



Bharat Heavy Electricals Limited

Bid For

Annual Maintenance Contract for Existing nodes,
Laying and termination of fiber optic cable,
and
Installation of new network nodes

At
BHEL, Bhopal

Tender Number: BPL: IFX/810/NW-AMC/2008/2

Book No	:	
Issued To	:	
Bid Submission Date & Time	:	On or before 16-01-2009 at 14:00 Hrs.
Technical Bid Opening Date & Time	:	16-01-2009 at 14:30 Hrs.

INFORMATICS CENTRE

Bharat Heavy Electricals Limited,
IFX Bldg., BHEL, Piplani,
Bhopal,
M.P. – 462022

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1.0 Tender Notice:

Ref. No.: BPL:IFX/810/NW-AMC/2008/2
Date: 24th December, 2008

M/s -----

Dear Sirs,

Subject : Annual maintenance contract for existing nodes and laying and termination of fiber cable and installation of new nodes at BHEL,Bhopal

Sealed quotations are invited for the above work as per specifications detailed under "TECHNICAL SPECIFICATION" and Terms and Conditions as enclosed. Firm offers should be submitted in THREE parts as detailed in relevant sections. All the parts should be individually sealed and super scribed indicating Part No. as required and enclosed in the main cover duly sealed and super scribed.

Before preparing the bids, please see the details in various Annexure.

Please note that the sealed tenders will be received by us up to **14:00 Hrs. on 16.01.2009 along with the EMD of Rs. 40,000 only**. EMD (Part-I) and Techno Commercial Bid (Part-II) will be opened on the same day at **14:30 hours** in the presence of such tenderers and /or their authorised representatives who choose to be present. The representative should be the same person who has signed the documents or his authorised representative with duly authorised letter. There shall not be any overwritten figures in document. All the cutting should be duly signed by the authorised person submitting the offer and should be rewritten in figures and words both.

BHEL takes no responsibility for delay, loss or non-receipt of tender documents sent by post and also reserves the right to accept or reject any or part of the tender without assigning any reason thereof.

Tender should be dropped in the tender box (Works Contract) at the address mentioned below :

Tender Box (WORKS CONTRACT)
Tender Room , Ground Floor
ADMINISTRATIVE Building,
Bharat Heavy Electricals Limited,
Piplani, BHEL, Bhopal, M.P. - 462022

With regards
for **Bharat Heavy Electricals Ltd.**

Piyush Jain
DGM (EDP)
Informatics Centre
Tel No.: (0755) 2502536, 4201851
Email : pjain@bhelbpl.co.in

2.0 REQUEST FOR PROPOSAL

BRIEF SCOPE OF WORK

Bharat Heavy Electricals Ltd., Bhopal (A Govt. of India Undertaking) invites tenders from bidders who qualify as per criteria below. The tender is invited in THREE PARTS (EMD & Tender Fees, Techno-Commercial & Price) for Supply & installation. The Qualification criteria for the bidders are as follows:

Qualification Criteria:

S.No.	Description
1	Bidder should have experience of successfully executing similar works during last 3 years. Order copies of works completed should be provided by vendor along with the Tender.
2	Bidder should have PF no. and ESI No./ Medical policy for executing the contract.

General Instructions for the bidders

1. Last date of submission is **14:00 Hrs on or before 16th January 2009** and EMD (Part I) and Techno-Commercial Bid (Part II) shall be opened on the same date at 14:30 Hrs.
2. Earnest Money Deposit (EMD) for the tender is **Rs.40,000/-** (Rupees Forty thousand only).

3.0 **INSTRUCTIONS AND GUIDELINES TO BIDDERS**

3.1 INTRODUCTION

M/s Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the Companies Act 1956 having registered office at BHEL House, Siri Fort, New Delhi-110 049 through its office at New Delhi (hereinafter referred to as "BHEL", which expression shall include its successors and assigns), invites offers for Equipments / Services in BHEL, as per Technical specification and Commercial Terms and Conditions detailed in the tender document.

3.2 TENDERER TO INFORM HIMSELF FULLY:

- 3.2.1** The tenderer shall closely peruse all the clauses, specifications, requirements and drawings, etc., indicated in the tender documents, before quoting. Should the tenderer have any doubt about the meaning of any portion of the tender specifications or find discrepancies or omissions in the specifications or if the tender documents are found to be incomplete or require clarifications on any of the technical aspects, scope of work etc., he shall at once contact the official inviting the tender, for pre-bid discussions/ clarifications, before submission of the tender.
- 3.2.2** Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the

implications thereof. The specifications and terms and conditions shall be deemed to have been accepted unless otherwise specifically commented upon by the tenderer in his offer.

