

Tender No: EI-D-Tech/55/0002/2013-PD&OA-Part(1)-RF

Dated : 12.09.2013

TENDER DOCUMENT

For

Supply and commissioning of Microwave RF (Ethernet Radios) based point to point and point to multipoint network in unlicensed band for 204 schools and Data Centre/NoC in Srikakulam, Andhra Pradesh.

Due Date for Submission of Bids : 07.10.2013 at 3.00 PM

Date of Opening of Bids : 07.10.2013 at 3.30 PM



Issued By:

ERNET India

(An Autonomous Scientific Society under Department of Information Technology, GoI)

Ministry of Communications & Information Technology

Government of India

10th Floor, Jeevan Prakash Building,

25, K.G. Marg, New Delhi-110 001

SECTION - A**ABOUT ERNET INDIA**

ERNET India, an Autonomous Society under the Ministry of Communications and Information Technology, is a nodal network providing Internet and Intranet connectivity and other value added services to academic and research institutions in the country. It has set up a backbone connecting all metro cities in the country.

ERNET has star VSAT network operating on C-band of INSAT 3C satellite. The hub is located at Bangalore and VSATs at various institutions/organizations all over the country. It has DVB/FTDMA, SCPCDAMA based baseband to provide VSAT connectivity for Internet / Intranet related applications.

ERNET architecture is based on industry standard TCP/IP protocol ensuring connectivity from heterogeneous computer systems and local area networks at user sites. At the application level, all applications conform to international standards such as SMTP, TELNET, FTP, RTP, NNTP and HTTP. The terrestrial backbone and the ERNET satellite Hub currently form a seamless network for applications like Internet, Intranet, distance learning digital library etc.

The emphasis of ERNET is to widen its network and to provide Internet/Intranet access, ICT infrastructure to all education and research institutions in the country.

PROJECT BRIEF

Setting up of e-Learning ICT Centers at 204 schools- in Srikakulam district, Andhra Pradesh: Department of Electronics & Information Technology, Government of India has sanctioned a project to ERNET India to setup e-Learning ICT centers at 204 schools in Srikakulam district of Andhra Pradesh. Under the project, the selected centers will be equipped with Individual Desktop Computers, Printer cum Scanner, LCD projector, Local Area Networking (LAN), Electrical Wiring, Software, e-learning tools, Computer Furniture and Un-interrupted Power Supply (UPS). The ICT centers will help children from rural areas to enhance their creativity, educational and IT skills for higher education and for employment. A data Center/NOC for centrally monitoring and managing the services may also be established. It is proposed that all the 204 schools and datacenter may be provisioned with internet/Intranet connectivity. *The Intranet/Internet architecture for 204 schools (List enclosed at Annexure-VIII) and data Center/NOC shall be designed and deployed maintaining the redundancy of the whole network.*

Invitation for Tender Offers

ERNET India invites sealed tender offers in two bid format (Technical bid and Commercial bid) from eligible and experienced OEM of Microwave Link providers or Authorized System Integrator/Channel Partners/Reseller of such OEMs for Supply, Installation, Training and Maintenance of infrastructure required for commissioning of Microwave RF (Ethernet Radios) based point to point (for Backhaul) and point to multipoint network {Base Station (BS) to Customer Premises Equipment (CPE)} in unlicensed band for 204 schools and data Center/NOC in Srikakulam district of Andhra Pradesh with three years on site comprehensive warranty and Maintenance support from the date of acceptance of the complete work by ERNET as specified in the tender document.

SECTION – B**GENERAL CONDITIONS**

The bidders are advised to study the tender document carefully. Submission of bids shall be deemed to have been done after careful study and examination of the tender document with full understanding of its implications. This section provides general information about the issuer, important dates and addresses and the overall eligibility criteria for the bidders. The aspiring bidders should submit their bids in **compliance with the Tender procedures and Contract terms as prescribed in the following sections of the Tender Document.**

The following instructions should be carefully noted:

1. The bidders are required to bid for all the items detailed in the bill of material. Non compliance to this would disqualify the bidder. Quotations not adhering to the specifications and terms and conditions will be out rightly rejected.
2. The bid can be submitted in consortium. In that case, the main bid will be submitted by prime bidder and a MOU signed by consortium partner on non-judicial stamp paper must e submitted along with the bid
3. OEM / bidder should be ISO 9001:2000 Certified Company. Valid documentary proof should be enclosed.
4. Bidder should have good track record of execution of similar project in India. Documentary proof should be submitted by the bidder. No bidder should have been defaulted in execution of the project. An undertaking by the bidders should be submitted.
5. All the items should be state-of-the art with latest version confirming to International standards. The entire project is to be implemented on turnkey basis, end-to-end i.e. supply, installation and on-site comprehensive maintenance of equipments and application.
6. ERNET India may at its discretion reduce/increase the quantity of the items by 100% or may drop any of the item, as per requirements, in the Purchase Order. However, Lowest bidder will be decided on the basis of total cost of bill of material specified in **Annexure III**
7. The complete bid along with documentary evidence in support of specification of items in BoM should be properly indexed with page numbered & cross-referenced/linked with our tender clause. ***In absence of this bids would be considered incomplete and liable to be rejected without issuing any notification to the bidders.***
8. The firm will be blacklisted, if the bidder submits fake or forged documents/ reports, false undertaking etc in the bid.
9. **Important for all the items to be procured by this tender:**

No technical product (Hardware/ software) should have ***end of life of 05 years or end of sale*** of 3 years from date of quotation. An undertaking must be submitted along with proof of document where end of life and end sale for offered product is mentioned

Specifically for Radio equipments:

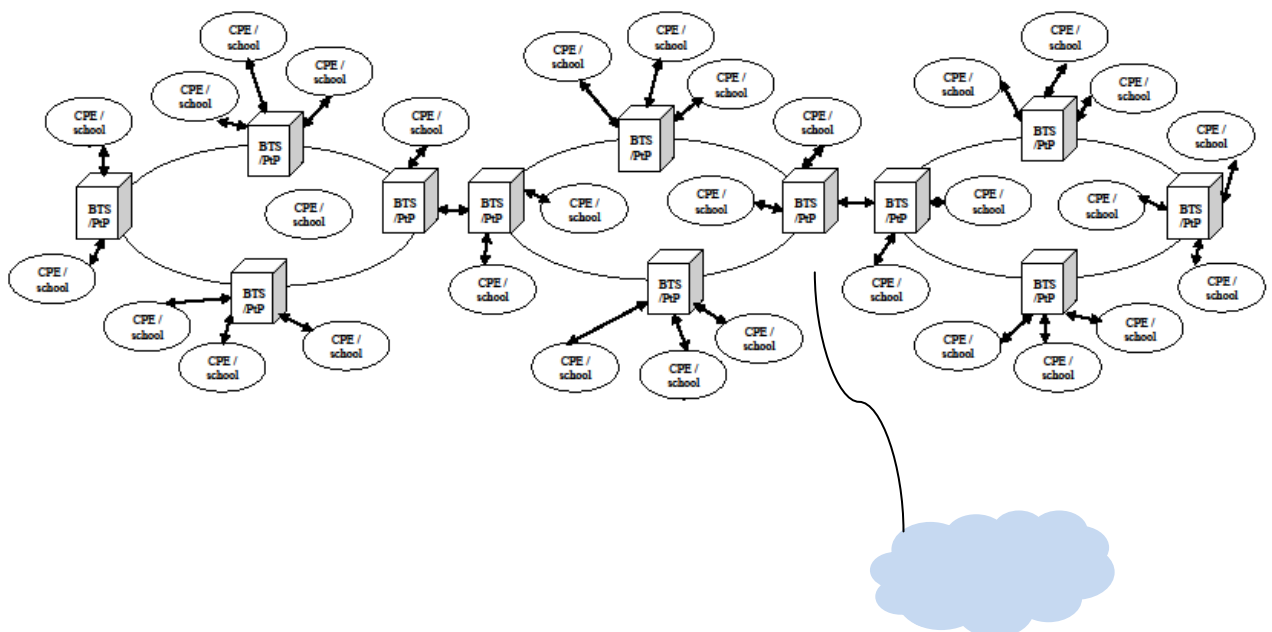
Firm will be responsible to ensure the replacement of radio modems, in case it is burnt, water damage, or stolen and system should be operational without any break down due to these reasons. Bidder will be responsible for any insurance for any specific items.

10. SCOPE OF THE WORK

ERNET under the scope of this tender intends to select a equipment manufacturer / System Integrator / Service Provider to Supply and commissioning of Microwave RF (Ethernet Radios) based point to point (for Backhaul) and point to multipoint network (BS to CPE) in unlicensed band for 204 schools and datacenter/NOC in Srikakulam, Andhra Pradesh and delivery of internet and other traffic deliveries as may be required.

- 8.1 Supply, Installation, Integration & Commissioning of equipments for establishment of Microwave RF (Ethernet Radios) based point to point and point to multipoint network in Unlicensed multiband Band of 5.8/2.4 GHz (Licensed exempted band as per government of India policies) with three years comprehensive warranty and Maintenance support from the date of acceptance of the complete network by ERNET for delivery of various ERNET services as specified in the tender document. For detailed technical requirements bidder needs to refer Section D.
- 8.2 The UPS will be available at sites for supply of power to ICT centres and for RF connectivity. The bidder has to extend the electrical wiring /connections for Microwave RF (Ethernet Radios) based point to point and point to multipoint network operations. The bidder will ensure the related wiring required for the extension of the electrical power to their equipments. The wiring so done must ensure that no wire should be left in hanging position.
- 8.3 To ensure delivery of data, voice and video traffic (video conferencing, multicasting) over the proposed network. However the primary traffic will be of Internet only.
- 8.4 Preparing of solid foundation and erection of Mast/Tower as per requirement keeping view of security measures for school students.
- 8.5 Proactive monitoring of the links and follow up action if link is down.
- 8.6 Preparation and Installation of earthing as per the specifications mentioned in the tender.
- 8.7 To submit complete network diagram detailing how all the base locations will be inter-connected and all remote locations to its based stations in a Point to Multi-point architecture by deployment of specified bill of quantity in the best possible network topology to ensure the following.
 - 8.7.1 A minimum bandwidth of 4Mbps full duplex (08 Mbps aggregate) between all remote stations to its base station on concurrent basis.
 - 8.7.2 Error free transmission of all types of traffic in the proposed network.
 - 8.7.3 To ensure maximum uptime and adherence to the SLA parameters mentioned in the tender for the complete duration of project i.e 3 years.
 - 8.7.4 To connect all the given sites in the proposed network with clear line of site.
- 8.8 To provide training as per requirement of ERNET desires (if any), at any point of time during the period of 03 years or as the case may be.
- 8.9 Bidder will be responsible for integration of Microwave RF (Ethernet Radios) based point to point and point to multipoint network radios connectivity with user LAN for successful delivery of all the traffic up to the first point of user LAN.

- 8.10 To perform the link capacity test to show the availability of committed bandwidth capacity at all links.
- 8.11 Bidder must deliver all the locations on Microwave RF (Ethernet Radios) based point to point and point to multipoint network connectivity as proposed in this tender and no other type of connectivity solution is allowed for any location.
- 8.12 Bidder should design the network in a way that should allow flexibility in terms of any increase bandwidth at all or any location as may be intimated by ERNET later.
- 8.13 It is the responsibility of the successful bidder to get the necessary permission from the local government agencies/regulatory bodies for erection of mast/ tower & implementation of Microwave RF based point to point and point to multipoint network Ethernet radios connectivity to provide the ordered bandwidth to each location.
- 8.14 To provide all services for running of all the traffic between point-to-point and point to multipoint links.
- 8.15 To connect and integrate with the existing user LAN.
- 8.16 To provide three years comprehensive warranty and maintenance support from the date of acceptance of the complete network by ERNET.
- 8.17 Bidders should ensure internet connectivity from one node to other nodes.
- 8.18 **Proposed School Intranet Network**



Note: Backhaul Ring formation should be on PtP only. Last mile connectivity at CPE connecting from base station (BTS) only. No further connectivity for one CPE should be taken from another CPE. However, ring formation may look like above.

