



Bharat Heavy Electricals Limited

Information Technology Centre, HEEP, Ranipur, Haridwar-249403

UTTARAKHAND (INDIA)

Phone: 01334-281399, FAX: 223948 E-mail: ajaipal@bhelhwr.co.in

Ref: HW/ITX/2/1396 Dated: 17.10.2016

Subject: NIT for Provisioning of 45 Mbps (1:1) Internet Leased Line Services at BHEL, Haridwar

Sir,

1. BHEL, Haridwar plans to procure 45 Mbps (1:1) Internet Leased Services from reputed and qualified ISPs as per the tentative scope of work enclosed. Scope of work and Technical specifications are given in detail in Annexure-II & III respectively. The tender document comprises of following:

Annexure I	Technical Prequalification Criteria
Annexure II	Terms & Conditions
Annexure III	Technical Specifications
Annexure IV	Prequalification Criteria Compliance Sheet
Annexure V	Technical Compliance Sheet
Annexure VI	Price Bid Sheet

2. You are requested to submit techno-commercial offer in two parts in the enclosed formats strictly as per the scope of work indicated therein. The tender offer should be sealed in separate envelopes with 'Technical bids' / 'Commercial bids', tender no., opening date duly super scribed on the envelopes. The technical bid envelope should enclose your technical offer, pre-qualification criteria compliance sheet (Annexure-IV), Technical compliance sheet (Annexure V), Terms and conditions (Annexure-II) and un-priced bid (Annexure VI). All documents should be filled in with required details duly signed & stamped. **All documents/proofs/ certificates / data sheets required as per Annex-IV and V must be submitted in the Technical bid.** The EMD and tender document fee will also be submitted alongwith this part of bid.

The commercial bid envelope should enclose price bid (Annexure VI) only.

4. Technical bid will be opened on the last day of submission of the tender at 2.00 P.M. in the presence of the tenderers or their authorized representatives who may like to be present. Incomplete offers are liable to be rejected.
5. The terms and conditions given at Annexure-II will be adhered to by the tenderer. Please do not remain silent on any point and if you are not accepting any terms/conditions please clearly state so. Any deviation/remarks should be clearly specified by the tenderer in separate sheets.
6. Vendor must meet prequalification criteria as per Annexure-I. The offers not meeting these criteria will be rejected summarily.



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7. Earnest money of Rs. 1,22,000/- and tender document charges of Rs. 2000/- in the form of demand draft (two separate drafts) in favour of BHEL, Haridwar, Pay order or cash deposit (as permissible under Income Tax Act) with Accounts officer, BHEL, Ranipur, Haridwar is to be furnished with the tender offer. BHEL reserves the right to reject any or all tenders without assigning any reason there-of. EMD of unsuccessful vendors will be refunded within 15 days of awarding the tender.
8. The offers in sealed envelope should be submitted latest by **1.45 P.M. on 11.11.2016** at the following address through registered post / speed post:

**Head of Material Management
Heavy Electricals Equipment Plant
Bharat Heavy Electricals Limited
Ranipur Haridwar (Uttarakhand)
PIN – 249403**

The quotation must be posted taking the allowance for postal transit delays.

Alternatively, the tender duly sealed and superscribed, clearly mentioning the 'Technical/Commercial Bid', tender no., opening date as mentioned above may be deposited in the **tender box situated at fourth floor, Main Administrative Building, HEEP, BHEL, Ranipur, Haridwar.**

Quotation not received in time is likely to be ignored.

Tender opening is scheduled to start in the tender room at 2 PM on due date. Therefore quotation must reach the above mentioned office / tender box latest by 1:45 PM on due date.

IMPORTANT: Any vagueness / incomplete detail in the offers shall make it liable to be rejected as these shortcomings in the offers shall be interpreted as incompetence on the part of vendor to meet the requirements of BHEL.

Checklist for submitting the bid is as under:

To be submitted with Technical Bid

Sl.	Annexure	Description	Remarks
1	Annexure II	Standard Terms & Conditions	Signed copy
2	Annexure IV	Pre-Qualification Criteria Compliance	All referred documents / proof / data sheets to be submitted
3	Annexure V	Technical Compliance Sheet	



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4		EMD	
5		Tender document fee	
6	Annexure VI	Un-priced Bid	Mention Tax Rates

To be submitted with Price Bid:

Sl.	Annexure	Description	Remarks
1	Annexure VI	Price Bid	In a separate sealed envelope

Annexure List:

Annexure I	Technical Prequalification Criteria
Annexure II	Terms & Conditions
Annexure III	Technical Specifications
Annexure IV	Prequalification Criteria Compliance Sheet
Annexure V	Technical Compliance Sheet
Annexure VI	Price Bid Sheet