3.4 PROCEDURE FOR SUBMISSION & OPENING OF BIDS

- 3.4.1 Bids shall be accepted by the official inviting the tenders, **in THREE parts**, as described below, on or before the due date & time indicated in the Tender Notice.

PART-I: EMD

This part shall consist of the following:

1. EMD in the form of Pay Order/ Bank Draft of **Rs.40,000/-** in favour of "Bharat Heavy Electricals Limited" payable at Bhopal. In the absence of submission of EMD, the offer will be summarily rejected.

PART-II: TECHNO-COMMERCIAL BID

This part shall consist of the following:

- a. *Annexure I of un-priced bid* dully filled for all the items.
The bidder should offer only as per Specification. BHEL Bhopal reserves the right to accept or reject the technical offer. Price bids of only techno-commercially short listed vendors will be opened.
- b. *Un-priced copy of PRICE FORMAT* as per Annexure-I.
The un-priced copy of the Price bid format shall be the same as the Price bid but without the Prices. All the quoted Prices/Rates etc. shall be replaced with the word 'QUOTED' or 'Q', in the un-priced copy.

PART-III : PRICE BID

Price Format containing PRICES only (to be furnished in the enclosed Price Schedule format only). Prices shall be quoted in Indian Rupees only.

Price Bid should not contain any technical details and/or Commercial Terms & Conditions as the same are supposed to be contained in PART-II only so that the same can be evaluated before opening of Price Bid(s).

3.5 MARKING ON ENVELOPE

Part-I, Part-II and Part-III offers shall be submitted in three separate sealed envelopes with bidder's distinctive SEAL super-scribed as follows:

PART-I: **1. TENDER ENQUIRY NO. AND DESCRIPTION**
 2. DUE DATE OF OPENING
 3. "EMD ".

PART-II: **1. TENDER ENQUIRY NO. AND DESCRIPTION**
 2. DUE DATE OF OPENING
 3. "TECHNO-COMMERCIAL BID".

PART III: **1. TENDER ENQUIRY NO AND DESCRIPTION**
 2. DUE DATE OF OPENING

3. "PRICE BID".

Un-sealed envelopes or envelopes not super-scribed as above may not be accepted/considered.

3.6 BID SUBMISSION

- 3.6.1 Bids shall be addressed to the official inviting Bids by name and designation and sent at the following address:

**Tender Box (WORKS CONTRACT)
Tender Room , Ground Floor
ADMINISTRATIVE Building,
Bharat Heavy Electricals Limited,
Piplani, BHEL, Bhopal, M.P. - 462022**

- 3.6.2 Bids can also be delivered in person to the office of AGM(IFX), Computer Building, BHEL, Bhopal.
- 3.6.3 Bids submitted by post shall be sent by "REGISTERED POST" only and shall be posted with due allowance for any postal delay. Bids shall be submitted latest by 14:00 Hrs. of the due date. Bids received after the Due Date and Time of opening are liable to be rejected.

3.7 BID OPENING

- 3.7.1 PART-I (EMD) and PART-II (Techno-Commercial Bid) is to be opened on the due date and time as specified in the Tender Notice, in the presence of bidders who may like to attend. Part-III (Price Bid) shall be opened subsequently.
- 3.7.2 Date and time of Price Bid (Part-III) opening shall be intimated to the technically and commercially acceptable bidders only.
- 3.7.3 Not more than two representatives will be permitted to be present for the tender opening.
- 3.7.4 No correspondence shall be entertained from the bidders after the opening of Price bid(s).
- 3.7.5 Standard pre-printed conditions of the bidders attached to the offer will not be accepted and only those mentioned in the body of his offer will be considered.
- 3.7.6 Unsolicited bids shall not be entertained. Unsolicited revised Price Bids also, shall not be entertained at any stage of the tendering process.
- 3.7.7 **No Literature, Pamphlets is to be enclosed. All such enclosures shall be considered as unread and also will not be considered as part of the quotation.**
- 3.7.8 **Vendor/ Lessor not submitting PART-I (EMD), their offer's PART II & PART III will not be opened/ Rejection of Vendor's Offer.**

3.8 VALIDITY OF OFFER

Offer shall be kept valid for four months from the due date of Tender, for Purchaser acceptance.

