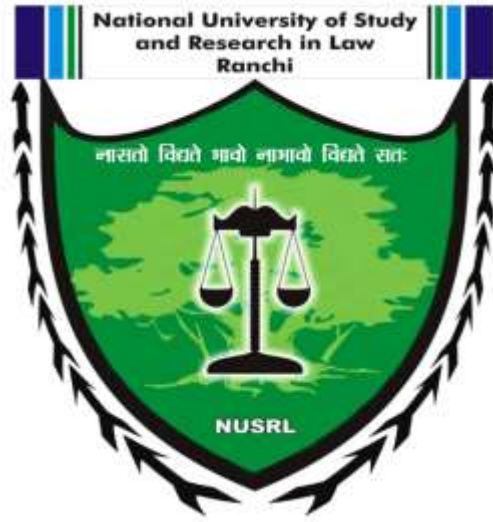


Tender Reference No.: NUSRL/RNC/2023/111992

Date 10/11/2023



Strengthening of Network and IT Infrastructure

at

National University of Study and Research in Law, Ranchi

SECTION-I

NOTICE INVITING TENDER (NIT)

To,

Sub: Invitation of sealed bids for “Strengthening of Network and IT Infrastructure” at NUSRL, Ranchi.

1. National University of Study and Research in Law (NUSRL) is a University established by Act No. 4 of Jharkhand State Assembly in 2010.
2. The main objective of this project is to develop future ready Network Infrastructure (to cope up the future requirement of about 10 years) with the help of trending technologies, cost effective measures and less human intervention systems.
3. NUSRL invites sealed bids, from eligible and qualified bidders for develop future ready Network Infrastructure (to cope up the future requirement of about 10 years) at NUSRL, At Nagri, P.O. Bukru, Ranchi Pithoria Road, Kanke, Ranchi. The Limited Tender Document has been uploaded on NUSRL website www.nusrlranchi.ac.in and can be downloaded by the interested bidder.

KEY DETAILS

Tender reference number	NUSRL/RNC/2023/
Name of work	Strengthening of Network and IT Infrastructure at NUSRL, Ranchi
Place of availability of Tender Document.	Website of NUSRL: www.nusrlranchi.ac.in Any further amendment to Tender will placed on website only
Last date, time & place for submission of tender	29th November, 2023 at 15:00hrs
Tender Opening details	Bids shall be opened on 29 th November, 2023 at 15:30hrs at the above address
Contact Details	E-Mail ID: purchase@nusrlranchi.ac.in
Tender Fee	Tender Fee : Rs.1,000/- (Rupees One Thousand only)

Earnest Money Deposit (EMD)	<p><u>Earnest Money Deposit (EMD)</u>: Rs.1,00,000/- (Rupees One Lac only)</p> <p>The EMDs shall be in the form of demand draft issued by a nationalized bank or a Scheduled Bank in favour of ‘NUSRL, Ranchi’ payable at Ranchi. NUSRL shall not be liable to pay any interest on the EMD.</p>
Envelope & Dispatch	<p>The bidders must submit the bids under 2 packets system i.e.</p> <ol style="list-style-type: none"> i. Technical bids containing all technical details along with EMD Demand Draft in one envelope. ii. Financial Bid as per Annexure-II in second envelope. iii. Both Technical and Financial Bid envelopes should be sealed and placed in a separate third envelope marked as ‘Strengthening of Network and IT Infrastructure’. The Bid should be addressed to: The Registrar, National University of Study and Research in Law, At Nagri, PO – Bukru, Ranchi Pithoria Road, Kanke, Ranchi - 834006 <p>The envelope should clearly indicate the Name of the Bidder and his address. The Bidder may send the bid by Speed/Registered Post or in person. NUSRL will take no responsibility for delay, loss or non-receipt of bids if not received within the stipulated date & time. Bids submitted by any other mode will not be accepted.</p>
Address for communication	<p>The Registrar, National University of Study and Research in Law, At Nagri, PO – Bukru, Ranchi Pithoria Road, Kanke, Ranchi - 834006 E-Mail: registrar@nusrlranchi.ac.in</p>

4. Tenderer may download the tender documents from the web site www.nusrlranchi.ac.in/tenders and submit its bid by utilizing the downloaded document.
5. The agency may visit the location and check the feasibility.
6. Tenders shall ensure that their bids complete in all respects, are submitted on or before the closing date and time of submission indicated in the key details, failing which the tenders will be treated as late and rejected.
7. In the event of any of above mentioned dates being declared as a holiday / closed day for the purchase organization, the tenders will be received/opened on the next working day at the appointed time.
8. NUSRL takes no responsibility for delay, loss or non-receipt of tender documents sent by post.
9. NUSRL reserves the right to accept or reject any or all of the tenders in full or in part including the lowest bid without assigning any reasons or incurring any liability thereof.

