPS 5KVA with 1 hrs backup Page 21	1			
9	Tape Drive Page 19	1			
10	Operating System Server Class	3			
11	Database Processor Licence	2			
12	Map Server	1			
13	Antivirus (Server)	1			
14	Map Data Server	1			
15	Customised software with user management	1			
16	Cost of SIM	2000			
17	Monthly rental for GPRS Charges	2000 X 12 X 5			
18	Manpower for Data centre Management	2 X 12 X 5			
19	Installation (tamper proof) of GPS device provided by the vehicle owner	2000			
20	Periodic inspection of the GPS device	2000 X 2 X 5			
	Any other Item/Items required to complete the system (Specify)				
Total Cost of Data centre, GPRS and installation and inspection of GPS					

Service Level Agreement (SLA): SLA Management Process:

S.No	Item	Uptime Required	Penalty
1	Data centre Uptime	99.90% uptime will be required and will be calculated on a monthly basis. Scheduled Downtimes will be allowed only during 22:00 Hrs to 03:00 Hrs of the consecutive days. Scheduled Downtime will be allowed only after seeking written permission and will usually take place on the night of Sundays. The allowed 00.10% Downtime will accrue as 7 Hours and 20 minutes in a month of 30 days. This allowable Downtime will not accrue on a single day and in a day the maximum time that will be continuously allowed for Data Centre Downtime will not be more than 2 Hours.	<ol style="list-style-type: none"> 1. For every hour of extra Downtime other than that allowed, Rs.5,000.00 will be deducted from the monthly guaranteed revenue. 2. If the Downtime on a single day exceeds 8 Hours, Rs.1,00,000.00 lakh will be deducted from the guaranteed revenue. 3. If the Downtime exceeds 1 day, Rs.2,00,000.00 will be deducted from the guaranteed revenue for each 1 day of Downtime. 4. If the Downtime exceeds 3 days, the monthly guaranteed revenue of the Bidder will be forfeited. 5. If the Downtime exceeds 1 week, the Performance Bank Guarantee will be forfeited and the contract will be terminated and the assets will become the property of MPSEDC.
2	GPS and GPRS Uptime	<ol style="list-style-type: none"> 1. The vehicle owner will submit a request for configure the vehicle fitted with GPS equipment through the call centre. The Bidder should configure GPS device alongwith installation of SIM within 3 days of the request transferred to the Bidder and should get the device inspected by an authorised person of the concerned Department. 2. The Bidder should inspect the GPS equipment within 6 calendar months of the installation of device. 3. The Bidder should ensure the installed GPS device must communicate with the central server through GPRS at least once every day. 	<ol style="list-style-type: none"> 1. For every day of delay in configuration, an amount of Rs. 100.00 will be imposed as penalty for an individual request for configuration. 2. For every one week of delay in inspection of the GPS equipment beyond six calendar months, an amount of Rs. 100.00 will be imposed as penalty. 3. On the GPS device that is on transportation duty not communicating with the central server above 24 Hours, a penalty of Rs. 100.00 per day will be imposed on the Bidder.

Blade Chassis

Item	Description
Chassis Properties	Solution to house the required number of blade servers in smallest number of enclosures. Support for two socket and four socket blades in the same enclosure in a max of 10U blade chassis`
	Same enclosure should support Intel Xeon and AMD Opteron based blades.
	Should support simultaneous housing of Ethernet, FC, iSCSI, IB interconnect fabrics offering Hot Pluggable & Redundancy as a feature
	Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. Software should save the Reports for further analysis.
	Should provision for a single console to monitor multiple enclosures
	Should support simultaneous remote access for different servers in the enclosure
	Enclosure should be populated in a way to include provision for 10% additional no. of servers being provided initially.
Interconnect	2 * 10 Gbps Ethernet switch with at least 8 uplink external ports
	Fibre channel Pass-through for FC connectivity
	Support for at least 3 redundant interconnect bays with support for Ethernet, FC, IB fabrics.
	The enclosure should be populated fully with power supplies of the highest capacity of the Chassis. Power supplies should have redundant configuration. Should offer choice of a single phase or 3 phase power subsystem for flexibility in connecting to Hardware Installation power enabled with technologies for lower power consumption
Power Supply	Chassis to be populated with adequate number of fans/blowers for total load on full capacity of the chassis.
Cooling	Each blade enclosure should have a cooling subsystem consisting of redundant hot pluggable fans or blowers enabled with technologies for improved power consumption and acoustics
Warranty	3 years comprehensive warranty, 24 x 7 supports with 4 hrs response time.
Rack for enclosure	42U standard rack with sufficient cooling fans and power distribution unit appropriate ratings for the blade enclosures should be provided
Management Software	Software Licenses for a fully populated Blade Enclosure should be given.