Thanking you,

Yours faithfully,

(Ajai Pal Singh)
Manager/ITX



Technical Pre-Qualification Criteria	
Sr. No	Description
1	Bidder should have a valid class A ISP license. Documentary evidence is to be provided.
2	<p>The Bidder should have successfully executed Internet Leased Line Services order during last 7 years, ending September 30, 2016 , in any one of the following:</p> <p style="text-align: center;">Single Internet Leased Line Service Contract which have minimum yearly payment of Rs 16 Lakhs. The Internet Leased Line Contract should be commissioned and has been running successfully for more than a year after the Date of commissioning.</p> <p style="text-align: center;">Or</p> <p>Two numbers of Internet Leased Line Service Contract which have minimum yearly payment of Rs 10 Lakhs. The Internet Leased Line Contracts should be commissioned and have been running successfully for more than a year after the Date of commissioning.</p> <p>Documentary proof for above showing full customer address, mail id, contact number and order value is to be submitted.</p>
3	Average Annual financial turnover during the last 3 years ending March 31, 2016 is at least Rs 18 lakhs. In support of this, audited Balance Sheet and profit & loss account of last three years i.e. 15-16, 14-15, 13-14 have to be submitted.



TERMS & CONDITIONS

1 General

- 1.1 The term vendor shall apply to successful Internet Service Provider (ISP).
- 1.2 The vendor shall supply, install, commission and maintain on a turn-key basis Internet Leased Line and required equipment, detailed in the order placed by BHEL on the vendor which will fulfill the functional requirements as defined in scope of work and technical specifications.

2 Prices

- 2.1 Minimum commitment period will be three years after the successful commissioning and acceptance of the complete system which may be extended for the subsequent year(s) with mutual consent based on prevailing rates at that time.
- 2.2 Successful vendor shall enter into rental agreement with BHEL on non-judicial stamp paper of required value as per extant rules, at their own cost.
- 2.3 Rental payment will be paid on quarterly basis, at the end of each quarter. Invoices are to be submitted in triplicate along with other necessary documents. Deduction of downtime if any shall be made from quarterly rental charges.
- 2.4 Prices are net F.O.R destination, inclusive of freight, handling and packing charges, transit insurance, installation, commissioning, regular insurance, on-site comprehensive maintenance during the contract period. Service tax and government levies shall be extra as per actuals during the contract.
- 2.5 The vendor shall be responsible for payment of excise duty, custom duty, all other state/central/local govt. taxes, freight and insurance up to equipment-installation-sites in BHEL Haridwar and during the contract period.
- 2.6 No interest whatsoever shall be payable by BHEL on any amount due to the vendor.
- 2.7 The insurance coverage should be comprehensive with provisions for theft, fire, floods, riots etc. The responsibility for the insurance will rest with the vendor. Claim(s), if any, will be dealt with the underwriters directly by the vendor.

3 Delivery

- 3.1 The vendor shall supply, install, test and commission the whole work in all respect within 10 weeks from the date of placement of order. Early delivery / commissioning is acceptable. Leased line shall be provisioned at ITX building of BHEL Haridwar.



- 3.2 BHEL reserves the right to ask for a delayed delivery.
- 3.3 Hardware/software/services shall be deemed as incomplete or undelivered, if any component of hardware or software or services within the configuration or main documentation related thereto is not delivered and if delivered is not operational or not acceptable after testing/examination.
- 3.4 In case the delivery, installation and successful commissioning schedule for the works is not adhered to, penalty at the rate of 0.5% per week (or part thereof) of the amount equivalent to four quarterly charges (subject to a maximum of 10% of four quarterly charges) shall be levied by BHEL on the vendor. However, in the event that the delay occurs on account of fault of BHEL including on account of failure of BHEL to ensure site preparation, the period on this account will not be considered for penalty.
- 3.5 Penalty, if any, shall be deducted from first quarterly charges. In case, the penalty amount is more than the first quarterly charges, the same shall be adjusted from the subsequent quarters.

4 Scope of Work

- 4.1 Supply, Installation, Configuration, Commissioning, Testing and maintenance of dedicated 45 Mbps (1:1) uncompressed, symmetric Internet Leased Line on turnkey basis as per specified configuration.
- 4.2 Supply, installation, testing and commissioning of router & other terminal equipment as per technical specifications at no extra cost. Initial configuration/setup of router shall be done by vendor. During the contract period, vendor shall modify the configuration of router as per BHEL's change requests. The service provider shall put in place a proper change request management. BHEL shall be free to demand any change request regarding configuration in the router relevant to the BHEL network. Any change request will be implemented by the vendor by the end of next working day. Vendor will take regular backup of configuration of router. Read-only permission to view the router configuration will be given to BHEL.
- 4.3 Vendor will ensure that any cable laying is underground at the depth as per industry standards.
- 4.4 Any liability, due to damage done to the property of others, shall be responsibility of vendor.
- 4.5 Vendor would ensure that the local loop provisioning does not violate regulations as laid by Government / TRAI / local authorities in respect of such links/ networks. Vendor will be responsible for making all the payments towards the local loop charges / rentals / installation Charges etc.