- a) The fiber connectivity shall be terminated at NoC for provision of aggregate Internet bandwidth in Srikakulam from there VLAN for all 204 schools will be setup using Layer 3 switch and aggregate Internet bandwidth will be provided to all schools segregating local and Internet traffic. The proposed solution must ensure the redundancy of connectivity.
- b) The redundancy of the whole network must be ensured in proposed solution submitted by prospective bidder.
- c) The unlicensed band 2.4 GHz may be used for creation of backhaul (PtP) while 5.8 GHz for Point to multipoint connectivity or vice versa.

11. Sale of Tender

Tender document can be purchased from ERNET India, New Delhi during 12.09.2013 to 17.09.2013 between 3.00 PM to 4.00 PM every day except for Saturdays, Sundays and Public Holidays, on payment of **Rs. 2000.00 (Two thousand only)** in the form of Demand Draft or Banker's Cheque drawn on/issued by any Nationalized/Scheduled Indian Bank in favour of ERNET India, payable at New Delhi.

The Tender Document can also be downloaded from www.ernet.in during the period 12.09.2013 to 17.09.2013. In such case, an amount of **Rs. 2,000/-** in the form of Demand Draft/Bankers' cheque drawn in favour of **"ERNET India, payable at New Delhi"** would be required to be furnished along with the **Part-I** of the bid.

12. Tenders/Bids placed in sealed envelopes should bear the following inscription:-

Tender Enquiry No.: EI-D-Tech/55/0002/2013-PD&OA-Part(1)-RF

"Bid for the supply & commissioning of Microwave Radio equipments (Ethernet Radio) for setting up of Microwave Radio Links in unlicensed band (5.8GHz and 2.4GHz) in 204 schools/ educational institutions"

Due Date & Time for submission of Bid : 07.10.2013 (3.00 PM)
Due Date & Time for Opening of Bids : 07.10.2013 (3.30 PM)

Tenders/Bids placed in sealed envelopes/covers bearing the information as stated above should be received in ERNET India to the following:

B.B.Tiwari
Director, ERNET India
10th Floor, Jeevan Prakash Building, 25,
Kasturba Gandhi Marg, New Delhi-110 001

13. Clarifications regarding tender document:

- i). The prospective bidders requiring any clarification about the contents detailed in the Tender document may notify ERNET India in writing (**By hand only**) addressed to **Sh. B.B. Tiwari, Director ERNET India**. Clarification sought by the vendors along with ERNET's response will be posted on website www.ernet.in. Accordingly, all the vendors must refer the above website for clarification, if any, before submission of their bids on the due date/time. Queries/Clarifications will be received and responded as per schedule detailed below:

- Issue of Tender Document : 12.09.2013 to 17.09.2013
(3.00 p.m. to 4.00 p.m.)
- Receipt of Queries : Up to 20.09.2013 by 3.00 p.m.
- Pre-bid meeting : 25.09.2013 at 02.:30 p.m.
- Response to Queries* : On 01.10.2013
- Opening of Bids : 07.10.2013 at 3.30 p.m.

* ERNET response to queries would be uploaded on ERNET Website only.

Therefore, all the bidders are requested to refer ERNET's website for the ERNET response to the queries. Bidders are also advised to refer ERNET's website for any further development with regard to the tender before submission of their bids.

- ii). If any bidder wishes to make any complaint/allegations w. r. t tender, bidder may submit the same along with the affidavit on stamp paper of Rs 10.00 as an proof in support of all complaint/ allegation

Important Note: *The queries will be received only by hand within specified period as scheduled; no other mode of communication would be accepted. Any communication after due date and time will not entertained in any manner.*

14. Quotations should be submitted in two separate parts i.e. Part-I (Technical Bid) and Part II (Financial Bid).

Part-I - Technical Bid in one cover, consists of

- (i) In case, the tender document is downloaded from ERNET India's web site i.e. www.ernet.in (not purchased from ERNET India against payment of Rs. 2000.00) then the Bidder should also submit a Tender document fee of Rs.2,000/- in the form of Demand Draft/ Banker's cheque, in addition to EMD.
- (ii) EARNEST MONEY DEPOSIT (EMD) should also be submitted in this cover.
- (iii) Technical specification of the system/services offered along with list of deliverables, literature, pamphlets, drawing etc. This cover should consist of complete technical specifications, make, model, names of supplier/manufacturer and commercial terms etc. of the solution offered. Name of OEM website where offered products (make, model, specifications) are available. Price column in this cover should be kept blank.
- (iv) Complete details of proposed solution Architecture of network
- (v) List of deliverables (without cost) shall be fully reflected in the technical bid.
- (vi) Power of Attorney/Authorization with seal of the company, of person signing the bid documents.
- (vii) Tenderer's company profile, financial status, valid Income Tax Clearance Certificate (ITCC) and last three financial years balance sheets. The bidder has to enclosed the details of the firm as per performa enclosed in tender at **Annexure-V**.
- (viii) Tenderer must submit Service Level Agreement (SLA) as per **Annexure-IV** duly accepted the same by affixing stamp & signature.

Part-II - Financial Bid in second cover, should contain:

- (i) Second cover indicating “**COVER FOR FINANCIAL BID**” should consist of the price details of bill of material specified in Technical Part of the bid. The list of deliverables referred above of all Hardware/ Software, are given at **Annexure-I and II** respectively to setup RF links/ Intranet, should be submitted in separate cover marked "**Financial Bid - Part II**. Rates/cost to be quoted as per **Annexure-III** only.
- (ii) The list of deliverables shall be fully reflected in the price bid.
- (iii) Rates quoted by the bidder shall be final and no negotiation will be held.
- (iv) Tenders once submitted shall be final and no amendment shall be permitted.

Both the covers i.e **Part-I (Technical Bid)** and **Part-II (Financial Bid)** should first be sealed separately, and then both the covers should be kept in a single sealed bigger cover. This cover should be submitted to the “**B.B.Tiwari,Director, ERNET India, 10th Floor, Jeevan Prakash Building, 25, Kasturba Gandhi Marg, New Delhi-110 001**” before due date and time of tender. In case of any missing information on the above, the bid is likely to be rejected.

15. The annual turnover of the bidder over the last three financial years should not be less than Rs. 20 crores. The bidder should be profit making company in last three financial years i.e. 2010-11, 2011-12 & 2012-2013. Documentary proof duly certified by the Chartered Accountant must be enclosed reflecting figures for each individual financial year turnover and profit.
16. Bids should be valid for a minimum period of 180 days after the due date.
17. The Bids must reach the undersigned on or before the due date, i.e., 07.10.2013 at 3:00 PM. Bids received after the due date & time are liable to be rejected. In the event of due date being a closed holiday or declared holiday for Central Government offices, the due date for submission of the bids will be the following working day at the appointed time & venue.
18. The rates should be quoted in Indian Rupees for delivery at ERNET client sites/ schools at Srikakulam. All prices shall be fixed and shall not be subject to escalation of any description. The rates must be quoted as per the Proforma provided in **Annexure-III only**.
19. Govt. Levies like sales tax, VAT etc. shall be paid at actual rates applicable on the date of delivery. These rates should be shown separately accordingly giving the basic price, Sales Tax, VAT etc.
20. The bids with incomplete or no details, no technical literature in support of the product offered will be out rightly rejected. The bidder must quote the products/ items strictly as per specifications. Complete technical details along with make, model number, complete specification, pamphlets, literature of the systems highlighting the special features of their offer should be supplied along with the quotation.
21. It may specifically be mentioned in the form of undertaking by the bidder whether the quotation is strictly as per bid specifications/conditions. If not, deviations must be spelt out specifically. **In the absence of this, the quotation may be rejected.**
22. Please give the Registration number of the firm along with the LST/CST No. allotted by the Sales Tax authorities in your quotation.
23. ERNET India reserves the right to accept or reject any bid or cancel the bid proceedings without assigning any reason whatsoever.
24. Incomplete quotations are liable to be rejected.

25. Bidder shall sign all pages of terms & conditions, solution architecture and quotation along with quotation. All changes, alterations, corrections in the bid shall be signed in full by the person(s) signing the bid with date.
26. The Tenderer shall quote the rates in English language and international numerals. The rate shall be in whole numbers. These rates shall be entered in figures as well as in words. In the event of the order being awarded, the language of all services, manuals, instructions, technical documentation etc., provided for under this contract, will be English.
27. In case of any discrepancy between rates mentioned in figures and words, the latter shall prevail.
28. Transfer of Tender Documents by one Tenderer to another is not permissible. Similarly transfer of tenders submitted by one Tenderer, is not permissible.
29. Bidder must quote for all the items of the BoM in **Annexure-I & as per specification mentioned in Annexure-II**. The bidder not quoting all the items **as per specification mentioned in II will** be summarily rejected. Cost comparison will be made strictly as per Bill of Material specified in **Annexure-III**.
30. ERNET India may waive any minor informality or non-conformity or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.
31. Any attempt of negotiation direct or indirect on the part of the bid with the authority to whom he has submitted the bid or authority who is competent finally to accept it after he has submitted his bid or any endeavour to secure any interest for an actual or prospective bidder or to influence by any means the acceptance of a particular bid will render the bid liable to be excluded from consideration.
32. The bidder shall notify ERNET India in writing of all sub-contracts in case of consortium awarded under the contract, if not already specified in his bid. Such notification, in his original bid or later, shall not relieve the bidder from any liability or obligation under the contract.
33. The bidder must have successfully executed, implemented and delivered the governments projects in time; satisfactory commissioning report of such project along with the PO of that project must be submitted. The bids submitted by the bidder, which were incapable to deliver the projects/work in time awarded by ERNET India in past will not be considered.
34. Inspection

ERNET India or its representative(s) shall have the right, if required, to inspect or to test the items to confirm their conformity to the ordered specifications. The supplier shall provide all reasonable facilities and assistance to the inspector at no charge to ERNET India. In case any inspected or tested goods fail to conform to the specifications, ERNET India may reject them and supplier shall either replace the rejected goods or make all alterations necessary to meet specification required free of cost to ERNET India.
35. Earnest Money Deposit
 - (a) Each quotation must be accompanied by Earnest Money Deposit of amount as stated below and shall be in the form of Demand Draft/Pay Order/Bank Guarantee of any Nationalized/scheduled Bank taken in the name of Chief Finance officer, ERNET India, New Delhi. Bank Guarantee should be valid minimum for a period of 180 days from the original due date of the quotation. **Quotations received without Earnest Money Deposit are liable to be rejected.**

Amount of Earnest Money Deposit for bidding is Rs.10.00 lakhs (Rupees Ten lakhs only).

- (b) Any tender not accompanying with EMD and tender fee (if tender document is downloaded from website) will be considered non responsive and rejected. The public sector companies will also have to deposit the required tender fee and EMD specified above.
- (c) Earnest Money is liable to be forfeited and bid is liable to be rejected, if the bidder withdraw or amends, impairs or derogates from the bid in any respect within the period of validity of the bid.
- (d) Earnest Money is liable to be forfeited, if the bidder submits fake or forged documents or fake claims, fake reports, false undertaking etc in the bid.
- (e) The earnest money of all the unsuccessful bidders will be returned as early as possible after the expiration of the period of the bid validity but no later than 30 days of the issue of the purchase order. No interest will be payable by the Purchaser on the Earnest Money Deposit.
- (f) If the successful bidder fails to furnish the Performance Security (refer para 36) within 15 days of the placement of the purchase order, the earnest money shall be liable to be forfeited by the purchaser.
- (g) The Earnest Money of successful bidder shall be returned after furnishing of Performance Security

36. Performance Security

The successful bidder shall submit a Performance Security of 10% of the cost of the purchase order valid for the duration of warranty period (3 years) within 15 days of the placement of purchase order. The Performance Security may be in the form of Demand Draft/Pay Order/Bank Guarantee of any nationalized bank. In case supplier fails to deliver the items within delivery period or provide satisfactory after sales service within the warranty period, the Performance Security submitted by the firm is liable to be forfeited. Performance Security shall be released immediately after the onsite free comprehensive warranty for three year of all supplied Hardware/Software, is over. No interest will be payable by ERNET India on the Performance Security.