3.9 DEVIATIONS

Bids shall be submitted strictly in accordance with the Technical specification and Terms & Conditions of the Tender Enquiry. **"No-Deviation Certificate" has to be submitted along with Part – II i.e Techno – commercial bid as per Annexure – II.**

Newness certificate: The Vendor/Lessor has to submit the newness certificate of all the equipment supplied.

Complete Network Documentation soft media and hard copy comprising of all segments and terminations including measurement.

3.10 LANGUAGE & CORRECTIONS

3.10.1 The bidder shall quote the rates in English language and international numerals only. The metric system of units shall be used, for the purpose of tender.

3.10.2 Bidder shall fill the **ORIGINAL** tender documents issued by BHEL. All entries and signatures in the bid shall be in **BLUE INK only**. Each page of the bid shall be signed and stamped using official seal of the company by the bidder.

3.10.3 All entries shall be filled in neat and legible handwriting. No over-writings erasures and corrections are permitted and may render such bids liable for rejection.

3.10.4 However, if any cancellations, corrections and insertions are in the bid, the bidder shall duly attest the same.

3.11 REJECTION OF BID AND OTHER CONDITIONS

3.11.1 All items shall be of same make as specified in Technical Specification(Annex I).All Racks shall be of same make. No mix and match is allowed.

3.11.2 Any format not properly filled, partially filled or not filled will make the bid liable for rejection. Bidders are requested to note that all columns, rows and spaces provided to fill up the data must be filled with relevant data without fail. In case, any bidder fails to do so or fills up irrelevant data, BHEL is not bound to seek clarifications on such items and will be free to reject the tender summarily.

3.11.3 Bidders may note that the items are to be installed in locations already having network switches.

3.11.4 Bidder may visit the site at BHEL, Bhopal between 9AM to 4PM on working days before 10th January 2009.

3.11.5 Any relevant information pertaining to this tender can be obtained only from:

Piyush Jain
DGM (EDP)
Informatics Centre
Tel No.: (0755) 2502536, 4201851
Email : pjain@bhelbpl.co.in

3.11.6 Canvassing in any way concerning this tender, wrong declaration, incorrect information, misleading or incorrect certifications, etc. shall be viewed seriously and suitable action will be taken as per company norms.

3.11.7 The Purchaser reserves to itself, full rights for the following without assigning any reasons, whatsoever:

- a) To reject any or all the bids.
- b) To increase or decrease the quantities.

3.11.8 The offer is liable to be rejected, if it is found after the Price Bid Opening that the Price Bid submitted by the bidder is different from the un-priced bid (Annex I).

3.11.9 If the bidder deliberately gives wrong information in his bid, Purchaser reserves the right to reject such a bid at any stage or to cancel the Order/Contract, if awarded and forfeit the security deposit/ Bank Guarantee.

3.11.10 If the Prices/Rates of one or more of the enquired equipments have not been quoted, the offer is liable to be rejected.

3.12 TENDER EVALUATION

3.12.1 Totals/ Gross Total of Prices should be indicated both in words as well as in figures. If there is a difference between price quoted in words and figures or if there is any other price discrepancy, lower value(s) will be considered for evaluation & ordering.

3.12.2 Though, offer of higher warranty/ configuration/ rating, than what is required as per tender specifications, may be accepted, no extra weightage or preference will be given for the same.

3.12.3 Prices of optional items, if quoted, shall not be considered for Price evaluation and comparison.

4.0 COMMERCIAL TERMS AND CONDITIONS FOR BIDDERS

4.1 GENERAL

The words incorporating singular shall include plural and vice-versa, in the words importing masculine gender shall include feminine and vice-versa and the words importing persons shall include bodies; corporate, limited liability companies, partnership and other legal entities.

4.2 EXECUTIVE SUMMARY

About BHEL

Bharat Heavy Electricals Limited (BHEL) is today one of the largest engineering enterprise of India with an excellent track record of performance. The company has 14 manufacturing divisions, 8 Service centers and 4 power sector regional centers, besides project sites spread all over India and abroad and also regional operations divisions in various state capitals in India for providing quick service to customers. BHEL manufactures over 180 products under 30 major product groups and meets the needs of core-sectors like power, industry, transmission (including railways), defense, telecommunications, oil business, etc. Products of BHEL, make have established an enviable reputation for high quality and reliability.