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- 4.6 Comprehensive Onsite AMC of router during contract period at no extra cost. After initial commitment period of three years, router will become property of BHEL. If contract is extended beyond three years, ISP will continue to provide comprehensive AMC of router without any additional cost.
- 4.7 Provisioning of secured web based portal to monitor the bandwidth utilization and performance of the internet link.
- 4.8 Delivery of IPv4 and IPv6 addresses as per technical specifications which are to be used at BHEL's network.
- 4.9 Configuration of Reverse DNS lookup entries at ISP's DNS servers.
- 4.10 BHEL's involvement during each stage of implementation shall be ensured by the vendor.
- 4.11 Acceptance Testing based on agreed ATP document.
- 4.12 Before submission of bid, bidder can visit the site at their own cost to assess the actual amount of work.
- 4.13 Vendor should quote only one make & model for router i.e. no alternatives of make and/or model is allowed.
- 4.14 Repairing/replacing any faulty cable/equipment during contract period, damaged due to any reason whatsoever, will be done by the vendor. BHEL shall not bear any cost for the same.
- 4.15 BHEL reserves the right to relocate the equipment. Shifting of equipment from one location to another within BHEL campus shall be the responsibility of the vendor. All the requisite works like dismantling of equipment, packing, transportation etc. shall be the responsibility of the vendor. A mutually agreed cost will be paid by BHEL to the vendor on this account. The time given for shifting and installation of equipment at new location will be mutually agreed and time taken beyond that period will be treated as downtime.
- 4.16 The vendor shall provide the certificate of newness of the equipment at the time of supply of equipment.
- 4.17 No items shall be offered, whose end-of-sale has been declared by the OEM or has been declared to be under phase out.
- 4.18 The vendor should fulfill all statutory, regulatory and safety requirements for personnel engaged while executing the contract. If BHEL has to incur any expenditure due to non-



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compliance of the applicable statutory provisions, the same will be compensated by the vendor.

5 Acceptance Test Procedure

- 5.1 The vendor shall submit project completion report to BHEL once the Internet leased line service is established so that BHEL can carry out the acceptance test. All manuals, documentation, accessories etc. will be handed over by vendor to BHEL.
- 5.2 The acceptance test which involves running standard vendor tests and/or BHEL tests immediately after completion of installation and documents submission as stated above. Some suggestive tests are as follows:
 - 5.2.1 Running speed tests at random intervals.
 - 5.2.2 Checking reverse DNS lookup entries through standard tools.
 - 5.2.3 Checking local loop in ring by plugging out the fiber cable from one end of the loop.
 - 5.2.4 Demonstration of web based portal report.

6 Training

During installation and initial configuration of router at BHEL, the associated BHEL personnel shall be imparted user level training for administration of router. Other troubleshooting techniques shall be shared for pinpointing the fault for faster compliant resolution.

7 EARNEST MONEY DEPOSIT (EMD)

- 7.1 EMD is to be deposited by the bidder as per tender document.
- 7.2 EMD given by unsuccessful bidders shall be refunded normally within 15 days of award of work.
- 7.3 EMD shall not carry any interest.
- 7.4 EMD by the bidder will be forfeited if after opening of the tender, the bidder revokes his tender within validity period or increases his earlier quoted rates or the successful bidder does not commence the work within the period as per LOI/Contract.

8 Downtime Penalty

- 8.1 Vendor shall maintain the overall uptime of leased line to minimum 99.5%. Latency should be less than 350ms from router installed at BHEL location to ISP's tier 1 peering point at USA. Packet Loss should be less than 1% (Average over 1000 pings) at any given point of time to any part of globe. In case latency and / or packet loss exceed the above limits, downtime shall be assumed however there will be no downtime if limits are crossed due to over-utilization of leased line at BHEL's end.



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- 8.2 Non-availability of leased line due to fault of router will also be considered as downtime. Also, if the configuration change request raised by BHEL is not fulfilled by the vendor within stipulated time, downtime penalty shall be applicable as per clause 8.1.
- 8.3 The availability of the link shall be computed on monthly basis. Downtime shall be calculated on pro-rata basis. If the link is down for more than 2 hours continuously, penalty amount equivalent to twice the amount of normal charges for the unavailable period will be charged and deducted from the vendor's invoice on pro-rata basis even if the overall availability is more than 99.5%.
- 8.4 The downtime calculation shall be based on 24x7 hours.
- 8.5 There shall be no downtime due to mutually agreed scheduled maintenance of equipment etc. In normal circumstances, vendor will schedule the maintenance activities during night hours only.
- 8.6 Vendor will inform the BHEL in advance about scheduled maintenance activities.