37. Guarantee/Warranty

- (i) All goods or material shall be supplied strictly in accordance with the specifications. No deviation from such specifications of these conditions shall be made without ERNET agreement in writing which must be obtained before any work against the order is commenced. All materials furnished by the successful Bidder pursuant to the Order (irrespective of whether engineering/design or other information has been furnished, reviewed or approved by ERNET) are guaranteed to be of the best quality of their respective kinds (unless otherwise specifically authorized in writing by ERNET) and shall be free from faulty design to the extent such design is not furnished by ERNET. The goods/materials used by the successful Bidder and its workmanship should be of proper quality so as to fulfill in all respects the operating conditions and other requirements specified in the order. Warranty i.r.o. all the equipments shall be for a period of **three years** from the date of acceptance of equipments/materials, application, except consumable items.
- (ii) If any trouble or defect originating with the materials, workmanship or operating characteristic of any materials/application arise any time prior to 12 months after commissioning, and the Bidder notified thereof, the Bidder at his own expense and at no cost to ERNET as promptly as

possible make such alterations, repairs and replacements at site as may be necessary for the functioning of the equipment in accordance with the specifications.

- (iii) ERNET may at its option remove such defective material at the Bidder's expense, if the Bidder does not act reasonably after being informed.
- (iv) In the event that the materials supplied do not meet the specifications and/or are not in accordance with the requirement, ERNET shall inform the Bidder giving full details of deficiencies. The Bidder shall attend at his own expense to meet and come to an agreement with the representatives of ERNET the action required to correct the deficiencies and do the rectification/replacement to make the system functional as per specifications within a week of ERNET written information to the Bidder failing which the ERNET may en-cash the Bank Guarantee.
- (v) Warranty shall include on-site comprehensive free maintenance of the whole equipment supplied including free replacement of all parts. The defects, if any shall be attended to on immediate basis but in no case any defect should prolong for more than 96 hours. The on-site comprehensive warranty shall be for a period of three year from the date of acceptance of the equipment by ERNET India.

38. AMC

All the prospective bidders may also quote for AMC of all hardware/software, for a period of one year after the completion of warranty period of 3 year. ERNET India reserves the right to extend the said AMC to 3 years at the quoted price. It is however, clarified that only one year AMC price would be included for price comparison and in deciding L1 bidder. A separate PO for AMC will be issued after warranty, if required.

39. Delivery Period

- The Delivery and installation of hardware and software at the site is required within **6 months** of placement of the purchase order.

However, the progress of the work order must be as per following schedule:

- (i) Month 1:
- Proof of order placement to OEM
 - Site survey report,
 - Mast erection at 10 sites
- (ii) Month 2:
- Mast erection at 40 sites
- (iii) Month 3:
- Erection of Mast at 50 sites
 - Delivery of RF Links: 50 sites
- (iv) Month 4:
- Erection of Mast at 50 sites
 - Delivery of Intranet RF Links at 50 sites
- (v) Month 5:
- Installation completion at all remaining sites
 - Delivery of RF Links at 100 sites
 - Erection of remaining Masts
 - Delivery of RF Links at remaining sites
- (vi) Month 6: Fine tuning of Intranet, Internet etc and application testing

Delivery report countersigned by user shall be submitted within 10 days from Date of Delivery. Any delay by the supplier in the performance of delivery of items shall render the supplier liable to any or all of the following sanctions-forfeiture of its Earnest Money Deposit, imposition of liquidated damage as per para 41 below or/and cancellation of the purchase order for default.

- Any delay in the supplies/installation would be reported to ERNET India and specific prior approval for delay with justification would be taken on case-to-case basis.
- Delay due to non readiness of the site or due to any natural disaster will not be considered for liquidated Damages

40. Force Majeure

Neither Vendor nor ERNET India shall be liable for any delay in or failure of discharging respective obligations under this tender caused by occurrence beyond their control, as the case may be, including but not limited to fires, floods, explosions, power shortage, failure / breakdown of UPS / computer, acts of GOD, hostility, act of public enemy, wars, insurrections, riots, strikes, lockouts, sabotage. Either parties shall promptly but not later than 10 days of the commencement thereof notify the order in writing of such contingency and prove that such is beyond the control and affects the implementation of this tender conditions adversely and materially. If such contingency continues beyond 30 days both parties, agree to discuss and agree upon an equitable solution

41. Liquidated Damages

If the supplier fails to deliver any or all of the goods, or do not complete the installation within the period specified in the purchase order, ERNET India shall without prejudice to its other remedies, deduct as liquidated damage 1 per cent of the price of the delayed goods for every week subjected to maximum of 10% . If the company failed to complete the installation of entire project and declared defaulted, the company shall be black listed for future business with ERNET India or disqualified for the consideration of their bids in future.

42. Preferential Market Access

Preference to domestically manufactured electronic & Telecom products for IT equipments:

Domestic manufacturers will be given preference to domestic products that meet the minimum levels of domestic value added as stipulated by the notification issued by Government.

Vendor may refer PMA policy issued by Government vide Notification No. 8(78)/2010-IPHW dated 10.2.2012 and also refer other notification(s)/guideline(s) at <http://deity.gov.in/esdm#pma> for electronics goods for providing preference to Domestically Manufactured Electronic products (DMEP) issued from time to time till date of publication of this tender document regarding Electronic Products for which preference will be provided to domestic manufacturer

Guidelines w.r.t. Electronics products to be covered under PMA

- For the items specified under PMA guidelines which are being procured through this tender as per BoM .
- Vendor may declare the procedure for certification and assessment of the percentage of domestic value addition in electronic product

- The preference to DMEP shall be subject to meeting technical specifications and matching L1 price (in case DMEP bidder is not L1).

Note: *The Affidavit of self Certification regarding Domestic Value Addition in an Electronic Product to be provided on Rs. 100/- Stamp paper for DMEP as per Annexure-VII.*

43. Service Level Agreement

The bidder will sign Service Level Agreement, which will be renewed each year on the basis of performance of the vendor. The Service Level Agreement is placed at **Annexure-IV**. This SLA must be submitted in the technical bid, duly signed in lieu of acceptance of SLA terms.

44. Rejection & Return of Tender

ERNET India, an Autonomous Society of Department of Electronics & Information Technology, Ministry of Communications and Information Technology (hereinafter abbreviated as ERNET respectively) reserve the right to reject any or part of the Tender without assigning any reason. The documentation submitted by Tenderers shall not be returned unless the Tenderer explicitly states this request at the time of submission of their Tender. ERNET also reserves the right at its sole discretion, not to award any order under the Tender called. ERNET shall not pay any costs incurred in the preparation and submission of any Tender. Also tender of the bidder who have defaulted in execution of previous purchase order in implementation of such project will be rejected.

If the Tenderer gives wrong information in his Tender, ERNET reserves the right to reject such Tender at any stage or to cancel the Contract, if awarded, and forfeit the Earnest Money besides other remedies.

Canvassing in any form in connection with the Tender is strictly prohibited and the Tenders submitted by the Contractors who resort to canvassing are liable for rejection.

45. Modification and Withdrawal of Bids

The Tenderer may modify or withdraw its bid after the bids submission, provided that written notice of the modification or withdrawal is received by the Purchaser prior to the last date prescribed for receipt of bids.

The Tenderer's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of the tender. A withdrawal notice may also be sent by fax or but followed by a signed confirmation copy, post marked not later than the last date for receipt of bids.

No bid shall be modified subsequent to the last date and time for receipt of bids.

No bid shall be withdrawn in the interval between the last date for receipt of bids and the expiry of the bid validity period specified by the Tenderer in the Bid. Withdrawal of a bid during this interval may result in the Tenderer's forfeiture of its bid EMD.

46. Payment Terms

Payment shall be made by ERNET India to the selected Bidder as per the following schedule. The payment shall be made by cheque to the Suppliers. The payment shall be released as under on the satisfactory completion and performance certification issued by the concerned ERNET authorities. However, payment shall be made only after the successful execution and acceptance of all the equipments, software/ application:

1. 70% of material (H/W, S/W, etc) cost shall be paid after Supply, Installation, Integration, commissioning and Acceptance Testing of the equipments as per scope of work.
2. In case of release of 70% of equipment cost, the remaining 30% will be released after the end of 3 years of warranty period or 100% on installation and acceptance by ERNET India subjected to fulfilling all the following conditions;
 - a) 10% will be released: If the firm submits the Performance Bank Guarantee of the amount equivalent to 10%, which should be valid for the period of warranty (i.e. three years) as well as receipt of pre-receipted bill in triplicate.
 - b) Another 10% will be released: If the firm submits the Bank Guarantee of the amount equivalent to 10%, which should be valid for the period of two year as well as receipt of pre-receipted bill in triplicate.
 - c) The remaining 10% will be released: If the firm submits the Bank Guarantee of the amount equivalent to 10%, which should be valid for the period of one year as well as receipt of pre-receipted bill in triplicate.

I.e, Three Bank Guarantee each of 10% of the cost of purchase order will be required to be submitted at ERNET India for release of 100% payment having validity of Three year, Two year and One year respectively from the date of acceptance of equipments/materials

3. Any deduction from the payment due to non-compliance of the SLA parameters will be adjusted from the next payment due or Performance security based on the ERNET decision.
4. All the payment will be credited into firm's/ bidder's account electronically (NEFT). Hence, bidders may provide bank details like branch, account number, IFSC code etc. No payment will be made through cheque.
5. Payment will be done within 45 days after submission of bills along with the acceptance and installation report by the vendor.

47. Pre-qualifying Requirement (PQR) - Additional general conditions

Sl. No	Conditions	Compliance (Mention & submit supporting documents)	Document Ref. Page No.
1.	OEM should have component level service centre/ technical support centre in Delhi or near Srikakulam/ Visakhapatnam and must stock spares of the supplied item in India. (Details of office and stock depot to be provided)		
2.	Bidder should have Customer Support centre/ Technical support office or undertaking to open within one month of the award of the project in the city of Delhi, Srikakulam/ Visakhapatnam . Details of such offices with contact person name and number may be provided in the bid.		
3.	Bidder should be a registered firm or company under company registration act 1956 or registered society under society registration act 1860.		
4.	Bidder should be an OEM or OEM Authorized system integrator/ service provider. Bidders must submit tender specific authorization from OEM for support and supply of spares during Warranty and maintenance period.		

5.	All the quoted microwave wireless based Ethernet radios equipments must be FCC, ETA/WPC approved (certificate to be provided)		
6.	In order to ensure proven-ness of the offered equipments, the offered OEM should have supplied and installed the same make/or brand of radio equipments for at least 500 links in India. (supply order from OEM and completion certificate to be provided)		
7.	Bidder should have similar work experience of 5 years from the date of release of this tender. (order copies to be provided) i.e. PO issuer Name, PO copy, Value of PO, Completion Certificate (If any)		
8.	The bidder should not have been blacklisted in the past from any Central/State Government organization/ across India. An undertaking in this regard should be submitted by the bidder.		
9.	Bidder should have the experience of successfully executing atleast three orders of similar work in microwave connectivity (R.F.) in last 5 years of value not less than INR 1 crores of each order. OR two orders of value not less than 1.5 crores of each order. Order copies and their Letter of Execution / Completion Certificate from client should be submitted as documentary proof for the same.		
10.	Bidder should have successfully executed similar work of value not less than 5 crores in total in last 5 years. (order copies and completion certificate to be provided)		
11.	Bidder should have at least 2 OEM certified engineers on their roll for specialized service support. (Details of engineer along with their CV to be submitted)		
12.	The bidder should be a profit making company from the last 3 consecutive years and have Annual Turnover for the last three financial Years should be minimum Rs. 20 Crores in total. (balance sheet along with CA certificate in respect of turnover and profit to be provided) i.e. for FY, 2010-11, 2011-12, 2012-13		
13.	Bidder should have toll free no. for registering complaint and number must be provided in the bid. In case bidder don't have the same then an undertaking must be enclosed in the bid that if tender is awarded to the bidder, then the said facility will be provided.		

Similar Order means “Supply, Installation, Integration & Commissioning of RF equipments for establishment of Point to Point and Point to Multipoint Network in the Unlicensed Band in India with 1 years on site comprehensive warranty and Maintenance support.”