Expectations from Vendor

Vendor has to maintain the existing network from the edge switches to the end point, provide data and voice connectivity by laying fiber optical, UTP cables and installing I/O boxes, as specified in the TECHNICAL SCOPE (Annex I).

4.3 SUPPLY CONDITION:

All equipment supplied and installed at the stipulated locations shall be NEW and conforming to the contract technical specifications.

4.4 DELIVERY

Delivery (i.e. Supply and installation) period shall start from the date of work order.

The Project is to be completed within one year from the date of work order. If the requirement is available then it has to be completed at min 5 nodes per day basis.

The project completion means acceptance of Total Project by BHEL as per the Acceptance Test Procedure (ATP).

4.5 RATES

Rates are to be quoted as per Price Bid Format. Details of prevailing rates of taxes should be indicated separately. Bidders, in their own interest, are requested to check up and indicate the different tax tariff like service tax etc. Taxes not mentioned by the bidder in their bid will not be entertained at later date. However, during the execution of the contract any increase or decrease in the above taxes/imposition of new taxes will be entertained against documentary proof.

4.6 PAYMENT TERMS

1. Payment towards the annual maintenance contract for existing nodes will be paid quarterly on submission of invoices from vendor and certification from IFX.
2. For new nodes, payments will be done on monthly basis after installation, testing, and documentation of the work as per requirements and Technical specifications (Annexure I).

The vendor has to submit the invoice indicating service tax separately on completion of documentation and signature on ATP.

4.7 SECURITY DEPOSIT

Security deposit of 10 % of total contract value is to be deposited immediately after the issue of work order by the vendor before commencing supply & installation of items. The Security Deposit may be furnished in any one of the following forms:

- i) Cash (as permissible under the Income Tax act)
- ii) Pay Order, demand Draft in favour of BHEL
- iii) Local cheques of Schedules Banks, subject to realization
- iv) Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras, etc.

(Certificates should be held in the name of the Contractor furnishing the security and duly pledged in favour of BHEL and discharged at the back).

- v) Bank Guarantee in BHEL Format from Scheduled Banks / Public Financial Institutions as defined in the Companies Act subject to a maximum of 50% of the total security deposit value. The balance 50% has to be remitted either by cash or in other form of security.
- vi) Fixed Deposit Receipt issued by Scheduled Banks /Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/c BHEL, duly discharged on the back.
- vii) Security Deposit can also be recovered at the rate of 10% from the running bills. However, in such cases at least 50% of the security Deposit should have been deposited before the start of the work and the balance 50% may be recovered from the running bills.
- viii) EMD of the successful tenderer shall be converted and adjusted against the security Deposit
- ix) The Security deposit shall not carry any interest.

Note: 1. Acceptance of Security Deposit against Sl. no. (iv) and (vi) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

2. Security Deposit shall not be refunded to the vendor except in accordance with the terms of the contract.

4.8 PENALTY FOR DELAY IN PROJECT COMPLETION

For AMC of existing nodes, the delay will be treated as downtime of the equipment and it will be treated as per para 4.9.

New Nodes has to be finished as per para 4.4 (delivery) and mutually agreed time period given at the time of new node work allotment. A register shall be maintained for this purpose. If the work has been not completed within agreed time period, penalty shall be levied at Rs.10 per node per day basis on the delayed nodes, subject to maximum of 10% of the node installation value.

4.9 DEDUCTION FOR DOWNTIME

4.9.1 Downtime consideration

Non availability of network services due to the followings will be treated as down.

- 1. Damage of the UTP cable (partial or full) due to any reason.**
- 2. Any problem in the UTP cable termination-RJ45/IO BOX/Patch Card.**
- 3. Delay in Activation of existing points.**

4.9.2 Downtime calculation for IT Equipment

Vendor/Lessor shall be responsible for maintaining the network from edge switches to the node at the uptime of atleast 99% per day of total nodes. If downtime of total nodes exceeds 1% then the vendor has to take corrective action to bring it to less or equal to 1%.

The deduction for downtime shall be calculated for each node if the node is down for more than 4 hours.

The deduction for downtime will be as mentioned below. The downtime will be calculated on hourly basis per month on 8 hours basis.

The deduction for downtime shall be as follows

<u>Downtime</u>	<u>Deduction factor</u>
Upto 4 hours	Zero
> 4 hours	Per hour AMC charges of per node, per month * total downtime(in hours) for the month

If resolution time exceeds allowed period then deduction will be calculated for total downtime including allowed period of 4 hours.