9 Risk Purchase

BHEL reserves the right to terminate the order / contract and purchase from elsewhere at the risk and cost of the vendor, either the whole or part of equipment, which the vendor has failed to deliver within the stipulated delivery period or if the same were not available, the best and nearest substitute(s) thereof. The vendor shall be liable to compensate the BHEL for any loss which BHEL may sustain by reason of such purchase. This clause will be operated only after completion of delivery period including extended period with penalty.

10 Patents & Trademarks

Vendor shall at all times fully indemnify and keep indemnified the purchaser (BHEL) against all claims which may be made in respect of systems/ goods/ software / services supplied by the vendor, for infringement of any right protected by patent, registration of designs or trademarks and legality of usage of software. In the event of any such claims being made against the purchaser (BHEL), purchaser (BHEL) will inform the vendor who shall at his own cost either settle any such dispute or conduct any litigation that may arise there from.

However vendor will have no obligation for any claim or infringement arising from third party products not supplied in the order, modifications and technical information / instructions advised by purchaser and use of products prohibited by product manuals.

All such claims will be settled as per Indian laws.



11 NEW / BETTER SYSTEM

During the contract period of this rental agreement, if new / better systems are available and if desired by BHEL, the existing system shall be replaced by the vendor on mutually agreed terms and price.

12 TENDER EVALUATION

12.1 After the process of Techno-commercial Bid evaluation, Price Bid opening or RA will be done for all technically qualified bidders.

12.2 The valuation will be on the basis of delivered cost i.e. "total cost to BHEL".

12.3 Optional item, quoted if any, will not be considered in evaluation as well as during the tender execution.

13 REVERSE AUCTION (RA)

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

13.1 For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.

13.2 Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit 'online sealed bid' in the Reverse Auction. Non-submission of 'online sealed bid' by the bidder for any of the eligible items for which techno commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

13.3 BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.

13.4 In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.

13.5 Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance. Bidders have to fax the



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Compliance form before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.

- 13.6 In line with the NIT terms, BHEL will provide the calculation sheet (e.g. EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
- 13.7 Reverse auction will be conducted on scheduled date & time.
- 13.8 At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
- 13.9 The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, as provided on case-to-case basis to Service provider within two working days of Auction without fail.
- 13.10 In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
- 13.11 Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the 'Business Rules of Reverse Auction', which will be communicated before the Reverse Auction.
- 13.12 If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
- 13.13 The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
- 13.14 In case BHEL decides to go for reverse auction, the H1 bidder(s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

14 ACCEPTANCE OF LOI/ORDER:

Letter of vendor's acceptance for the Letter of Intent (LOI)/Order from BHEL is to be submitted within one week of issue date of LOI/Order.



15 VALIDITY OF OFFER:

Offer shall be valid for 120 days from tender opening date.

16 MODE OF PAYMENT

Payment will be made by way of Electronic Fund Transfer.

17 TERMINATION OF ORDER /AGREEMENT AND ITS CONSEQUENCES

17.1 After initial commitment period of three years, either party i.e BHEL or the vendor can terminate the contract by giving three months' notice in advance to the other party.

17.2 Within the contract period, in case the performance of the service is persistently below the agreed upon levels continuously for two months, the contract can be terminated by BHEL by giving one month' notice.

18 SUBCONTRACTING

The vendor shall not sub-contract, assign or otherwise transfer the Order/Contract or any part thereof without prior written consent of the BHEL.

19 CONFIDENTIALITY

Seller/Contractor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents, etc. belonging to the purchaser and also of the Systems, procedures, reports, input documents, manuals, results and any other company documents discussed and/or finalized during the course of execution of the order/contract.

20 CLAIMS

All the claims etc. lodged with the underwriters, if any, shall be dealt with by the vendor directly.

21 ARBITRATION

In all cases of disputes emanating from and in references to this agreement the matter shall be referred to the arbitration. All disputes or differences between the parties will be resolved through arbitration governed by Arbitration & Conciliation Act 1996 as amended from time to time. The venue of arbitrator shall be Haridwar only.



22 JURISDICTION

All disputes or differences arising out of, under or in connection with this contract shall be subject to the exclusive jurisdiction of the courts having jurisdiction over BHEL, Haridwar.

23 GOVERNING LAW

This contract shall be governed in all respects by Indian law.