SECTION – C

Evaluation of bids

The Tenders received and accepted will be evaluated by Evaluation Committee framed by ERNET, to ascertain the best and lowest evaluated Tender in the interest of Project for the complete scope of the proposal. The bids qualifying all the criteria of one stage will be preceded to next stage for further evaluation as per sequence mentioned below. In case any bid is unable to qualify the criteria specified at any stage, it would be rejected and will not be preceded for further evaluation.

- Stage-1: Evaluation at Opening of bids
- Stage-2: Technical Evaluation of bids
- Stage-3: Commercial Evaluation of bids

Stage-1: Evaluation at opening of Bids

The bids (as per para 14 of Section-B, Part-I Technical bid) will be opened in presence of those Bidders or their authorized representatives who present themselves at the time of opening of the Tender and who wish to attend. The following evaluation will be carried out, in case of any of the mentioned criteria is not complied the bids would not be preceded to next stage for technical evaluation and will be considered as rejected:

- Tender document must consist of EMD, and tender fee (in case of tender downloaded from ERNET website), in absence of this bids would be rejected immediately.
- Compliance statement in the form of “complied or not complied” should be given against each statement and specification of the tender. Tender document should be supported by authentic documents; documentary evidence should be page numbered and cross-referenced / linked with our tender clause Nos and specifications.
- Complete tender document, all the terms & conditions, specification of items mentioned in tender shall be duly signed & stamped by authorized person assigned by the firm. The bid should be properly binded, no loose paper should be present in bid.
- Each page of the Bid and cuttings/corrections shall be duly signed and stamped by the Bidder. Failure to comply with this requirement may result in the Bid being invalidated.
- Tenderer’s company profile, financial status as per performa enclosed at Annexure-V, must be enclosed with turnover of last three financial year certified by Chartered Accounted.
- Undertaking letter as per serial no.4, 9, 21 and 47 (Sl. no 2 & 8) of section-B must have been submitted in Technical part of the bid.

Stage-2: Technical Evaluation of Bids

The bids qualifying the stage-1 mentioned above will be considered for technical evaluation. The following evaluation would be carried out.

- The bidder must have submitted compliance of all the qualifying criteria as mentioned in Pre-qualifying Requirement (PQR), the authentic supported documents must be placed in bid and reference page no at which these documents are placed in file must be mentioned.
- Compliance statement in the form of “complied or not complied” should be given against each specification of items asked in the tender at **Annexure-II**. In support of compliance, tender document should be supported by authentic documents; documentary evidence should be page numbered and cross-referenced / linked with specifications.
- The solution proposed by bidders must be similar as specified at Sl. 8.18 of the scope of work. It may specifically be noted that, *Backhaul Ring formation should be on Point to Point (PtP) only. Last mile connectivity at Customer Premises Equipment (CPE) must be connected from base station (BTS) only. No further connectivity for one CPE should be taken from another CPE.*

Tender No: EI-D-Tech/55/0002/2013-PD&OA-Part(1)-RF

Dated: 12.09.2013

- The bidder must explicitly mention, the detailed architecture of proposed solution maintaining the redundancy of network. All the documents in its support must be enclosed in bid with detailed literature.
- Technical evaluation of the Hardware, software will be compared as per the specifications. All the specification must be in compliance as mentioned tender document.
- As mentioned in column "Remarks/ Document Ref. page No." of Annexure-II of specification of items proof or certificate must be enclosed.
- Bench test of offered product by bidder may be (or may not be) carried out for all/few specification mentioned in the tender document, it depends on sole discretion of ERNET India.
- Technical field testing of radio equipment for throughput will be carried out as per following plan

Sites: location and Masts will be provided by ERNET at the time of field testing

Last mile CPE radio	: 4Mbps (full duplex) throughput at 25 Km from BTS
PtP Backhaul radio	: 100 Mbps (full duplex) throughput at 20 Km
	: 70 Mbps (full duplex) throughput at 30 Km
	: 60 Mbps (full duplex) throughput at 40 Km

- The bids found technically acceptable and successful field testing will be considered for next stage of commercial evaluation

Stage-3: Commercial Evaluation of Bids

The bids qualifying stage 2 will be considered for commercial evaluation.

- The cost comparison of will be made of the solution as per specified format Annexure-III.
- The bidder with lowest price shall be empanelled for the execution of the project work.

Yours faithfully,



(B.B.Tiwari)
Director

Annexure I

SECTION D: Bill of Material

Microwave RF links in unlicensed ISM band to setup Intranet at 204 locations

BoM for dedicated Connectivity to schools (one time H/w, S/w for 204 schools & Data Center/NOC through wireless RF (Minimum 4 MB full duplex (aggregate 8 Mbps) assured last mile connectivity), Base Mast, RF radios, foundation, earthing etc

S.No.	Item	Qty
1.	Point to Point equipment for backhaul	42
2.	Point to Multipoint (at BTS) *	21
3.	Point to Multipoint CPE	184
4.	24 port Layer 3 switch	01
5.	NMS to manage RF links	1
6.	Earthing for Mast	205
7.	Guy Mast (6 meters to 54 meters high)	205
8.	PoE Cables (Cat 5e)	30000 Mts
9.	Router	01

*The quantity of BTS and PtP may vary slightly as per site/network requirement. Accordingly CPEs shall be adjusted. Payment for all the items will be done on actual basis. Hence, bidder may offer their own BoM along with network solution and billed accordingly, however, the L1 calculation will be done as per price performa at Annexure-III.

Annexure-II

Specifications of items with respect to Microwave RF links mentioned in Bill of Material

1. Point to Point equipment for backhaul specification

Sl. No	Specification	Compliance (Yes/ No)	Remarks/ Document Ref. page No.
1.1	Each set supplied is to comprise of two independent Radios with antenna, cables, IDU,ODU		
1.2	The individual system should comprise of outdoor & indoor equipment, antenna, cables (RF/IF) with connectors, system software required for operation, monitoring & configuration of the link.		
1.3	It shall be a carrier type Point-to-Point Broadband Wireless Access radio system, with 99.9% reliability		
1.4	The system should be of reliable and field proven design and suitable for harsh environmental conditions. Outdoor Radio equipment must be IP-67 compliant & certified		Attach certificate from Govt. authorized agency.
1.5	The system shall support Flexible Quality of Services and concurrent use of IP, VoIP & Video.		
1.6	Should work in ISM unlicensed frequently Band 2.4 or 5.8 Ghz unlicensed band. 2.4 or 5.8 GHz may be reserved for backhaul { Please refer 8.18 (c) }		
1.7	Capable of Channel Bandwidth selection of 5MHz 10 MHz,20MHz,40MHz with 5 MHz steps.		
1.8	EIRP as per WPC norms (36 dBm)		
1.9	Should have a support for dual pole (MIMO) External Antenna to provide higher capacity. Should support Antenna diversity. in order to Run the link under frequency interference environment		
1.10	Flexible symmetric link supporting up to 50:50% UL/DL in either direction for enabling different applications like voice, video and data		
1.11	LAN Data entry compliance: IEEE 802.3		
1.12	Modulation schemes:- BPSK,QPSK,16-QAM,64-QAM-MIMO OFDM with forward error correction (FEC)		
1.13	Transmit power control- within allowable EIRP as per WPC regulations		
1.14	Built in spectrum analyzer. Radio unit must have in-built software GUI based spectrum analyzer for RF spectrum analysis to determine noise level existing at a site for ease of installation. Radio should capable to capture both side (local and remote) spectrum view.		
1.15	Radio equipment should have site management and link management facility (software) for initial configuration. Installation and maintenance using single computer /LCT for a complete link.		
1.16	Radio technology-TDD OFDM		

Sl. No	Specification	Compliance (Yes/ No)	Remarks/ Document Ref. page No.
1.17	Should support TELNET/SNMP based / NMS with SNMP Agent: SNMP VI/V2/V3 client, MIB II, Bridge MIB		
1.18	VLAN Support: Based on IEEE 802.1Q, 802.1P and QinQ Tagging/un-tagging		Must submit proof
1.19	QoS- IP ToS/DSCP/DiffServ. Classification based on services/VLAN (4 Queue)		Must submit certificates
1.20	Security: AES-128-bit authentication. The radios should have the capability for locking MAC address. System should be FIPS -197 certified		Must submit Certificate from certified agency without any cost
1.21	Should support AC/ DC/ solar power supply source		
1.22	Should have facility to upgrade Software/firmware over the air.		
1.23	Minimum distance upto 70 Km & Radio should support 200Mbps usable throughput up to 5 Km { 34 Mbps (full duplex) at 70 Km 70Mbps (full duplex) 40 Kms 90 Mbps (full duplex) 25 Km }		
1.24	Radio should support and store performance logs for and up one month.		
1.25	Regulation Standards- WPC (India)/FCC		
1.26	Latency <5mSec		
1.27	Safety: UL 60950-1,EN 60950-1		Attach certificates from Internationally accredited lab
1.28	EMC FCC part 15 class B		Also certificates from Authorized agencies.
1.29	Operating temperature (a) Outdoor Unit- -40° to 55°C (b) Indoor Unit- 0° to 40°C		
1.30	Audible Buzzer/ LED for Antenna alignment		
1.31	Collocation Synchronization support.		
1.32	Equipment should support protected Ethernet ring topology		
1.33	Offered system should be supported with RF planning tool for ease of RF planning		
1.34	Outdoor Radio equipment should be coated with special anti-corrosion paint for deployment in coastal areas		
1.35	Proposed radio system should support PPS of 250000 bytes or higher		
1.36	Jumbo frame – upto 1800 Bytes or more		

2. Specification for Base Stations (BS)

Sl. No	Item/ Specifications	Compliance (Yes/ No)	Remarks/ Document Ref. page No.
2.1	Base Station Net Aggregate usable capacity per base station sector: upto 250 Mbps		
2.2	Frequency band: 5.8 GHz unlicensed – WPC { Please refer 8.18 (c) }		
2.3	Power – Power over Ethernet		
2.4	Range: Minimum 30 Km		
2.5	Channel Bandwidth: 5,10,20,40 MHz		
2.6	Modulation: 2x2 MIMO-OFDM (BPSK/QPSK/16QAM/64QAM)		
2.7	Adaptive Modulation & Coding		
2.8	Sector Bandwidth Allocation Configurable: Symmetric or Asymmetric		
2.9	System should support Smart bandwidth management allocating unused bandwidth dynamically to other users to enjoy capacity enhancement		
2.10	Regulation compliance : As per WPC		
2.11	Inbuilt software base Spectrum Supported at BS & CPE both		
2.12	Max Tx Power 23 dBm or higher at Base Station & Subscriber Unit (CPE)		
2.13	Duplex Technology : TDD		
2.14	TDD Synchronization Inter & Intra site synchronization		
2.15	Encryption : AES 128 bit, FIPS-197 certified		<i>Attach certificate</i>
2.16	Ethernet Interface: 10/100/1000BaseT		
2.17	QoS: Packet classification to 4 queues according to 802.1p and Diffserv		
2.18	VLAN: 802.1Q, 802.1P, QinQ		
2.19	Management : SNMP, Telnet, HTTP		
2.20	NMS support		
2.21	Power over Ethernet (POE)		
2.22	Operating Temperatures: -35°C to 60°C		
2.23	Humidity: 100% condensing, IP67		
2.24	Radio regulations:		<i>Submit documents</i>
	FCC , WPC		
	Safety: FCC/IC, EMC: FCC		
2.25	Offered system should be supported with RF planning tool for ease of RF planning		
2.26	Outdoor Radio equipment should be coated with special anti-corrosion paint for deployment in coastal areas		

Sl. No	Item/ Specifications	Compliance (Yes/ No)	Remarks/ Document Ref. page No.
2.27	Latency – Should be below 30 mSec		
2.28	Proposed BS radio system will support PPS of 250000 bytes or higher		Testing will be done at bench
2.29	Jumbo frame –1800 Bytes or Higher		