SECTION-II

SCOPE OF WORK

- a) The following upgrades/changes are proposed to upscale the Server Room capacity for productivity enhancement and efficient operation of servers and also as an initiative of Digital India. This project include configuring of the existing Switches, Access Points and installation of new Firewall/UTM (HA) device, Access Points, L-2, L-3 switches including safety, security monitoring,

This document provides the technical and functional requirement for establishing IT/ non-IT infrastructure at NUSRL, Ranchi. Bidders are required to carry out due diligence while proposing a suitable, best of class, scalable & cost effective solution for establishing a stable structured Network in the campus.

IT Infrastructure should be designed & installed to provide highest level of physical security and also cover risks. The infrastructure once implemented should offer comprehensive protection for server system, network and communication systems. The Successful Bidder should also ensure that all the equipment in the Server rooms is appropriately maintained and managed.

The IT infrastructure should be implemented by the Vendor as per the specification given in the document. The Blue print of the proposed area will be prepared by the successful bidder after the contract has been awarded. Vendor will undertake all the necessary activities for successful implementation of the LAN and Wi-Fi network.

- b) Any change that is needed to be carried out in the existing setup shall be carried out after approval by the competent authority of NUSRL. The same shall be informed in advance so as to plan the downtime/impact to the end users. The work shall be carried out as per NUSRL compliance and requirements communicated to the vendors from time to time.
- c) Vendors shall ensure that the proposed solutions/components/services are as per applicable regulations in India. The vendor shall be responsible for implementing and maintaining the implemented solutions/services as per applicable regulations in India.
- d) Vendors shall submit architectural design of proposed Network Infrastructure.

SECTION–II:

INSTRUCTIONS TO BIDDERS

1. **Bid Security (EMD-Earnest Money Deposit):**

Bidders shall submit, along with their Bids, a demand draft for EMD (amount specified in the tender notification table), drawn on any Scheduled bank in favour of 'NUSRL, Ranchi' payable at Ranchi. EMD in any other form will not be accepted.

- a) The EMD is interest free.
- b) The EMD, for the amount mentioned above, of remaining unsuccessful bidders will be refunded after signing of agreement and submission by the successful bidder.
- c) The bid submitted without EMD, mentioned above, will be rejected without providing any further opportunity to the bidder concerned.
- d) The bidder shall extend the validity of the offer and EMD, if required.
- e) The EMD may be forfeited, if a bidder withdraws its bid during the period of bid validity.

2. **Venue & Deadline for submission of proposals**

- a) Bids duly completed in all respects as specified in the Tender document, must be submitted to NUSRL as specified in the Key details Table.
- b) Last Date & Time of submission: As given in the Key details Table
- c) NUSRL may, in exceptional circumstances and at its discretion, extend the deadline for submission of proposals by issuing an addendum, in which case all rights and obligations of NUSRL and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

3. **Late Bids**

Bids received after the due date and time as specified in the Tender Notification Table (including the extended period if any) for any reason what so ever, shall not be entertained by NUSRL.

4. **(a) Validity of Bid:**

Bids shall remain valid for a period of **60 days from** the date of bid opening.

(b) Bid Evaluation:

The Technical Bids shall be evaluated by Tender Committee. The Financial Bids shall be opened only for those bidders who shall be declared technically eligible after evaluation of technical bids by tender committee.