24 FORCE MAJEURE

Neither BHEL nor the vendor shall be responsible for delays/failures in performance resulting from acts beyond the control of either. Such acts shall include but not be limited to acts of God, strikes, lockouts, riots, acts of war, epidemics, governmental regulations superimposed after the agreement, fire, earthquakes or other such disasters.

25 LIMITATION OF LIABILITY

The vendor's liability will be limited to the one year rental charges.

26 INDEMNITY

Bidder shall fully indemnify and keep indemnified the purchaser against all claims which may be made in respect of the of System / Software / Item(s) / Services supplied / rendered by the Bidder, for infringement of any rights protected by patent, registration of designs or trademarks and legality of the software. However the bidder will have no obligation for any claim of infringement arising from third party products not supplied in the order, modifications and technical information/ instructions advised by purchaser and use of products prohibited by product manuals.

All such claims in this regard will be settled as per Indian laws.

In the event of any such claims being made against the purchaser, purchaser will inform in writing to the bidder who shall at his own risk and cost either settle any such dispute or conduct any litigation that may arise there from.

27 INFORMATION SECURITY REQUIREMENTS

27.1 BHEL Haridwar has implemented Information Security Management System (ISMS) and has taken certificate for the same based on ISO 27001 standard.

27.2 BHEL Information Security Policy is as follows:



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“BHEL is committed to ensure Integrity, Confidentiality, Availability and Security of its information at all times for serving the needs of the organization in line with its Vision, Mission & Values while meeting all regulatory requirements.”

27.3 In line with the ISMS requirements, vendor and its staff shall ensure the protection of BHEL information assets / information processing facilities at all times with respect to confidentiality, integrity and availability.

27.4 The vendor / personnel deputed by vendor shall comply with following requirements:

- 27.4.1 Personnel deputed by vendor shall follow the ISMS system requirements.
- 27.4.2 Personnel deputed by vendor shall present his / her identity proof to BHEL for getting proper authorization from BHEL. He/she shall not enter into BHEL premises without proper authorization.
- 27.4.3 Vendor and personnel deputed by vendor shall sign Non-Disclosure Agreement (NDA) in the specified format of BHEL Haridwar.
- 27.4.4 When allowed by proper authority, he / she shall work in secure area only in the presence of BHEL staff.
- 27.4.5 If he /she has to work on any server / network device in secure area, the work shall only be allowed in presence of system administrator or any other person authorized by ITX.
- 27.4.6 He / she shall maintain and service only that equipment which comes under his /her scope of contract.
- 27.4.7 Vendor / personnel deputed by vendor shall ensure the return or destruction of information / data at the end of rental agreement and as and when required.
- 27.4.8 Access to information assets, which is not explicitly authorized, shall be treated as forbidden.
- 27.4.9 Any information security incident and / or security breaches shall be immediately reported to BHEL.
- 27.4.10 In case of any violation of the above, it will amount to non-fulfillment of terms & conditions of the contract.



Technical Specifications of Dedicated 45 Mbps (1:1) Internet Leased Line

1. ISP will setup dedicated 45 Mbps (1:1) Internet Leased line bandwidth on optical fiber for Internet access on turn-key basis at ITX building of BHEL Haridwar.
2. ISP shall provide uncompressed (1:1) Symmetric Internet Bandwidth at ITX building of BHEL Haridwar. Committed access rate shall be upto International gateways.
3. ISP will have the single point of contact for any communication and should have their own NOC (Network Operating Centre) to manage the services on 24*7*365 basis.
4. ISP network shall be fully dual stacked IPv4 / IPv6 protocol compliant as BHEL will host IPv6 enabled servers / machines on Internet.
5. The last mile for the delivery of Internet Leased Line would be over optical fiber Network, which will be backhauled over ISP's network to the nearest Internet PoP further to the Internet Gateways. Optical fiber connectivity, backbone as well as last mile shall be in complete ring topology to minimize the downtime. The two arms of the ring shall enter BHEL campus in two separate ducts, which shall be in separate trenches and in opposite directions. The ring should provide automatic failover of the last mile, so that if there is cut in one arm of the fiber, the link shall continue to work through the other arm without any disruption.
6. ISP should have its multiple International Peering Gateways, multiple landing stations for international traffic on international fiber. The gateways shall be peered with international peering points through different OFC in two different directions. Documentary evidence is to be provided.
7. ISP will not use BSNL optical fiber network for its backbone as well as last mile.
8. ISP will ensure secured and protected Internet Leased Line from Internet based attacks. Mitigation of such attacks should be at least 500Mbps.
9. ISP will provide and maintain all necessary terminal equipment at its own cost during the contract period.
10. ISP will provide secured web based portal to monitor the bandwidth utilization and performance of the internet link.
11. ISP shall have local peering for national traffic. Proof to be submitted.
12. In the technical bid, detail of connectivity is to be mentioned along with proper diagrams and write-up of solution.
13. ISP will provide the single point of contact for any communication and should have their own NOC (Network Operating Centre) to manage the services on 24*7*365 basis. Escalation matrix with contact numbers and email IDs has to be provided.