3.0 Specification for Subscriber Premises Equipment (CPE)

SNo.	Specification	Compliance	Remarks/ Document Ref. page No.
3.1	CPE: Aggregate Bandwidth: Assured dedicated bandwidth of 8Mbps (4 Mbps full duplex) to be delivered at last mile		
3.2	Frequency band: 5.8 GHz unlicensed - WPC		
3.4	Range: Min 30 Km		
3.5	Channel Bandwidth: 5,10,20,40 MHz		
3.6	Modulation: 2x2 MIMO-OFDM (BPSK/QPSK/16QAM/64QAM)		
3.7	Adaptive Modulation & Coding		
3.8	Sector Bandwidth Allocation Configurable: Symmetric or Asymmetric		
3.9	System should support dynamic bandwidth management allocating unused bandwidth dynamically to other users to enjoy capacity enhancement		
3.10	WPC compliance		
3.11	Inbuilt software base Spectrum analyzer Supported at BS & CPE both		
3.12	Max Tx Power 23 dBm or higher at Base Station & Subscriber Unit (CPE)		
3.13	Duplex Technology : TDD		
3.15	Encryption : AES 128 bit, FIPS-197 certified		Attach certificate
3.16	Ethernet Interface: 10/100 BaseT		
3.17	QoS: Packet classification to 4 queues according to 802.1p and Diffserv		
3.18	VLAN: 802.1Q, 802.1P, QinQ		
3.19	Management : SNMP, Telnet, HTTP		
3.20	NMS support		
3.21	Power over Ethernet (POE)		
3.22	Operating Temperatures: -35°C to 60°C		
3.23	Humidity: 100% condensing, IP67		
3.24	Radio regulations:		Submit documents
	FCC , WPC		
	Safety: FCC/IC, EMC: FCC		

3.25	Outdoor Radio equipment should be coated with special anti-corrosion paint for deployment in coastal areas		Undertaking must be provided
3.26	Latency – Should be below 30 MSec		
3.27	PPS for CPE 50000 Bytes or higher		
3.28	Jumbo frame – 1800 Bytes or Higher		
3.29	Audible Buzzer/LED for Antenna alignment		

4. 24 Port Ethernet Layer 3 Rack Mountable Switch

Sl. No	Specifications	Compliance (Yes/ No)	Remarks/ Document Ref. page No.
1	80 Gbps or higher Backplane capacity and minimum 60 Mbps of forwarding rate		
2	Minimum 24 ports 10/100/1000		
3	Minimum 9 switches should be stackable and managed through single IP address.		
4	Non-blocking and distributed forwarding hardware architecture		
5	Switch should be configured with redundant power supply		
6	Switch should support high availability features like GRES, graceful restart of protocols, hot swappable uplink modules		
7	All interfaces should provide wire speed forwarding for both Fiber and copper modules.		
8	Support for AC and DC power-supplies		
9	Switch should support minimum 2000 active VLAN's./ VLAN translation		
10	Switch should support minimum 12 k Mac address.		
11	Switch should support Layer-2 protocols like 802.1p,802.1s, 802.1Q tunnelling, 802.1w, 802.3ad		
12	Switch should support DHCP server and relay capabilities		
13	Switch should support 802.1x based authentication		
14	Switch should support IP source guard & dynamic arp inspection,		
15	All the routing protocols like Static, OSPF, RIP, Policy based routing should be provided from day-1 & multicast protocols like PIM-SM, SSM, IGMP V1,V2,V3,		
16	Switch should support hardware based QOS mechanisms like 802.1p, DSCP, auto VLAN, and traffic shaping		
17	Switch should support IPv6 from day one		
18	Switch should support SNMPv3, ACL's based IP address , protocol, port number etc		
19	Should support port mirroring based on VLAN's or multiple ports to one port		
20	Switch should have GUI based management.		
21	Ethernet over MPLS (EoMPLS), and Hierarchical Virtual Private LAN Service (H-VPLS) support and redundant AC or DC power.		
22	Layer 3 VPN Using Multi-VRF CE		
23	Layer 3 VPN Using MPLS VPN		
24	Layer 2 VPN Using VLAN Translation		
25	Layer 2 VPN Using EoMPLS and Layer 2 VPN with H-VPLS Architecture		

5. Network management System to manage RF links

S No	Specifications	Compliance (Yes/ No)	Remarks/ Document Ref. page No.
5.1	NMS to manage RF links		
5.2	Automatic & Manual device discovery of all network elements such as Base Station, CPEs etc. System shall keep details of all the network elements.		
5.3	Ease of Use : It shall provide intuitive GUI interface and a comprehensive, context sensitive user guide/ help system		
5.4	Filters & Searching :Shall be possible to use pre-defined custom filters for searching entities such as alarms, Base Stations, CPEs etc through NMS		
5.5	Security: Support for both user based and role based authorisation to limit and control access to NMS		
5.6	DEVICE MANAGEMENT		
	<ul style="list-style-type: none"> a) Automatic & Manual device discovery of all network elements such as Base Station, CPEs etc. System shall keep details of all the network elements. b) Fault Management: Alarms to be collected from the entire network and stored within the database and displayed using filters in the alarm view. It shall be possible to view alarm history database Performance management of network elements c) NMS shall be capable of mapping PTP & PTMP radios in the same single NMS 		
5.7	SYSTEM ADMINISTRATION		
	<ul style="list-style-type: none"> a) Addition/change/configuration/ verification/removal/ management of end user and role based accounts (username, password, etc) into the database. b) Addition/change/configuration/ verification /removal/ management of network elements into the database. c) Shall be able to control and limit operators' authorization, rights and privileges. Administrator is an account with full control, rights and privileges. d) Access control procedures shall allow classification of operators groups with common access rights characteristics with possibilities to restrict and extend the common access rights for single user. e) Restriction of access to specific Group of network elements shall be possible. f) Log shall be available for all traps between NMS and the Network Elements. 		
5.8	SYSTEM MANAGEMENT		
	<ul style="list-style-type: none"> a) It shall be possible to install, upgrade and correct the software centrally for all network elements i.e Base station, CPEs etc b) Performance management of interfaces on all the network elements c) System shall have centralized bandwidth management. d) NMS system should be capable of generating trend reports, on Air/ Ethernet interfaces 		

6. Chemical Earthing for Mast (RF links)

Sl. No	Specification	Compliance/ Yes/ No	Remarks/ Document Ref. page No.
6.0	There should be Earthing system for Lightning Arrestor and Wireless Equipment/Network equipment(including wireless tower/mast/pole).		
6.1	Chemical electrode (consisting of K type copper pipe/strip of 1.5 inch dia, having capacity of approx. 45 kg chemical)		
6.2	Base chamber 4*10 ft		
6.3	Metal strip of 1.5 inch dia (if required ,for extra use other than those used in chemical electrode		
6.4	PVC Pipe (dia 20 mm)		
a.	Single electrode earthing to guarantee earthing resistance of 2 ohms max.		
b.	Possible to get less than 0.5 ohms earthing resistance		

7 Guy Mast for RF Links

Sl. No	Specification	Compliance/ Yes/ No	Remarks/ Document Ref. page No.
i)	Appropriate Guy wire Mast ((1.0" B Grade GI Pipe, 6mm Guy Wire, 8mm Bracing Rod, 40/4 mm Flench, including Copper Lightning Arrestor, LED Aviation Light, 6 MM Copper Earthing Wire from Lightning Arrestor to Earthing Pit) for various Mast heights		
ii)	Wind velocity : Support 160 KM per hour wind velocity		
iii)	Aviation Light : Each tower will have a aviation light with wiring properly fixed to sustain wind velocity.		
iv)	Grounding : Each tower to have a copper lightning arrestor on top properly grounded using metallic strip/wire from top to bottom.		
v)	Mast should be provisioned with climbing arrangement. Corrosion free paint must be applied on the whole mast		

8. Router

SL. No.	The Router shall meet the following general specifications	Compliance	Remarks/ Document Ref. page No.
1.	Specifications:		
i)	The router shall have 1+1 redundant power supply. One power supply should be able to support a fully loaded router chassis.		
ii)	The line cards of the router shall be full online insertion and removal capable. Online insertion, removal and failure of a line card shall not affect any unicast and multicast traffic passing through the other line cards in any way.		
iii)	The router shall support in-service software upgrades and in-service software downgrades for minor patches and upgrade . The software upgrade and downgrade process shall be possible to perform on the router without any traffic loss.The bidder should explain the architecture of ISSU process		

iv)	The router shall facilitate all applications like voice, video and data to run over a converged IP infrastructure.		
2.	Performance & Interface Specifications: The router shall meet the following performance and interface requirement-		
i.	STM-1 ATM. STM1, STM4, STM16 Packet over SDH		
ii.	Fast Ethernet (Copper) & Gigabit Ethernet (both Copper and Fiber)		
iii.	Channelized STM-1.		
iv.	Gigabit Ethernet		
v.	The router shall have at least 1 free slot for further expansion.		
vi.	The router shall have at least 4 GigE interface of Line rate populated		
3.	Layer 2 Protocols: The router shall meet the following requirements for Layer 2 protocols:		
i)	Shall support Frame Relay, PPP, HDLC and Ethernet Encapsulation.		
ii)	Shall support Multilink PPP (MLPPP).		
iii)	Shall support PAP & CHAP authentication.		
iv)	Shall support IEEE 802.1Q VLAN		
v)	Shall support IGMPv2, IGMPv3 and IGMP Snooping.		
vi)	The router should have support for at least 100 tunnels of GRE		
vii)	The router should support at least 100K IPv4 and 50 k IPv6 routes		
viii)	The router should support up to 15k queues and three levels of hierarchy qos		
ix)	The router should support 4000 unique ACLs		
x)	The router should support 64,000 multicast routes & 1000 multicast groups		
4.	Layer 3 Protocols: The router shall meet the following requirements for Layer 3 protocols:		
i)	The router shall support the following IPv4 Interior Gateway Protocols (IGP) – Static Route, Default Route, RIPv2, OSPFv2.		
ii)	The router shall support BGP4 protocol along with all advanced features such as route reflector. All necessary licenses if any, to be provided to enable full suite of IGP and BGP.		
iii)	The router shall support route redistribution between protocols and route filtering.		
iv)	The router shall support the following IP Multicast Routing Protocols to facilitate applications such as streaming, webcast, command & control etc – PIM SM, PIM SSM.		
v)	The router shall support Policy Based Routing (PBR) to route specific traffic towards a specific network path as determined by the administrator.		
vi)	The router shall support GRE (Generic Routing Encapsulation) Tunneling.		
vii)	The router shall support following MPLS features – LDP, Layer 2 VPN such as EoMPLS with LDP signaling, Traffic Engineering with RSVP-TE, Fast Reroute Link Node & Path protection.		
5.	IPv6: The router shall meet the following requirements for Ipv6		
i)	The router shall support dual stack Ipv6 on all interfaces and Ipv6 over Ipv4 tunneling.		
ii)	The router shall support the following Ipv6 Routing Protocols – RIPng, OSPFv3, Ipv6 IS-IS and Ipv6 BGP.		
iii)	The router shall support Ipv6 Neighbor Discovery, Stateless Auto-configuration and Neighbor Discovery Duplicate Address Deletion.		
iv)	The router shall support following Ipv6 Multicast protocols – Ipv6		