5. Eligibility Criteria

- a) The Bidder should have experience in India for supply & commissioning of at least two similar products (Wi-Fi/LAN/ UTM) in last 5 years as on Bid Submission date. Following supporting documents to be enclosed: Copy of Work Order & Work Completion Report.
- b) The bidder must submit the declaration from the OEM stating that the OEM has supplied their Wi-Fi/LAN/ UTM in the Govt. / PSU Data Centre/ Institute.
- c) The Bidder should compulsorily possess following certifications:
 - ISO 9001:2015 Quality Management System
 - ISO 27001:2013 Information Security Management System
- d) Profit & Loss Statement, Balance sheet for last 3 financial years including audit report.
- e) Copy of the Income Tax Returns for three previous years.
- f) Copy of TDS certificate issued by the client to substantiate the claim for the value of works executed in the private sector.
- g) Tender Specific Authorizations are required for every Product in Name of 'The Registrar, NUSRL, Ranchi with Tender Number & Date.
- h) Declaration for 95% uptime with Explanation of Network infrastructure (LAN, Wi-Fi & UTM) along with technical bid must submit by Bidder.
- i) Bidder Financial Standing
- j) Local office in the state
- k) Dedicated - toll Free Telephone No. for Service Support: OEM; Bidder
- l) Acceptance of All Terms & Condition of tender
- m) Declarations for all submitted documents are true.
- n) List of Certified Engineer with their certification of LAN, Wi-Fi, UTM and Server must be done by on roll employee, submit by bidder.

6. **Present Network status**

a. Network Manageable Switch	47 Nos.
b. Wireless Network Access Point	22 Nos.
c. UPS Power Supply (10KVA)	04 Nos.
d. Number of network users in NUSRL	750 (approx.)

7. **Summary of Scope of work:**

This RFP is based on the requirement of NUSRL to meet the high availability and maintain uptime of 99.5% on an annual basis, for the IT services to keep its operations safe, secure and operational.

The bidder has to make necessary arrangement so that the existing network does not go down, if go down then down time should not be more than 2hrs continuously. It is also required to make necessary arrangement for the repairing of existing structure, wherever damaged with matching aesthetic in the entire project duration.

NUSRL invites Request for Proposal (RFP) for strengthening of its Network and IT Infrastructure.

The interested bidding Organizations may go through this RFP Document and submit their proposal along with required supporting documents for the proposed system.

8. **Acceptance Certificate**

On successful completion of acceptability test for 15 days and after NUSRL is satisfied with the accuracy and completeness of the performance of the LAN/Wi-Fi services with internet, the acceptance certificate signed by the representative of NUSRL and representative of the Vendor will be issued. The date on which such certificate is signed shall be deemed to be the completion date.

9. **Language:**

The bid and all related correspondence and documents in relation to the bidding process shall be in English language.

Supporting documents and printed literature furnished by the bidder with the bid may be in any other language provided that they are accompanied by translations of all the pertinent passages in the English language, duly authenticated and certified by the bidder.

Supporting materials, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the bid, the English language translation shall prevail.

10. **Agency details:**

The Agency to fill in the vendor detail form enclosed with this Tender Document as **Annexure-IV** and same may be forwarded along with Bid.

11. **Acceptance of terms & conditions:**

Bidders are requested to submit the sealed and signed copy of this tender document along with Bid as acceptance of all terms & conditions. No deviation from the tender clauses shall be acceptable.

12. **NUSRL's Right to terminate the Process**

- a) NUSRL reserves the right to accept or reject any bid, and reject all proposals at any time prior to award of agreement, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for actions taken by NUSRL.
- b) NUSRL is accepting the bids on a no cost no commitment basis.
- c) NUSRL makes no commitments, express or implied, that this process will result in a business transaction with anyone.

13. **Acceptance of part/whole bid/ modification-Rights there of**

NUSRL reserves the right to accept or reject wholly or partly bid offer, or modify the specifications / quantities / requirements mentioned in this 'Tender' including addition / deletion/alternation of any of the item or part thereof, without assigning any reason whatsoever. No correspondence in this regard shall be entertained. NUSRL also reserves the unconditional right to place order on wholly or partly bid quantity to successful bidder.

14. All the rates quoted by the bidder shall remain unchanged during the period of contract.

GENERAL INSTRUCTIONS TO BIDDERS

1. All entries in the Bid form should be legible and filled clearly. Any overwriting or correction which is unavoidable has to be signed by the authorized signatory.
2. The bidder shall quote for all the items of Financial Bid (*Annexure-II*) failing which the bid shall be considered nonresponsive, incomplete and bid will be summarily rejected.
3. Bid incomplete in any way will be rejected out rightly. Similarly conditional Bids will also be rejected out rightly.
4. Pre-Qualification and Bid documents will be scrutinized, by the evaluation committee as constituted by NUSRL to check all requisite and relevant documents and their authenticity.
5. In case the successful Bidder declines the offer of Contract, for whatsoever reason(s), his EMD will be forfeited.

6. **Confidentiality:**

All the information supplied by NUSRL to the Agency is to be kept confidentially and no part of it should be shared with anyone other than the authorized persons, without express written permission from NUSRL.