14. ISP shall provide at least one class C IPv4 subnet of public IPv4 addresses (256 IP addresses) and one pool of Internet routable IPv6 subnet. ISP to specify no. of IPv4 and IPv6 addresses in the technical bid.
15. The Connectivity should be stable. The guaranteed uptime (including last mile availability) should be at least 99.5%.
16. Latency should be less than 350ms from router installed at BHEL location to ISP's tier 1 peering point located at USA. Packet Loss should be less than 1% (Average over 1000 pings) at any given point of time to any part of globe.
17. ISP shall make necessary reverse DNS lookup entries in its DNS servers as per BHEL's requirements.
18. ISP will provide the router of reputed make with following specifications.

S.No.	Parameter / Feature	Detailed Specifications
1	Make & Model Offered	
2	Router Architecture & Chassis	The router architecture should have following features: Should be based on High-performance multicore processors supporting high-speed WAN connections Should deliver performance that does not degrade with the addition of services. Should be a multi-service capable router supporting data, voice and video.
3	Interface Modules Supported	Ethernet ports 100/1000 Mbps, V.35 WAN interfaces, E1 G.703 interfaces, Console interface
4	Ports Required	The following ports should be available from day one.
		At least 2 Nos. of Layer 3 10/100/1000 Mbps Ethernet WAN Ports
		At least 4 Nos. RJ-45 Based LAN Ports
		1 No. Console Port with console cable.
5	Memory	Should have minimum 2GB of DRAM or higher
		Should have minimum 1GB of flash memory or higher
		Should support minimum 1GB External flash memory



Information Technology Centre

Bharat Heavy Electricals Limited, HEEP, Ranipur, Haridwar-249403

Tender No. HW/ITX/2/1396 Dated: 17.10.2016

Annexure III

6	Performance Required	Should have at least 1 Gbps of Throughput with all the slots operating at non-blocking mode
7	Routing Protocols Support Required	RIP v1 and RIPv2, OSPF, Border Gateway Protocol (BGP),IS-IS, IGMP, RSVP, RADIUS, AAA, IPv4-to-IPv6 Multicast, MPLS, Layer 2 and Layer 3 VPN, IP sec, Layer 2 Tunneling Protocol Version 3 (L2TPv3), Bidirectional Forwarding Detection (BFD), IEEE802.1ag, and IEEE802.3ah
8	Router Functional Requirements	<p>The following features should be available in the router from day one.</p> <p>Should have policy based route filtering and routing information translatability.</p> <p>Should have Adaptive routing capabilities.</p> <p>Should have priority output and custom queuing in case of network bandwidth saturation.</p> <p>Should have packet switched services such as X.25, Frame relay etc.</p> <p>Should have multilevel configuration permissions, logging and accounting.</p> <p>Should have Route Maps, Class Maps & Policy Maps.</p> <p>Should have Standard Access Lists, Extended Access Lists & Named Access Lists.</p>
9	Security Protocols Support Required/ Cryptographic Algorithms	<p>Should support DES, 3DES & AES based Encryption</p> <p>Should support RSA, MD5, SHA, SHA-256 based authentication.</p>
10	Firewall & IPS	Should come with firewall feature from day 1
11	Multicasting and QoS	<p>The router should have following multicasting and QoS features:</p> <p>Resource Reservation Protocol (RSVP)</p> <p>Support for QoS</p> <p>Support for WFQ, Committed Access Rate (CAR) , IP Precedence, DSCP</p> <p>Internet Group Management Protocol (IGMPv3)</p> <p>Multicast Routing support such as Protocol Independent Multicast</p>