	MLD, PIM-Sparse Mode, PIM – SSM.		
v)	The router shall support Ipv6 QoS.		
vi)	The router shall support Ipv6 Security Functions – ACL, Ipv6 Firewall, SSH over Ipv6.		
6.	Fast Convergence & High Availability: The router shall meet the following requirements for Fast Convergence and High Availability		
i)	The router shall support BFD (Bidirectional Forwarding Detection) protocol.		
ii)	The router shall support notification of interface down/up event to the routing protocol instantaneously after the event has occurred.		
iii)	The router shall support interface-dampening capability where an interface can be automatically suppressed from the routing protocol if the same is flapping too many times to ensure stable operation of the network.		
iv)	The router shall support incremental SPF (I-SPF) or equivalent feature where only incremental SPF re-computation take place for faster convergence.		
v)	The router shall support Non-Stop Forwarding for following protocols – OSPF,BGP.		
7.	Quality of Service: The router shall meet the following requirements for QoS –		
i)	The router shall provide up to 128k queues for deployment of per-user per-application per-port QoS..		
ii)	The router shall perform traffic Classification using various parameters like source physical interfaces, source/destination IP subnet, protocol types (IP/TCP/UDP), source/destination ports, IP Precedence, 802.1p, MPLS EXP, DSCP and by some well known application types through Application Recognition techniques.		
iii)	The router shall be able to mark traffic using IP Precedence, DSCP and MPLS EXP.		
iv)	The router shall support following standards for DSCP and related QoS architecture – RFC 3260, RFC 3246, RFC 2597, RFC 2475 and RFC 2474.		
v)	The router shall support Strict Priority Queuing or Low Latency Queuing to support real time application like Voice and Video with minimum delay and jitter.		
vi)	The QoS policy in the router shall support dual Strict Priority Queue or Low Latency Queue per policy so that voice and video traffic can be put in different queue.		
vii)	The route shall support class based traffic shaping.		
viii)	The router shall support traffic policing as per relevant standards – Single Rate Two Color Policing as per RFC 2697, Two Rate Three Color Policing as per RFC 2698.		
ix)	The router shall support congestion avoidance through WRED and selective packet discard using WRED through IP Precedence and DSCP.		
x)	The router shall support Hierarchical QoS policy with parent and child QoS policies. The parent policy shall shape or police the entire interface where as the child policy shall provide queuing and WRED to various applications as per their class of service.		
xi)	The router should have support for minimum 8 queues per port		
8.	Integrated Security: The router shall meet the following requirements for security –		

i)	The router shall support Access Control List to filter traffic based on Source & Destination IP Subnet, Source & Destination Port, Protocol Type (IP, UDP, TCP, ICMP etc) and Port Range etc.		
ii)	The router shall support ACL logging feature for auditing.		
iii)	The router shall support time based ACL to reflect time based security and QoS policy.		
iv)	The router shall support unicast RPF (uRPF) feature to block any communications and attacks that are being sourced from Randomly generated IP addresses.		
v)	The router should have support for Network Address Translation (NAT) and Port Address Translation (PAT) to hide internal IP addresses while connecting to external networks .The router should have support for hardware enabled Network Address Translation (NAT) and Port Address Translation (PAT) . The router shall support NAT6to4 function. The router shall support vrf-aware NAT function.		
vi)	The router shall support AAA features through RADIUS or TACACS.		
vii)	The router shall support Control Plane Policing to protect the router CPU from attacks.		
viii)	The router shall provide MD5 hash authentication mechanism for RIPv2, OSPF, BGP and MPLS routing protocols.		
ix)	Router should support Carrier Grade NAT		
9.	Management: The router shall meet the following management features –		
i)	The router shall be manageable through Local Console & Aux Port, Telnet and SSHv2.		
ii)	The router shall be manageable through Web.		
iii)	The router shall have IP OAM tools like ping, traceroute.		
iv)	The router shall support online reconfiguration and configuration rollback feature.		
v)	The router shall support SNMP v1, v2 and v3 features.		
vi)	The router shall have SLA monitoring tools to measure state of the network in real time. The SLA operations shall provide information on TCP/UDP delay, jitter, application response time, VoIP MOS score, Packet Loss etc.		
vii)	The router shall provide multiple levels of role based access control for administration.		
viii)	Router should have support to accurately classify applications, provide monitoring capabilities on an ongoing basis and also be able to provide end user response time metrics on a GUI. The router should have the capability of classifying well known as well as custom applications. If any of the features can't be provided within the Router, additional hardware needs to be quoted.		
ix)	The router shall support controlled SNMP access through SNMP ACL so that only the designated NMS stations can have access to the router.		
	Interface Requirements:		
	4 x 1 Gigabit Ethernet Interfaces		

Annexure-III

Price Performa for items (BoM) of Microwave/ wireless equipment

Sl.	Item	Qty (A)	Unit Price (B)	Total Price (C) C=A*B	Sales Tax/ VAT (D)	Service Tax / VAT (E)	Total Cost (F) F=C+D+E
1.	Point to Point equipment for backhaul	42					
2.	Point to Multipoint (BTS) at base Station	21					
3.	Point to Multipoint (CPE) at Subscriber site	184					
4	24 port Layer 3 switch	01					
5.	NMS to manage RF links						
6.	Chemical Earthing	205					
7.	Guy Mast (06 meters to 54 meters high) As per below (total: 205)						
7.1	06 Meter high Guy Mast	20					
7.2	12 Meter high Guy Mast	20					
7.3	18 Meter high Guy Mast	20					
7.4	24 Meter high Guy Mast	20					
7.5	30 Meter high Guy Mast	20					
7.6	36 Meter high Guy Mast	24					
7.7	42 Meter high Guy Mast	20					
7.8	48 Meter high Guy Mast	20					
7.9	54 Meter high Guy Mast	20					
8	Cables for POE (Cat 5e)	30000 meters					
9	Router	1					
10	Insurance of following items (Only Radios)						
10.1	Point to Point equipment for backhaul	42					
10.2	Point to Multipoint (BTS) at base Station	21					
10.3	Point to Multipoint (CPE) at Subscriber site	184					
11.	AMC of 1 year after 3 year warranty ##	All Items					

Note: Guy mast per meter rates may also be provided. The payment will be made as per actual delivery of Masts (as per actual heights). Cables per meter rates may be provided and payments for cables can be claimed as per actual delivery.

Breakup of AMC for all items may also be provided in separate sheet.

ERNET India may at its discretion reduce/increase the quantity of any item or may drop any of the items, as per the requirement, in the Purchase Order. The rates of any item will be valid for next 3 years from PO issue date, hence firm has to supply additional items in future at same rate quoted in the tender.

Annexure –IV**SERVICE LEVEL AGREEMENT**

Terms of the Service Level Agreement would be as under:

1. All the supplied hardware/software should be under three year on site free comprehensive warranty
2. Bidder guarantees that for all the supplied hardware/software downtime should not exceed 5% averaged on a yearly basis for 24x7x365 days operation.
3. In case the repair time exceeds over SLA, the penalty of Rs.500/- will be deducted for each day or part thereof.
4. The maximum time to repair (MTTR) to any complaint will not exceed 72 Hrs. However, prior exception to the above MTTR shall be taken from ERNET on case-to-case basis.

Conditions: The Bidder must adhere to the following parameters to sign service level agreement

- | | | |
|-----|---|--|
| 3.1 | Operation of Network | - 24x7x365 basis |
| 3.2 | Each Circuit Uptime % on Monthly basis | - 99.00% |
| 3.3 | Latency (max.) - | - 30ms (RTT)
(From Point A to Point B) |
| 3.4 | Average Time to Repair Link Failures | - If the repair is of service nature then < 6 Hours. If the Repair/Replacement of CPE/Radio is required (as per ERNET observation) then - 72 hours.
(MTTR from each link until CPE) |
| 3.6 | Average Maintenance Outage per month
(with prior notice and confirmation from ERNET) | - Three hour |

5. Calculation of Service Level Agreement

5.1 Link uptime: the guarantee Uptime of 99.00% of each circuit will be calculated separately on quarterly basis.

5.2 Uptime Penalty in % of total quarterly payment:

>=99.00	0
> 98.5 to < 99	10
> 98 to < 98.5	20
> 95 to < 98	30
> 90 to < 95	40
< 90 % -----	100

Note: Problems/ Issues shall be lodged by school at helpdesk and must have ticket ID of complaint lodged w.r.t internet/Intranet connectivity.

5.3 Down time due to the following situations will not be considered for the purpose of penalty calculation for downtime:

- a. Link down due to power failure and CPE (Customer Premises Equipments) switch off at the respective locations due to interference by other operators.
 - b. Scheduled maintenance by the vendor, with prior intimation to ERNET India.
 - c. Theft incident of equipments, holidays of schools, strike, vocations, electricity problem in schools or issues with IT equipments in labs etc.
- 5.4 Latency: Latency will be randomly checked on daily basis from base station to each remote school connected. In case of non-adherence of SLA latency limit, the link will be considered as down with effect from time of detection till the time the SLA latency limit is restored.
- 5.5 MTTR, Packet loss and Link failover will be calculated from NMS installed at some central location as decided by ERNET.
6. Bidder should provide a satisfactory certificate duly signed and stamped by the user at the end of each year failing which balance payment will not be released till then.
- 5(a) During the warranty: In case the maximum time to repair supplied equipments exceeds the above-mentioned duration then the warranty period of that equipment will be extended proportionately which will be two-times the number of days the system would remain down.
- (b) During the Warranty period: In case the equipments are not made operational within a week from the lodging of the complaint, Bank Guarantee provided by the bidder to ERNET India shall be invoked in respect of that equipment during warranty period.

The Downtime of the equipment starts from the time ERNET India's complaint is logged in at the bidder address as provided by the bidder for escalating complaints. Any delay in this shall be excluded from the availability calculations. The complaint can be logged during working hours (9.00 AM - 6.00 PM on all working days, excluding Sundays & National Holidays). Any delay in escalating a complaint shall be excluded from the availability calculations.

Annexure - VBidder's Profile**A. General Information:**

- i) Location of Corporate Headquarters:
- ii) Date and country of Incorporation:
- iii) Location and address of Help Desk/Support Center:
- iv) Toll free number for support:
- v) Service Facility(ies) Location:
- (a) No. in India
- (b) Average value of inventory of spares per service location
- vi) Technical collaborators (if any):
- vii) Turnover For last three financial years:

Year I (2010-11)	Year I (2011-12)	Year I (2012-13)

Note: Certificate from CA must be enclosed.

- viii) Geographical distribution of the Bidder:
(Offices, locations to be specified with their respective staff strength)
- ix) Details of Partner/Partners in case Tenderer bid in consortium:
- x) Details of similar installation on turnkey basis during last three years:

S. No.	Customer Name and Address	Contact Person's Name, Designation, Phone/ Fax Nos.	Item supplied, Date of supply	No. of units supplied

Annexure-VI

PROFORMA FOR BANK GUARANTEE FOR CONTRACT PERFORMANCE

(To be stamped in accordance with stamp Act)
(The non-judicial stamp paper should be in the name of issuing Bank)

Bank Guarantee No.

Ref.:.....

Date:.....

To,

ERNET India
10th Floor, Jeevan Prakash Building,
25, K.G. Marg,
New Delhi-110 001

Dear Sirs,

In consideration of the ERNET India, Department of Information Technology Ministry of Communications & Information Technology (hereinafter referred as the 'Owner', which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s. _____ (herein referred to as the 'Contractor', which expression shall unless repugnant to the context of meaning thereof, include its successors, administrator, executors and assigns) a contract bearing No. _____ dated _____ valued at _____ for _____ and the Contractor having (scope of Contract) agreed to provide a Contract Performance of the entire Contract equivalent to (_____ per cent) of the said value of the Contract to the Owner.

We _____ having its (Name & Address) Head Office at _____ (hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include the successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Owner, on demand any and all money payable by the Contractor to the extent of _____ as aforesaid at any time up to _____ (day/month/year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the owner the Bank shall be conclusive and binding notwithstanding any difference between the Owner and Contractor or any dispute pending before any court, tribunal or any authority.

The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Owner and further agrees that the guarantee herein contained shall continue to be enforceable till the Owner discharges this guarantee. The owner shall have the fullest liberty, without affecting in any way the liability of the Bank under this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forebear to enforce any covenants, contained or implied, in the Contract between the Owner and the Contractor or any other course of or remedy or security available to the Owner. The Bank shall not be relieved of its obligations under these presents by any exercise by the owner or by any other matters or thing whatsoever which under law would, but for this provision, have the affect of relieving the Bank. The Bank also agrees that the Owner at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Owner may have in relation to the Contractors liabilities.

Notwithstanding anything mentioned herein above our liability under this guarantee is restricted to Rs. _____ and it shall remain in force up to and including _____ shall be extended from time to time for such period as may be desired by M/s. _____ on whose behalf this guarantee has been given.

WITNESS

BANK

Signature _____

Signature _____

Name _____

Name _____

(Bank's Rubber Stamp)

Official address _____

Designation with Bank Stamp

Attorney as per Power of Attorney No. _____

Date: _____

Annexure-VII

Format for Affidavit of Self Certification regarding Domestic Value Addition in an Electronic Product to be provided on Rs.100/- Stamp Paper

Date:

IS/o, D/o, W/oResident of.....do hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the policy of Government of India issued vide Notification No:8(78)/20 I O-IPHW dated 10.2.2012.

That the information furnished hereinafter is correct to best of my knowledge and belief and I undertake to produce relevant records before the procuring authority or any authority so nominated by the Department of Electronics and Information Technology, Government of India for the purpose of assessing the domestic value addition.