Item	Description
	Provide proactive notification of actual or impending component failure alerts. Should support automatic event handling that allows notification of failures via e-mail.
	Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes
	Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. Software should save the Reports in some format for further analysis.
	Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.
	The server performance monitoring software should be able to detect, analyzes, and explain hardware bottlenecks. Also it should be able to log the data over time and allow it to replay the same in a short time frame for performance analysis.
	User friendly GUI/ console-based deployment to set up and install multiple OS and application configurations in individual blade server.
Deployment Software	Comprehensive web enabled system management tool that monitors the system health, environment, critical action etc, With its own data engine to store status reports, alerts and error notifications ,Complete Administration of the blade enclosure from a standard web-browser With event logging, detailed server status, alert forwarding, Remote graphical console, remote power control / shutdown, virtual floppy and CD for remote boot and configuration, virtual text and graphical control, automatic IP configuration via DHCP/DNS/WINS with the blade system should have the capability of managing all the blades in the Enclosures Simultaneously capable of monitoring both physical and virtualized environments with single sign-on capability for all devices in the enclosure

Server (Blade)

Item	Description
Processor	2 * Intel Xeon Quad Core 5670 (@ 2.93 GHz) Processor module
	Server class chipset featuring Nehalem processors to be capable of supporting at least two processors.
Memory	24 GB DDR3 RDIMMs memory and scalable to 196 GB.
	Should support Advanced memory protection technologies like ECC.
Local Disk	2 * 300 GB Hot pluggable SAS Hard Disk
	Storage controller capable of providing RAID 0, 1 configurations
Ethernet Network	Dual port 10 Gbps Ethernet port with TOE per server
Fibre Channel HBA	Dual Port 4 Gbps FC HBA mezzanine card
Operating System	The system should be supplied with Red Hat Enterprise Linux 5 Advanced Platform.
Supported Operating System	Should support Industry-led operating system platforms including Windows Server 2003,2008, Red Hat Enterprise Linux, Oracle Enterprise Linux, Sun Solaris, Virtualization software like VMware
Management	Should provide remote management capable of providing graphical interface, virtual media and multi-factor authentication.
	Server management software capable of providing role-based security, alerts of critical component failure (Hard drive, memory, CPU) and notify the same using email, pager, SMS.
	Should provide for a 3 year Pre-Failure hardware warranty with 4 hour response times.
	Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes
	Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. Should support the reports to be saved in HTML, CSV or XML format.
	Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.

Router

Features	Specifications Required
Hardware Architecture	Multiple services (Data, voice, video)
	Technologies like IP, MPLS etc
	Modular Chassis
Interface / Slots	Ethernet Ports 2 x 10/100/1000 Mbps
	Shall support variety of interfaces like <ul style="list-style-type: none"> ▪ V.35 Serial ▪ E1 Port ▪ ISDN BRI ▪ Fast Ethernet
	E1 Interfaces ☐ 2 ports
	BRI ☐ 1 Ports
	Console port ☐ 1 numbers
Memory	RAM ☐ 128 MB upgradeable to 256 MB or more
	Inbuilt / Flash Memory ☐ 32 MB, upgradeable to 64 MB or more
Security	GRE and IP Sec 3DES/AES VPN for configuration of VPN tunnels.
	Encryptions, IP Sec 3DES/AES
	NAT, PAT
	Access control ☐ Multilevel
	Support for Standard Access Lists to provide supervision and control.
	Controlled SNMP Access using ACL on router to ensure SNMP access only to identified NMS/EMS
	Controlled SNMP access through the use of SNMP with MD5 authentication.
	Multiple Privilege Levels for managing & monitoring
	Support for RMON 1 & 2 groups as and when required
	Support for Remote Authentication User Service (RADIUS) and AAA
	PPP CHAP support. PAP (optional)
Routing Protocols	Static Routes
	RIPv1, RIPv2
	OSPFv2 and v3.
	BGP4, IS-IS
	Route redistribution between any of the above protocols
Protocols	PPP, Multi-link PPP
	HDLC
	IPv4, IPv6
	MPLS
	VRRP / HSRP
IP Accounting	Using external Hardware/software infrastructure
	Packet & Byte Counts