		(PIM) or MOSPF
12	IPv6 Support	Should be IPv6 compliant. Should have dual stack (IPv6 & IPv4) from day1.
13	Management Features	Should have Telnet, SSH, TFTP and BOOTP protocols. Should have SNMP V1 & SNMP V2c & SNMP v3 for remote management. Should be configurable using CLI & GUI interface. Should support NTP & RADIUS protocols Should support syslog/traceroute logs.
14	Embedded IP Security	Should support IPsec and VPN services.
15	Encapsulations	should have Generic routing encapsulation, Ethernet, 802.1q VLAN, PPP, Multilink Point-to-Point Protocol (MLPPP), Frame Relay, Multilink Frame Relay (MLFR) , High-Level Data Link Control (HDLC), Serial (RS-232, RS-449, X.21, V.35, and EIA-530), and (PPPoE).
16	Traffic management	Should have Weighted Fair Queuing (WFQ), Weighted Random Early Detection (WRED), Hierarchical QoS, Policy-Based Routing (PBR), Performance Routing, and Network based application recognition (NBAR).
17	Power-supply options	Should be provided with internal redundant power supply. Single unit should be able to handle the load of full equipment.
18	Mounting	The offered router should be rack mountable. Rack mount kit to be given by vendor.
19	Accessories	Should come with all necessary power cords, adapters, data cables, connectors, CDs, manuals, brackets accessories etc, required for installation and commissioning of the equipment.
20	Operating System	Should come with the latest operating system supporting the above features.
21	End Of Support	End of support of supplied router including software of router should not be less than 5 years from the date of issue of this tender.



22	Certifications	The router should be EAL/NDPP certified.
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Technical Pre-Qualification Criteria		
Sr. No	Description	Compliance (Y/N)
1	Bidder should have a valid class A ISP license. Documentary evidence is to be provided.	
2	<p>The Bidder should have successfully executed Internet Leased Line Services order during last 7 years, ending September 30, 2016 , in any one of the following:</p> <p style="padding-left: 40px;">Single Internet Leased Line Service Contract which have minimum yearly payment of Rs 16 Lakhs. The Internet Leased Line Contract should be commissioned and has been running successfully for more than a year after the Date of commissioning.</p> <p style="text-align: center;">Or</p> <p style="padding-left: 40px;">Two numbers of Internet Leased Line Service Contract which have minimum yearly payment of Rs 10 Lakhs. The Internet Leased Line Contracts should be commissioned and have been running successfully for more than a year after the Date of commissioning.</p> <p>Documentary proof for above showing full customer address, mail id, contact number and order value is to be submitted.</p>	
3	Average Annual financial turnover during the last 3 years ending March 31, 2016 is at least Rs 18 lakhs. In support of this, audited Balance Sheet and profit & loss account of last three years i.e. 15-16, 14-15, 13-14 have to be submitted.	



Technical Specifications Compliance Sheet

Sl. No.	BHEL's Requirement	Bidder's Compliance (Y/N)
1.	ISP will setup dedicated 45 Mbps (1:1) Internet Leased line bandwidth on optical fiber for Internet access on turn-key basis at ITX building of BHEL Haridwar.	
2.	The ISP shall provide uncompressed (1:1) Symmetric Internet Bandwidth at ITX building of BHEL Haridwar. Committed access rate shall be upto International gateways.	
3.	The last mile for the delivery of Internet Leased Line would be over optical fiber Network, which will be backhauled over ISP's network to the nearest Internet PoP further to the Internet Gateways. Optical fiber connectivity, backbone as well as last mile shall be in complete ring topology to minimize the downtime. The two arms of the ring shall enter BHEL campus in two separate ducts, which shall be in separate trenches and in opposite directions. The ring should provide automatic failover of the last mile, so that if there is cut in one arm of the fiber, the link shall continue to work through the other arm without any disruption.	
4.	ISP will not use BSNL optical fiber network for its backbone as well as last mile.	
5.	ISP will ensure secured and protected Internet Leased Line from Internet based attacks.	
6.	ISP will provide and maintain all necessary terminal equipment at its own cost during the contract period.	
7.	ISP will provide secured web based portal to monitor the bandwidth utilization and performance of the internet link.	
8.	In the technical bid, detail of connectivity is to be mentioned along with proper diagrams and write-up of solution.	
9.	ISP will provide the single point of contact for any communication and should have their own NOC (Network Operating Centre) to manage the services on 24*7*365 basis. Escalation matrix with contact numbers and email IDs has to be provided.	
10.	ISP shall provide at least one class C IPv4 subnet of public IPv4 addresses (256 IP Addresses) and one pool of Internet routable IPv6 subnet. ISP to specify no. of IPv4 and IPv6 addresses in the technical bid.	
11.	The Connectivity should be stable. The guaranteed uptime (including last mile availability) should be at least 99.5%.	
12.	Latency should be less than 350ms from router installed at BHEL location to ISP's tier 1 peering point located at USA. Packet Loss should be less than 1% (Average over 1000 pings) at any given point of time to any part of globe.	
13.	Bidder shall make necessary reverse DNS lookup entries in	