That the domestic value addition for all inputs which constitute the said electronic product has been verified by me and I am responsible for the correctness of the claims made therein.

That in the event of the domestic value addition of the product mentioned herein is found to be incorrect and not meeting the prescribed value-addition norms based on the assessment of an authority so nominated by the Department of Electronics and Information Technology, Government of India for the purpose of assessing the domestic value-addition. I will be disqualified from any Government tender for a period of 36 months. In addition, I will bear all costs of such an assessment.

That I have complied with all conditions referred to in the Notification No wherein preference to domestically manufactured electronic products in Government procurement is provided and that the procuring authority is hereby authorized to forfeit and adjust my EMD and other security amount towards such assessment cost and I undertake to pay the balance, if any, forthwith.

I agree to maintain the following information in the Company's record for a period of 8 years and shall make this available for verification to any statutory authorities.

- i. Name and details of the Domestic Manufacturer (Registered Office, Manufacturing unit location., nature of legal entity)
- ii. Date on which this certificate is issued
- iii. Electronic Product for which the certificate is produced
- iv. Procuring agency to whom the certificate is furnished

- v. Percentage of domestic value addition claimed
- vi. Name and contact details of the unit of the manufacturer
- vii. Sale Price of the product

- viii. Ex-Factory Price of the product
- ix. Freight, insurance and handling
- x. Total Bill of Material
- xi. List and total cost value of inputs used for manufacture of the electronic product
- xii. List and total cost of inputs which are domestically sourced. Please attach certificates from suppliers, if the input is not in-house.
- xiii. List and cost of inputs which are imported, directly or indirectly

For and on behalf(Name of firm/entity)

Authorized signatory (To be duly authorized by the Board of Directors)

<Insert Name, Designation and Contact 0.>

List of 204 Schools of Srikakulam

Annexure - VIII

SL NO	DISTRICT NAME	SCHOOL NAME	BLOCK NAME	VILLAGE NAME
1	SRIKAKULAM	ZPHS JR PURAM	RANASTHALAM	JAGANNADHARAJA PURAM
2	SRIKAKULAM	ZPHS M.SARIYAPALLI	KANCHILI	MATHAMSARYAPALLI
3	SRIKAKULAM	GTWAHS HADDABHANGI	SEETHAMPETA	HADDABHANGI
4	SRIKAKULAM	ZPHS LODDAPUTTI	ICHAPURAM	LODDAPUTTI
5	SRIKAKULAM	A.P. TW E I R. SCHOOL (GI	SEETHAMPETA	SEETHAMPETA
6	SRIKAKULAM	ZPHS RAGOLU	SRIKAKULAM	RAGOLU
7	SRIKAKULAM	ZPHS SIRIPURAM	MANDASA	SIRIPURAM
8	SRIKAKULAM	APTWRs BOYS PEDDAMADI	MELIAPUTTI	PEDDAMADI
9	SRIKAKULAM	APTWRs SANTHAMALLI	SEETHAMPETA	MALLI
10	SRIKAKULAM	APTWRs BOYS	SEETHAMPETA	SEETHAMPETA
11	SRIKAKULAM	ZPHS DONKURU	ICHAPURAM	BURJAPADU
12	SRIKAKULAM	APSWRS MADDUVALASA	VANGARA	MADDUVALASA
13	SRIKAKULAM	GTWAGHS PEDDAMADI	MELIAPUTTI	PEDDAMADI
14	SRIKAKULAM	APSWRS BHAMINI	BHAMINI	BHAMANI
15	SRIKAKULAM	ZPHS KHURIGAM	KOTTURU	KHURIGAM
16	SRIKAKULAM	ZPHS SRIKURMAM (GIRLS)	GARA	SRIKURMAM
17	SRIKAKULAM	APSWRS(G) ETCHERLA	ETCHERLA	ETCHERLA
18	SRIKAKULAM	APSWRS PATHAPATNAM	PATHAPATNAM	PATHAPATNAM
19	SRIKAKULAM	ZPHS KARAJADA	MELIAPUTTI	KARAJADA
20	SRIKAKULAM	ZPHS(GIRLS) PALAKONDA	PALAKONDA	PALAKONDA (PT)
21	SRIKAKULAM	ZPHS JARJANGI	KOTABOMMALI	JARJANGI
22	SRIKAKULAM	ZPHS RENTIKOTA	PALASA	RENTIKOTA
23	SRIKAKULAM	ZPHS METTAVASALA	LAVERU	BUDATHAVASALA
24	SRIKAKULAM	ZPHS BURJA	BURJA	BURJA
25	SRIKAKULAM	ZPHS B.R.C.PURAM	SOMPETA	BESIRAMACHANDRAPURAM
26	SRIKAKULAM	ZPHS MUDDADA	ETCHERLA	MUDDADA
27	SRIKAKULAM	ZPHS MANDAVAKURITI	SANTHAKAVITI	MANDAVAKURITI
28	SRIKAKULAM	ZPHS OV PETA	BURJA	VOPIVADAVENKAMPETA
29	SRIKAKULAM	ZPHS BIRLANGI	ICHAPURAM	BIRLANGI
30	SRIKAKULAM	ZPHS GOKARNAPURAM	KANCHILI	GOKARNAPURAM
31	SRIKAKULAM	ZPHS MUTYALAPETA	KAVITI	KAPASUKUDDI
32	SRIKAKULAM	ZPHS FAREEDUPETA	ETCHERLA	SHERMAHAMMADPURAM
33	SRIKAKULAM	GTWAHS BANDAPALLE	MELIAPUTTI	BANDLAPALLE
34	SRIKAKULAM	ZPHS GULUMURU	HIRAMANDALAM	GULUMURU
35	SRIKAKULAM	ZPHS SANTHAVURITY	G.SIGADAM	SANTHAVURITY
36	SRIKAKULAM	ZPHS PEDDADIMILI	BHAMINI	PEDDADIMILI
37	SRIKAKULAM	ZPHS LINGALAVASALA	R.AMADALAVASALA	LINGALA VALASA
38	SRIKAKULAM	ZPHS KORNI	GARA	KORNI

39	SRIKAKULAM	ZPHS KOTTAPALLI	KOTABOMMALI	KOTHAPALLE
40	SRIKAKULAM	ZPHS VAJRAPUKOTTURU	VAJRAPUKOTTURU	VAJRAPUKOTTURU
41	SRIKAKULAM	ZPHS DEVARAVALASA	G.SIGADAM	DEVARAVALLASA
42	SRIKAKULAM	ZPHS KOTTAPETA	ETCHERLA	MUDDADA
43	SRIKAKULAM	ZPHS HARICHANDRAPURAM	KOTABOMMALI	HARICHANDRAPURAM
44	SRIKAKULAM	ZPHS D.MATHILESAM	ETCHERLA	DHARMAVARAM
45	SRIKAKULAM	ZPHS KAMBAKAYA	NARASANNAPETA	KAMBAKAYA
46	SRIKAKULAM	ZPHS PEDDAMURAHARIPURAM	VAJRAPUKOTTURU	PEDDAMURAHARIPURAM
47	SRIKAKULAM	ZPHS SILAGAMSINGIVALASA	SRIKAKULAM	SILAGAMSINGIVALASA
48	SRIKAKULAM	ZPHS G.R.PURAM	MANDASA	VEERAGUNNAMAPURAM
49	SRIKAKULAM	ZPHS BATHUVA	G.SIGADAM	BATHUVA
50	SRIKAKULAM	ZPHS GUTTAVALLI	BURJA	GUTTAVALLI
51	SRIKAKULAM	ZPHS BHASURU	PALAKONDA	BHASURU
52	SRIKAKULAM	ZPHS KARTHALIPALEM	SOMPETA	KARTHALIPALEM
53	SRIKAKULAM	ZPHS KUSUMPURAM	KAVITI	KUSUMPURAM
54	SRIKAKULAM	ZPHS BHAMINI	BHAMINI	BHAMANI
55	SRIKAKULAM	GTWAGHS BUDAMBO	MANDASA	SINGUPURAM
56	SRIKAKULAM	ZPHS SAHALALAPUTTUGA	KAVITI	SILAGAM
57	SRIKAKULAM	ZPHS SONDIPUDI	MANDASA	SONDIPUDI
58	SRIKAKULAM	ZPHS SARUBUJJILI	SARUBUJJILI	SARUBUJJILI
59	SRIKAKULAM	ZPHS NEELANAGARAM	VEERAAGHATTAM	NEELANAGARAM
60	SRIKAKULAM	GTWAHS JAYAPURAM	NANDIGAM	JAYAPURAM
61	SRIKAKULAM	ZPHS VOPPANGI	SRIKAKULAM	VOPPANGI
62	SRIKAKULAM	ZPHS PATHAKOJJIRIA	KAVITI	KOJJIRIA
63	SRIKAKULAM	ZPHS THOLAPI	PONDURU	THOLAPI
64	SRIKAKULAM	ZPHS KAKITAPALLE	SARUBUJJILI	CHINNAKAKITAPALLE
65	SRIKAKULAM	ZPHS ROMPIVALASA	PATHAPATNAM	ROMPIVALASA
66	SRIKAKULAM	ZPHS TALAGAM	TEKKALI	TALAGAM
67	SRIKAKULAM	ZPHS PALAVALASA	SOMPETA	PALAVALASA
68	SRIKAKULAM	ZPHS NARASINGAPALLI	TEKKALI	NARASINGASPALLI
69	SRIKAKULAM	ZPHS YERRAMUKKAM	SOMPETA	SIRIMAMIDI
70	SRIKAKULAM	GTWHS CHINABAGGA	SEETHAMPETA	MARRIPADU
71	SRIKAKULAM	KGBV VANGARA	VANGARA	VANGARA
72	SRIKAKULAM	KGBV SANTHAKAVITY	SANTHAKAVITI	SANTHAKAVITI
73	SRIKAKULAM	KGBV G.SIGADAM	G.SIGADAM	GANGUVARISIGADAM
74	SRIKAKULAM	ZPHS KRISHNAPURAM	MANDASA	SIRIPURAM
75	SRIKAKULAM	ZPHS BETHALAPURAM	MANDASA	BETHALAPURAM
76	SRIKAKULAM	ZPHS KATHULAKAVITI	VEERAAGHATTAM	KATHULAKAVITI
77	SRIKAKULAM	GTWAHS BOMMIKA	PATHAPATNAM	HARIDWARAM
78	SRIKAKULAM	ZPHS TETTANGI	VEERAAGHATTAM	TETTANGI
79	SRIKAKULAM	KGBV RAJAM	RAJAM	RAJAM
80	SRIKAKULAM	K.G.B.V SCHOOL PATAPATNAM	PATHAPATNAM	PATHAPATNAM