Features	Specifications Required
	Start & End Time Stamp
	Network Time Protocol
	Input & Output interface ports.
	Type of service, TCP Flags & Protocol
	Source & Destination IP addresses
	Source & Destination TCP/UDP ports
Management	Accessibility using Telnet, SSH, Console access.
	Easier Software upgrades through network, using FTP, TFTP, etc.
	SNMPv1, snmpv2/v3
	Configuration management through CLI, GUI based software utility and using web interfaces. GUI tools shall be provided.
	Event and system history logging functions shall be available.
	Support for Syslog Server required
	Support pre-planned timed reboot to upgrade Hardware to a new software feature and plan the rebooting as an off-peak time.
	Shall support boot options booting from remote Network node.
QoS	ToS, CoS, Queuing, prioritizing
	IP Precedence, Policy based routing
Debug & Diagnostics	Display of input and output error status on all interfaces
	Display of Dynamic ARP table
	Display of physical layer line status signals like DCD, DSR, DTR, RTS, CTS on all interfaces
	Display of Routing table
	Trace-route, Ping, extended PING
Physical	Router should be mountable on 19" Rack
	All necessary power cords, adapters, data cables, connectors, CDs, manuals, brackets accessories, wire managers, etc. should be provided
Performance	minimum 0.2mpps
Interface Requirements	1 x Channelised STM-1 2 x Gigabit Ethernet Interfaces

Network Switch

Features	Specifications Required
Interface /Slots	1 x 24 ports 10x100 FE
	2 x 1000Mbps ports base single mode or GE
VLAN features	IEEE 802.1Q VLAN encapsulation
	Dynamic Trunking Protocol (DTP) or equivalent
	Minimum 255 VLAN
Management	RS-232 Console port
	Accessibility using Telnet, SSH, Console access.
	SNMPv1, snmpv2/v3
Standards	IEEE 802.1x support
	IEEE 802.3x full duplex on 10BASE-T and 100BASE-TX ports
	IEEE 802.1d Spanning-Tree Protocol
Power Supply	Internal power supply 230 Volt 50Hz input
Miscellaneous	All necessary power cords, adapters, data cables, connectors, CDs, manuals, brackets accessories, wire managers, etc. should be provided

Tape Library

- Offered Tape Library shall support Native data capacity of 6TB (uncompressed) expandable to 12 TB (compressed).
- Tape Library shall provide web based remote monitoring capability.
- The Tape Library unit shall be configured with FC LTO Gen4 Tape Drives.
- Tape Drive Architecture in the Library shall conform to Ultra3 SCSI standards.
- Offered LTO4 drive in the Library shall conform to the Continuous and Data rate matching technique for higher reliability.
- Offered LTO4 drive in the library shall offer optional WORM support and embedded AES 256 bit Encryption support.
- Offered Library shall be provided with a hardware device like USB key, separate appliance etc. to keep all the encrypted keys in a redundant fashion.
- Offered LTO4 drive shall have native speed of 120MB/sec and a compressed speed of 240 MB/sec for 2:1 compression.
- Tape Library shall provide Fiber connectivity to SAN Environment.
- For optimal Performance. Tape Library shall provide 4Gbps Native FC interface connectivity to SAN switches.
- Tape Library shall be offered with minimum of 24 slots and barcode reader.
- Tape library shall support removable magazine and mail slot.

Storage System (SAN + NAS)

- The storage solution must be multiprotocol (CIFS, NFS, iSCSI, FCP,)
- The storage array should support industry-leading Operating System platforms & clustering including: Windows Server 2003 (Enterprise Edition), Windows Server 2008, Sun Solaris, HP-UX, IBM-AIX, Linux and Novell NetWare.