	its DNS servers as per BHEL's requirements.
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14.	ISP will provide the router of reputed make with following specifications.		
S.No.	Parameter / Feature	Detailed Specifications	Vendors' Compliance
1	Make & Model Offered		
2	Router Architecture & Chassis	The router architecture should have following features: Should be based on High-performance multicore processors supporting high-speed WAN connections Should deliver performance that does not degrade with the addition of services. Should be a multi-service capable router supporting data, voice and video.	
3	Interface Modules Supported	Ethernet ports 100/1000 Mbps, V.35 WAN interfaces, E1 G.703 interfaces, Console interface	
4	Ports Required	The following ports should be available from day one.	
		At least 2 Nos. of Layer 3 10/100/1000 Mbps Ethernet WAN Ports	
		At least 4 Nos. RJ-45 Based LAN Ports	
		1 No. Console Port with console cable.	
5	Memory	Should have minimum 2GB of DRAM or higher	
		Should have minimum 1GB of flash memory or higher	
		Should support minimum 1GB External flash memory	



6	Performance Required	Should have at least 1 Gbps of Throughput with all the slots operating at non-blocking mode	
7	Routing Protocols Support Required	RIP v1 and RIPv2, OSPF, Border Gateway Protocol (BGP),IS-IS, IGMP, RSVP, RADIUS, AAA, IPv4-to-IPv6 Multicast, MPLS, Layer 2 and Layer 3 VPN, IP sec, Layer 2 Tunneling Protocol Version 3 (L2TPv3), Bidirectional Forwarding Detection (BFD), IEEE802.1ag, and IEEE802.3ah	
8	Router Functional Requirements	<p>The following features should be available in the router from day one.</p> <p>Should have policy based route filtering and routing information translatability.</p> <p>Should have Adaptive routing capabilities.</p> <p>Should have priority output and custom queuing in case of network bandwidth saturation.</p> <p>Should have packet switched services such as X.25, Frame relay etc.</p> <p>Should have multilevel configuration permissions, logging and accounting.</p> <p>Should have Route Maps, Class Maps & Policy Maps.</p> <p>Should have Standard Access Lists, Extended Access Lists & Named Access Lists.</p>	
9	Security Protocols Support Required/ Cryptographic Algorithms	<p>Should support DES, 3DES & AES based Encryption.</p> <p>Should support RSA, MD5, SHA, SHA-256 based authentication.</p>	
10	Firewall & IPS	Should come with firewall feature from day 1	



11	Multicasting and QoS	The router should have following multicasting and QoS features: Resource Reservation Protocol (RSVP) Support for QoS Support for WFQ, Committed Access Rate (CAR) , IP Precedence, DSCP Internet Group Management Protocol (IGMPv3) Multicast Routing support such as Protocol Independent Multicast (PIM) or MOSPF	
12	IPv6 Support	Should be IPv6 compliant. Should have dual stack (IPv6 & IPv4) from day1.	
13	Management Features	Should have Telnet, SSH, TFTP and BOOTP protocols. Should have SNMP V1 & SNMP V2c & SNMP v3 for remote management. Should be configurable using CLI & GUI interface. Should support NTP & RADIUS protocols Should support syslog/traceroute logs.	
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16	Traffic management	Should have Weighted Fair Queuing (WFQ), Weighted Random Early Detection (WRED), Hierarchical QoS, Policy-Based Routing (PBR), Performance Routing, and Network	



		based application recognition (NBAR).	
17	Power-supply options	Should be provided with internal redundant power supply. Single unit should be able to handle the load of full equipment.	
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19	Accessories	Should come with all necessary power cords, adapters, data cables, connectors, CDs, manuals, brackets accessories etc, required for installation and commissioning of the equipment.	
20	Operating System	Should come with the latest operating system supporting the above features.	
21	End Of Support	End of support of supplied router including software of router should not be less than 5 years from the date of issue of this tender.	
22	Certifications	The router should be EAL/NDPP certified.	



Price Bid							
1	The Leased line charges are to be quoted for one quarter payable at the end of each quarter.						
2	There is no separate charges payable for supply & maintenance of router, terminal equipment, fiber laying, installation charges, one time charges etc. All charges have to be included in the quarterly charges.						
3	The comparative statement will be on quarterly charges x 12 quarters.						
4	Since service tax is centvatable as per the present tax rules, all taxes except service tax will be loaded in the comparative statement to arrive at landed cost to BHEL						
5	All values are to be quoted in Indian Rupees.						
Sl. No.	Item Description	Unit	Qty	No of Quarters	Per Quarter Charges Inclusive of all taxes except service tax	Service Tax Applicable on Coloum E	Total Charges for 3 years inclusive of all taxes Except Service Tax
A	B		C	D	E	F	G=DxE
1	45 Mbps (1:1) Internet Leased Line Service	Nos.	1	12			
Mention other Tax Rate if any. All other taxes will be included in quarterly rental charges except Service Tax							