7. **Arbitration:**

The parties agree that any decision for Award of any Arbitral Tribunal pursuant to this clause shall be a domestic award and final, conclusive and binding upon the parties and any person affected by it. The parties also agree that any arbitration award rendered pursuant to this clause may be enforced by any court of competent jurisdiction.

8. **Tendering Expense**

The tenders shall bear all costs and expenditure incurred and/or to be incurred by it in connection with its tender including preparation, mailing and submission of its tender and for subsequent processing the same. NUSRL will, in no case be responsible or liable for any such cost, expenditure etc. regardless of the conduct or outcome of the tendering process.

9. **Alteration and Withdrawal of Tender**

The tenders, after submitting its tender, is permitted to alter/modify its tender so long as such alterations / modifications are received duly signed, sealed and marked like the original tender, within the deadline for submission of tenders. Alterations / modifications to tenders received after the prescribed deadline will not be considered.

No tender should be withdrawn after the deadline for submission of tender and before expiry of the tender validity period. If a tenderer withdraws the tender during this period, it will result in forfeiture of the earnest money furnished by the tenderer with its tender.

10. **Bids Clarifications**

If a tenderer needs some clarifications relating to this tender enquiry, he may ask the required information from the contact person within 7 days.

11. **Disqualification**

The proposal is liable to be disqualified in the following cases or in case bidder fails to meet the bidding requirements as indicated in this tender:

- a) Proposal not submitted in accordance with the procedure and formats prescribed in this document or treated as non-conforming proposal.
- b) During validity of the proposal, or its extended period, if any, the bidder increases its quoted prices.
- c) The bidder's proposal is conditional and has deviations from the terms and conditions of tender.
- d) Proposal is received in incomplete form.
- e) Proposal is received after due date and time.
- f) Proposal is not accompanied by all the requisite documents.
- g) Information submitted in bid is found to be misrepresented, incorrect or false, accidentally, unwittingly or otherwise, at any time during the processing of the contract (no matter at what stage) or during the tenure of the contract including the extension period if any.
- h) Bidder tries to influence the proposal evaluation process by unlawful/corrupt/fraudulent means at any point of time during the bid process.
- i) In case any one party submits multiple proposals or if common interests are found in two or more bidders, the bidders are likely to be disqualified, unless additional proposals/ bidders are withdrawn upon notice immediately.

PRE CONTRACT INTEGRITY PACT

GENERAL

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on day of the month of _____ 2023, between, on one hand, acting through Shri/Smt. _____, Registrar, NUSRL, Ranchi (hereinafter called the “Buyer”, which expression shall mean and include, unless the context otherwise requires, his success or sin office and assigns) of the First Part and M/s _____ Represented by Shri _____, Chief Executive Officer (here in after called the “BIDDER/Seller” which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the Buyer proposes to procure (Internet Leased Line) and BIDDER/Seller is willing to offer / has offered the ILL Services and WHEREAS the BIDDER is a private company/public company/ Government undertaking/ partnership / registered expert agency, constituted in accordance with the relevant law in the matter and the Buyer is a PSU performing its functions on behalf of the NUSRL. NOW, THEREFORE, To avoid all forms of corruption by following a system that is fair, transparent and free from any influence / prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: Enabling the Buyer to obtain the desired said ILL Services/equipment / item at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the Buyer will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties here to here by agree to enter in to this Integrity Pact and agree as follows:

1. Commitments of the Buyer

1.1 The Buyer undertakes that no official of the Buyer, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

NUSRL, At Nagri, PO-Bukru, Kanke, Ranchi - 834006

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

- 1.3 All the officials of the Buyer will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
2. In case any such preceding misconduct on the part of such official (s) is reported by the BIDDER to the Buyer with full and verifiable facts and the same is prima facie found to be correct by the Buyer, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the Buyer and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the Buyer the proceedings under the contract would not be stalled.

3. Commitments of BIDDERS

The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:

- 3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Buyer, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
- 3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Buyer or otherwise in procuring the Contract or forbearing to do so having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavor to any person in relation to the contract or any other contract with the Government.
- 3.3 Bidders shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.
- 3.4 BIDDERS shall disclose the payments to be made by them to agents/ brokers or any other intermediary, in connection with this bid/contract.
- 3.5 The BIDDER further confirms and declares to the Buyer that the BIDDER is the original manufacturer/integrator/authorized government sponsored export entity and has not engaged any individual or firm or company whether Indian or foreign NUSRL, Ranchi to intercede, facilitate or in any way to recommend to the Buyer or any of its functionaries, whether officially or unofficially to the award to the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

- 3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the Buyer or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the Buyer as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the Buyer, or alternatively, if any relative of an officer of the Buyer has financial interest / stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.
- 3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the IS Unit.