- Offered Array should have usable 5 TB capacities with protection against dual disk failure with no performance penalty on 300 GB FC / SAS drives and should be scalable to at-least minimum of 120 numbers of Drives. It should support FC / SAS and SATA Disk Drives
- The storage solution should support UNIX/firmware based operating system, dual, redundant, hot-pluggable; active-active array controllers.
- Storage array shall be based on latest PCI-e technology to ensure that there is no IO bottleneck.
- Controllers shall be true active-active.
- Offered Storage Array shall be configurable in a No Single Point of configuration including Array Controller card, Cache memory, FAN, Power supply etc.
- The storage array should have a minimum of 4 GB cache
- Storage box shall support atleast 20000 uncached IOPS.
- Storage box shall support more than 1200MB/sec sequential bandwidth.
- Offered Storage shall have minimum of 4 host ports and 2 device ports for Servers and disk connectivity.
- Offered storage shall be end to end 4Gbps.
- The backend bandwidth should be atleast 16 Gbps
- The storage array should support RAID 10 / 5 or 6.
- The storage array should support 4/6Gbps dual-ported 300/450GB hot-pluggable Enterprise FC/ SAS and S-ATA drives.
- Offered storage shall have Switching support for disk drives for better performance and lower arbitration.
- The storage array should support virtualization at the storage controller level.
- In case of power failure, storage subsystem shall have the Capability to keep the uncommitted information inside cache for at-least 72 hours or in a de-staged fashion.
- The Storage Array should support incremental resynchronization between Primary and Snapshot / clone volume.
- In case of Disk failure inside the storage subsystem, Disk re-building time shall not have any relation with the number of disk drives in the disk group for better recovery time and to avoid performance issues.
- Offered storage shall support non-disruptive online firmware upgrade for both Controllers and disk drives.
- Must support block-level incremental replication of data over TCP/IP using FCIP for DR
- Must be able to clone data rapidly while minimizing physical storage space consumption without using additional space upon creation of the clone; only changes to the clone's data should take up space
- Must be able to grow/shrink data volumes without application downtime
- Must support thin provisioning of data as part of the normal storage provisioning process; thin provisioning should not place any restrictions on storage volumes
- The system hardware must be upgradable for higher performance and capacity with no data movement or migration required.
- The system must simultaneously support NAS (CIFS and NFS) and SAN (FC and iSCSI) connectivity.
- The storage system's operating system must be certified by a qualified third party.

TECHNICAL SPECIFICATIONS UPS 5 KVA ON-LINE, 1 HOUR BACKUP

	Description/ Parameter	Specifications Required	Specification Offered
01	Input Voltage Range	230v + 15 –30 % Single Phase	
02	Input Frequency Range	47 Hz To 53 Hz	
03	Output Voltage Regulation	230 V ± 1%	
04	Output Frequency	50 Hz ±0.1% Free Running 50 Hz ± 6% synchronized to mains	
05	Output Power Rating	5000 VA/4000 Watts	
06	Output Waveform	Sine Wave	
07	Total Harmonic Distortion For Linear And Non-Linear Loads	Less than 5%	
08	Overload Capacity	110 % For 10 Minutes 150 % For 1 Minute	
09	Transient Response For 100% Step Load	±10% With Recovery Within 3 Cycles.	
10	Efficiency Overall Inverter	Better than 85% Better than 90%	
11	Crest Factor	3:1	
12	Operating Temperature	0-50 degrees Centigrade	
13	Relative humidity	0 % to 95%, non condensing	
14	Battery Charger	Built In Float Cum Boost Charger With CC & CV Mode. Should be able to charge a fully discharged battery in 10 hours	
15	Protections	-Input And Output Under Voltage And Over Voltage Protection -Output Short-Circuit Protection- Output Overload Protection- Full Isolation Between Input & Output.	
16	Indications	Mains ON, Charger ON, Battery Low, Inverter ON, System Trip/ Inverter Trip	
17	Alarms	-Low Battery -Mains Failure	
18	Metering	Input Voltage, Output Voltage and Current, Battery Voltage And Current.	
19	Power management software	Software suite CD ROM (Bundled with UPS)	
20	Nominal DC Voltage	(To Be Specified)	
21	Backup Time	1 Hour on Full Resistive Load Of 4000 Watts	
22	No. Of Batteries	(To Be Specified)	
23	Type Of Batteries	Sealed, maintenance free	
24	Capacity Of Batteries	Minimum 8190 VAH	
25	Make Of Batteries	(To Be Specified Only reputed makes will be considered)	
26	Manual Bye Pass	To Be Provided	
27	Static Bye Pass	To Be Provided with changeover within 4 ms	
28	Audible noise	Not more than 55 dbA	
29	Accessories	Power cables, media, manageability software, documentation etc	
30	Supported os for manageability software	Windows 2003 server, win 2000 pro, Win Xp, Windows Vista	
31	Warranty	One Year on site including Batteries.	
32	Redundancy	Option for operating two UPS systems in parallel redundant mode with load sharing to be made available if required.	