Working calculation for deduction

Let downtime in a month	=	A hours
Per hour AMC charges per node	=	B-Monthly AMC Charges per node/(30*8)
Amount of deduction in Rs.	=	A x B

Adequate staff of Maintenance (Minimum one Full time Resident Technician) shall be available at BHEL, Bhopal to respond to the maintenance calls on all BHEL working days from 8:00 AM to 5:00 PM. For calls made before 5:00 P.M, the downtime will start from the call time whereas for calls made after 5:00 P.M on any day, the down time will be counted from first hour of the next working day. However, in case of any fault the emergency calls shall be made and attended immediately round the clock.

4.10 MAINTENANCE

Maintenance service shall cover services, repairs and replacements necessary to keep the node/equipments in good working order on reasonable use of the equipments during the contract period. Full time resident technician shall be available for maintenance during office hours of BHEL, Bhopal.

4.12 INDEMNITY

Vendor shall fully indemnify and keep indemnified the Purchaser against all claims;

- which may be made in respect of the use of Item(s)/services supplied/rendered by the Vendor, for infringement of any rights protected by patent, registration of designs or trademarks and legality of the Software.
- for injury or damage caused by his negligence or the negligence of his employees or arising from any defect in the goods supplied or any work carried out by him.
- for injury to his employees or employees of his agent(s), whilst on Purchaser's premises.

- d. any other claims of whatsoever nature arising during the course and out of the execution of this Order/Contract.

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, will inform the Vendor who shall at his own risk and cost either settle any such dispute or conduct any litigation that may arise there from.

4.14 CONFIDENTIALITY

Vendor 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 finalised during the course of execution of the order/contract.

4.15 FORCE MAJEURE

Vendor shall not be responsible for delay in delivery resulting from acts/events beyond his control provided notice of the happening of any such act/event is given by the Vendor to the Purchaser within 15 days from the date of its occurrence. Such acts/events shall include but not be limited to acts of God, war, floods, earthquakes, strikes, lockouts, epidemics, riots, fire or Governmental regulations superimposed after the date of order/contract.

4.16 RISK PURCHASE

Purchaser shall reserve the right to terminate the order/contract and enter into lease at the risk and cost of the Vendor, either the whole or part of the Systems/goods, which the Vendor has failed to deliver within the stipulated delivery period or if the same were not available, the best and the nearest available substitute(s) thereof. The Vendor would be liable to compensate the Purchaser/Lessee for any loss, which the Purchaser may sustain by reason of such lease contract. This clause will be operated only after completion of delivery period including minimum time period for maximum penalty.

4.17 PATENTS & TRADEMARKS

Vendor shall at all times indemnify the Purchaser against all claims which may be made in respect of the Systems/goods supplied by the Vendor, for infringement of any right protected by patent, registration of designs or trade marks and legality of usage of items. In the event of any such claims being made against the Purchaser, Purchaser will inform the Vendor who shall at his own cost either settle any such dispute or conduct any litigation that may arise there from.

4.18 SUB-CONTRACTING

Order/contract or any part thereof shall not be sub-contracted, assigned or otherwise transferred without prior written consent of the Purchaser.

4.19 TERMINATION OF THE LEASE CONTRACT & ITS CONSEQUENCES

- 4.19.1 Purchaser reserves the right to terminate the order/contract, either wholly or in part, upon situations arising due to non-compliance of stipulations of

the Order/contract by the Vendor, or non-performance of the equipment/system below 98% continuously for more than 1 month , at the risk and cost of the Vendor/Lessor.

- 4.19.2 In case of the contract termination, Vendor will remove the equipment from Purchaser premises at his own risk and cost after due permission from BHEL.
- 4.19.3 Vendor shall continue the performance of the order/contract under all circumstances, to the extent not cancelled.
- 4.19.4 BHEL reserves the rights to cancel the contract in case the equipment and services are not found to be satisfactory.
- 4.19.5 Consequences: As soon as the contract is cancelled / terminated by BHEL, no payment will be payable to the Vendor.

4.20 SETTLEMENT OF DISPUTES

- 4.20.1 Except as otherwise specifically provided in the Order/Contract, all disputes concerning questions of the facts arising under the Order/Contract, shall be decided by the Purchaser, subject to written appeal by the Vendor to the Purchaser, whose decision shall be final to the parties hereto.
- 4.20.2 Any disputes or differences shall be to the extent possible settled amicably between the parties hereto, failing which the disputed issues shall be settled through arbitration.
- 4.20.3 However, the Vendor shall continue to perform the Order/Contract, pending settlement of dispute(s).