81	SRIKAKULAM	ZPHS PANASALAVALASA	R.AMADALAVALASA	PANASALA VALASA
82	SRIKAKULAM	KGBV SANTHABOMMALI	SANTHABOMMALI	BORUBHADRA
83	SRIKAKULAM	ZPHS BURJAPADU	ICHAPURAM	BURJAPADU
84	SRIKAKULAM	ZPHS PEDDAGANGALLAPETA	SRIKAKULAM	MOFASBANDAR
85	SRIKAKULAM	ZPHS BODDURU	SANTHAKAVITI	BODDURU
86	SRIKAKULAM	ZPHS BAIRISARANGAPURAM	MANDASA	BAIRISARANGAPURAM
87	SRIKAKULAM	ZPHS MARUVADA	VANGARA	MARUVADA
88	SRIKAKULAM	ZPHS PEDDADUGAM	JALUMURU	PEDADUGAM
89	SRIKAKULAM	ZPHS LANKAPETA	RANASTHALAM	RAVADA
90	SRIKAKULAM	ZPHS PEDDAPADMAPURAM	MELIAPUTTI	PEDDAPADMAPURAM
91	SRIKAKULAM	ZPHS MAMIDIPALLI	SANTHAKAVITI	MAMIDIPALLI
92	SRIKAKULAM	Z.P.High School(Girls) NARASANNAPETA	NARASANNAPETA	NARASANNAPETA (PT)
93	SRIKAKULAM	ZPHS KOTHAKUNKAM	LAVERU	KOTHA KUNKUM
94	SRIKAKULAM	ZPHS DOKULAPADU	VAJRAPUKOTTURU	DOKULAPADU
95	SRIKAKULAM	ZPHS DEVUNALTHADA	VAJRAPUKOTTURU	DEVUNALTADA
96	SRIKAKULAM	ZPHS NARUVA	RANASTHALAM	NARUVA
97	SRIKAKULAM	ZPHS PURSHOTTAPURAM	SARUBUJJILI	PURUSHOTTAPURAM
98	SRIKAKULAM	K G B V MELIAPUTTI	MELIAPUTTI	MEILAPUTTI
99	SRIKAKULAM	ZPHS LAKHAM DIDI	KOTABOMMALI	LAKKAMDIDI
100	SRIKAKULAM	GTWA HS GIRLS PATTULOGAM	MANDASA	KONDALOGAM
101	SRIKAKULAM	KGBV DEVUDALA	R.AMADALAVALASA	DEVUDALA
102	SRIKAKULAM	ZPHS WALT AIR	SANTHAKAVITI	VALT AIR
103	SRIKAKULAM	ZPHS BORIGIVALASA	NARASANNAPETA	GOPALAPENTA
104	SRIKAKULAM	GTWAUP PUTHIKAVASALA	SEETHAMPETA	TUMBALI
105	SRIKAKULAM	GTWAHS POOTHIKAVASALA	SEETHAMPETA	MARRIPADU
106	SRIKAKULAM	ZPHS KUNTIBHADRA	KOTTURU	SIRUSUVADA
107	SRIKAKULAM	KGBV SEETHAMPETA	SEETHAMPETA	SEETHAMPETA
108	SRIKAKULAM	ZPHS RAVIVALASA	TEKKALI	RAVIVALASA
109	SRIKAKULAM	ZPHS MUNDALA	KANCHILI	MUNDALA
110	SRIKAKULAM	GTWAHS SAMBHAM	SEETHAMPETA	SAMBHAM
111	SRIKAKULAM	ZPHS BENDI	VAJRAPUKOTTURU	BENDI
112	SRIKAKULAM	ZPHS LINGALAVASALA	TEKKALI	LINGALAVASALA
113	SRIKAKULAM	ZPHS BRAHMANATARLA	PALASA	BRAHMANATARLA
114	SRIKAKULAM	ZPHS PONNADA	ETCHERLA	PONNADA
115	SRIKAKULAM	ZPHS DHARMAVARAM	ETCHERLA	DHARMAVARAM
116	SRIKAKULAM	ZPHS METTURU	VAJRAPUKOTTURU	METTURU
117	SRIKAKULAM	ZPHS GANGUVADA	PATHAPATNAM	GANGUVADA
118	SRIKAKULAM	ZPHS KOTCHERLA	RANASTHALAM	KOTCHERLA
119	SRIKAKULAM	ZPHS AVALANGI	HIRAMANDALAM	AVALANGI

120	SRIKAKULAM	ZPHS MATHALA	KOTTURU	MATHALA
121	SRIKAKULAM	ZPHS SATIVADA	GARA	SATIVADA
122	SRIKAKULAM	ZPHS AMPALAM	POLAKI	AMPALAM
123	SRIKAKULAM	ZPHS KOLLIPADU	SANTHABOMMALI	KOLLIPADU
124	SRIKAKULAM	ZPHS LAKSHIDASUPURAM	NANDIGAM	LAKHIDASUPURAM
125	SRIKAKULAM	GTWAUHS VENNELAVALASA	SARUBUJILI	VENNALAVALASA
126	SRIKAKULAM	ZPHS NAVANAMBADU	SRIKAKULAM	PONNAM
127	SRIKAKULAM	ZPHS BUDUMURU	LAVERU	BUDUMURU
128	SRIKAKULAM	KGBV KOTABOMMALI	KOTABOMMALI	KOTABOMMALI
129	SRIKAKULAM	ZPHS PEDDATAMARAPALLE	NANDIGAM	PEDDATAMARAPALLI
130	SRIKAKULAM	ZPHS B,G.PUTTUGA	KAVITI	BORIVANKA
131	SRIKAKULAM	ZPHS KESAVARAYUNIPALEM	LAVERU	KESAVARAYAPURAM
132	SRIKAKULAM	GTWAHS LABARA	PATHAPATNAM	LABARA
133	SRIKAKULAM	GTWAHS SAVARALINGUPURAM	NANDIGAM	SAVARALINGUPURAM
134	SRIKAKULAM	ZPHS ALLADA	JALUMURU	ALLADA
135	SRIKAKULAM	ZPHS PATHAMEGHAVARAM	SANTHABOMMALI	MEGHAVARAM
136	SRIKAKULAM	ZPHS KILLIPALEM	SRIKAKULAM	PATHASRIKAKULAM (RURAL)
137	SRIKAKULAM	ZPHS GOLLAVALASA	POLAKI	GOLLALAVALASA
138	SRIKAKULAM	ZPHS NARSIPURAM	NANDIGAM	NARSIPURAM
139	SRIKAKULAM	GTWAHS LABBA	KOTTURU	LABBA
140	SRIKAKULAM	ZPHS SUNDARAPURAM	NARASANNAPETA	SUNDARAPURAM
141	SRIKAKULAM	ZPHS KARAVANJA	JALUMURU	KARAVANJA
142	SRIKAKULAM	ZPHS JAGANNADHAPURAM	SANTHABOMMALI	RUNKUHANUMANTHUPURAM
143	SRIKAKULAM	ZPHS BURAGAM	KANCHILI	BURAGAM
144	SRIKAKULAM	ZPHS PAGODU	JALUMURU	PAGODU
145	SRIKAKULAM	ZPHS JADUPALLI	MELIAPUTTI	JADUPALLE
146	SRIKAKULAM	ZPHS VANDUVA	VEERAAGHATTAM	VANDUVA
147	SRIKAKULAM	KGBV RANASTALAM	RANASTHALAM	RANASTALAM
148	SRIKAKULAM	KGBV SCHOOL	AMADALAVALASA	AMADALAVALASA
149	SRIKAKULAM	ZPHS BADAM	NARASANNAPETA	BADAM
150	SRIKAKULAM	ZPHS VALLEVALASA	SANTHABOMMALI	GOVINDAPURAM
151	SRIKAKULAM	ZPHS DIMMIDIJOLA	NANDIGAM	DIMIDIJOLA
152	SRIKAKULAM	ZPHS VOMARAVALLI	GARA	VOMARAVALLI
153	SRIKAKULAM	ZPHS PEDDALOGIDI	PATHAPATNAM	BORUBHADRA
154	SRIKAKULAM	ZPHS KONANGIPADU	VANGARA	KONANGIPADU
155	SRIKAKULAM	ZPHS LUKALAM	NARASANNAPETA	LUKALAM
156	SRIKAKULAM	GTWAHS BAIDALAPURAM	PATHAPATNAM	BAIDALAPURAM
157	SRIKAKULAM	ZPHS, DOSARI	RAJAM	D.R.N.VALASA
158	SRIKAKULAM	ZPHS K.AGRAHARAM	NANDIGAM	KAVITI
159	SRIKAKULAM	ZPHS	HIRAMANDALAM	BHAGIRADHIPURAM

		BHAGIRADHIPURAM		
160	SRIKAKULAM	ZPHS AKKUPALLE	VAJRAPUKOTTURU	AKKUPALLE
161	SRIKAKULAM	ZPHS EDDULAVALASA	POLAKI	EDDULAVALASA
162	SRIKAKULAM	ZPHS KK RAJAPURAM	BURJA	KORIKANAKURMIRAJAPURAM
163	SRIKAKULAM	KGVB SRIKAKULAM	SRIKAKULAM	SINGUPURAM
164	SRIKAKULAM	GTWAGHS BHEEMPURAM	TEKKALI	BHEEMPURAM
165	SRIKAKULAM	ZPHS NARSIPURAM GORA	VEERAAGHATTAM	NARSIPURAM
166	SRIKAKULAM	G.T.W.A.HIGH SCHOOL	MELIAPUTTI	GANGARAJAPURAM
167	SRIKAKULAM	ZPHS PEDDABANAPURAM	NANDIGAM	PEDDABANAPURAM
168	SRIKAKULAM	ZPGHS POLAKI	POLAKI	POLAKI
169	SRIKAKULAM	ZPHS JALANTARAKOTA	KANCHILI	JALANTRAKOTA
170	SRIKAKULAM	ZPHS THAMADA	LAVERU	THAMVADA
171	SRIKAKULAM	ZPHS TURAKALAKOTA	NANDIGAM	TURAKALAKOTA
172	SRIKAKULAM	MPL HS CHINTADA	AMADALAVALASA	AMADALAVALASA
173	SRIKAKULAM	KGBV KANCHILI	KANCHILI	KANCHILI
174	SRIKAKULAM	ZPHS VONKULURU	VAJRAPUKOTTURU	METTURU
175	SRIKAKULAM	ZPHS MAMIDIVALASA	BURJA	MAMIDIVALASA
176	SRIKAKULAM	ZPHS KAMBARA VALASA	VEERAAGHATTAM	KAMBARA
177	SRIKAKULAM	ZPHS GARUDABHADRA	VAJRAPUKOTTURU	GARUDABHADRA
178	SRIKAKULAM	ZPHS VN PURAM	RANASTHALAM	VARAHANARASHIMAPURAM
179	SRIKAKULAM	ZPHS POTRAKHANDA	SOMPETA	POTHRAKONDA
180	SRIKAKULAM	ZPHS TAMPA	HIRAMANDALAM	TAMPA
181	SRIKAKULAM	ZPHS MARUVADA	RANASTHALAM	MARUVADA
182	SRIKAKULAM	ZPHS P.MELIYAPUTTUGA	KAVITI	KAVITI
183	SRIKAKULAM	ZPHS PUSAM	LAXMINARSU PETA	PUSAM
184	SRIKAKULAM	GTWAHS GANGAMPETA	VEERAAGHATTAM	MOKASHARAJAPURAM
185	SRIKAKULAM	ZPHS V.K.GUMADA	VANGARA	J K GUMADA
186	SRIKAKULAM	ZPHS BATHUPURAM	VAJRAPUKOTTURU	BATHUPURAM
187	SRIKAKULAM	ZPHS PALLISARADHI	VAJRAPUKOTTURU	PALLISARADHI
188	SRIKAKULAM	ZPHS BOORAGAM	TEKKALI	BOORAGAM
189	SRIKAKULAM	KGVB MANDASA	MANDASA	MANDASA (PT)
190	SRIKAKULAM	KGBV KUMMARIPETA	GARA	GARA
191	SRIKAKULAM	KGVB VEERAGHATTAM	VEERAAGHATTAM	VEERAGHATTAM
192	SRIKAKULAM	KGBV PONDURU	PONDURU	PONDURU
193	SRIKAKULAM	ZPGHS KOTABOMMALI	KOTABOMMALI	KOTABOMMALI
194	SRIKAKULAM	ZPHS D.G.PUTTUGA	KAVITI	DEPPILI GONAPAPUTTUGA
195	SRIKAKULAM	ZPHS KAVITI (ODIA)	KAVITI	KAVITI
196	SRIKAKULAM	KGBV NANDIGAM	NANDIGAM	NANDIGAM
197	SRIKAKULAM	ZPHS TEPPALAVALASA	RANASTHALAM	THEPPALAVALASA
198	SRIKAKULAM	ZPHS LINGALAVALASA	JALUMURU	LINGALAVALASA
199	SRIKAKULAM	ZPHS DEVALABHADRA	NANDIGAM	DEVALABHADRA
200	SRIKAKULAM	KGBV HIRAMANDALAM	HIRAMANDALAM	HIRAMANDALAM
201	SRIKAKULAM	ZPHS RAVICHANDRI	LAXMINARSU PETA	RAVICHANDRI
202	SRIKAKULAM	KGBV BHAMINI	BHAMINI	BHAMANI

203	SRIKAKULAM	ZPHS NELAVANKA	KAVITI	NELAVANKA
204	SRIKAKULAM	ZPHS GORLLEPETA	RANASTHALAM	KRISHNAPURAM

Note: Name of schools may vary/change at the time of implementation