4.21 ARBITRATION

In all cases of disputes emanating from and in references to this agreement the matter shall be referred to the arbitration of the sole arbitration of the Executive Director/ GM of BHEL, Bhopal or any other person (including an employee of BHEL, even though he had to deal with the matter relating to this agreement in any manner) nominated by the said Executive Director /GM to act as sole arbitrator. The arbitration shall be under 'THE ARBITRATION AND CONCILIATION ACT OF 1996' and the rules there under. The arbitrator may from time to times with the consent of the parties enlarge the time for making and publishing the award.

4.22 ACCEPTANCE OF ORDER

Letter of acceptance of the Work order along with Security Deposit (as per clause 4.7) is to be submitted within two weeks of receipt of Work Order.

4.23 ADDITIONAL FACILITY REQUIRED IN FUTURE ON THE SUPPLIED EQUIPMENT

In case any additional facility is required on the supplied equipment requiring upgrade the Vendor shall provide the same at mutually agreed terms. BHEL also reserves the right to extend the contract after expiry of initial period. The extension

will be decided on mutually agreed terms and conditions and will be valid only after written communication to this effect.

4.24 *During the contract period, if expansion of the network is required then vendor shall carryout the work as per rates given in the Work Order on pro-rata basis.*

TECHNICAL TERMS & CONDITIONS

1. The Bidder shall specify Item wise Compliance to Technical Specification and furnish the complete Bill of Material (BOM) with part numbers and quantity for all the products/items mentioned under Annexure-I.
2. The termination/ laying of UTP cables work is to be carried out in all departments of, BHEL, Bhopal premises.
3. The bidder shall provide list of similar type of work done in past for similar type of Network system.
4. Successful bidder shall constitute a project implementation team headed by the project manager. This team will work with BHEL IT team to formulate the exhaustive project implementation plan. This plan shall be ready before the product delivery for faster execution of the project.
- 5. The Bidder shall submit the proposed plan of execution and the methodology to execute the plan at the time of bid submission.**
6. The Successful Bidder shall assign a Project Manager with IT experience of around 3 years as the single point of contact for BHEL with an experience of Implementation of similar type of project.
7. The Successful Bidder shall provide documentation (updated LAN diagrams) after project completion. The vendor shall give documentation of each node upto switch \ Jack Panel. Routing diagram has to be placed on the individual racks. This is necessary for project completion report and acceptance.
8. Once the equipment/items delivered at site, the Project Manager and a team of Project Engineers/members will install, test and document the setup to ensure functionality and compliance to the required technical designs
9. UTP materials should confirm with technical standards Specified brands: Molex/AMP/Avaya.
10. End-to-end UTP accessories (Jackpanel, Cable, I/O & Patch cord) recommended uniformly same brand, any one from (point no. 10) above.
11. Supply & installation should be carried by professionals.
12. Technical clearance shall be obtained from Informatics Center.
13. The Vendor must supply wiring diagram after completion of the work.
14. The Bidder shall be able to ensure the availability of spares of the supplied products.
15. The bidder shall ensure:
 - The density and volume of cables to be organized
 - **The aesthetic appearance** of the cabling within offices and other visible areas
 - Economics of different schemes proximity to power cables and other potential sources of interference
- 16. Vendor to maintain confidentiality of data and services being provided by BHEL**

Technical scope of Work

Total scope of work has three components. **Network material will be supplied by BHEL,Bhopal .**

A. Annual maintenance contract for existing 2800 nodes.

1. Troubleshooting of network problem from edge switches to the node.
2. Testing of the UTP cables in case of any problem.
3. Making working of a network point by either laying and termination of new UTP cable, joining of cable using connector, re-punching of IO box, installation of new of IO box, crimping of RJ45 or re-crimping of RJ45 etc.

B. Installation of expected 1000 nodes for data & voice connectivity.

1. Structured cabling as per standards to be done from rack mounted switches to each node.
2. Termination of each data cable in Input-Outbox box.
3. If request for new nodes is available, then at least 5 nodes per day has to be completed.

C. Laying and termination of the fiber optical cable.

1. Digging and laying of fiber.
2. Installation of fifteen 12 U rack and LIU.
3. Mounting of 60 no. 24/48 ports stackable, manageable switches in rack.
4. Connectorisation / splicing of Fibre cable.
5. Installation of FDF.