4. EARNEST MONEY (SECURITY MONEY)

- 4.1 While submitting commercial bid, the BIDDER shall deposit an amount of Rs. 1,00,000/- (Rupees One Lac Only) as Earnest Money / Security Deposit, with the Buyer through Demand Draft in favour of NUSRL, Ranchi.
- 4.2 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining of Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the Buyer to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.
- 4.3 No interest shall be payable by the Buyer to the BIDDER on Earnest Money / Security Deposit for the period of its currency.

5. FALL CLAUSE

The BIDDER undertakes that it has not supplied / is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in NUSRL, Ranchi respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the Buyer, if the contract has already concluded.

6. LAW AND PLACE OF JURISDICTION

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the Buyer.

7. OTHER LEGAL ACTIONS

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

8. VALIDITY

8.1 The validity of this Integrity Pact shall be from date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

8.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

9. The parties here by sign this Integrity Pact at _____ on _____.

BUYER

BIDDER

Name of the Officer:

Name of the Officer:

Designation:

Designation:

Witness

Witness

1. _____

1. _____

2. _____

2. _____

Details of Requirement:

NUSRL needs following link at its campus:

Materials Part				
Sl. No.	Materials Description	Make	UOM	Qty
1	12 Core SM FO Cable		Meters	2500 (approx.)
2	40/30 mm HDPE Conduits		Meters	2500 (approx.)
3	40/30 mm HDPE Coupler		Nos	5
4	24 Ports Fully Loaded Pigtail, adaptor LIU		Nos	4
5	SC-LC Duplex SM FO Patch cord		Nos	8
6	Cat-6 UTP Patch cable		Nos	10
7	Cat-6 Cable (305M)		Nos	16 (approx.)
8	Rj-45 Jack Male		Nos.	200
9	12 U Network Rack With Fan, Self, PDU and Hardware		Nos.	1
10	L3 24 Ports Ethernet POE ,4 Ports 10G SFP+		Nos.	1
11	10G SFP+ Transceiver		Nos.	8
12	L2 24 Ports Ethernet POE ,4 Ports 10G SFP+		Nos.	3
13	Outdoor Access Point		Nos.	70
14	Wireless Controller with HA		Nos.	2
15	Firewall UTM device with HA		Nos.	2
17	Intel® Xeon® E3-1220 v5 (3.0GHz, / 4 Core /8MB/ 80W) /4 DIMMS /2X8GB / up to 4 drives (3.5 inch) SATA / 2X1TB SATA (3.5 inch) 7.2k RPM / Onboard / DVD Writer / 1X inbuilt (250W) /Os Windows Server 2019 x64 Standard		Nos.	1
Services Part:				
Sl.No.	Service Description		UOM	Qty
1	HDPE Pipe Laying underground		Meters	2500
2	FO Cable laying		Meters	2500
3	FO Pigtail Splicing and LIU dressing /Mounting		nos	4
4	UTP cable laying in PVC Conduits		Meters	4880
5	Rj-45 Jack Crimping		nos	200
6	Wall Mount Network Mounting		nos	1
7	Wireless AP Ceiling /Wall Mounting		nos	70
8	New Network Switch installation & Configuration		nos	3
9	Firewall device Installation& Configuration		Nos	2
10	Wireless Controller Installation & Configuration		nos	2
11	Existing Switch Configuration		nos	47
12	Radius Server Installation and Configuration		nos	1
13	Project Management, Configuration and Documentation		Lot	1

Location address: NUSRL, At Nagri, PO Bukru, Kanke, Ranchi - 834006

SECTION-III

1. Detailed Technical Specifications:

This section will provide the minimum requirement/ technical specification of the item that is desired under the proposal. While it is mandatory for the bidder to meet these minimum requirements, if the bidder feels that a particular requirement would need a higher category of equipment, the same should be provisioned in his/ her bid. The bidder should however provide basis for arriving at the solution being proposed as part of the bid. Such estimations or technical specifications should be stated as part of the Compliance Matrix with Statement of Deviations. The bidder should design the solution to provide scalability to CPCB. All items should be of standard and reputed brands. All IT equipment should be IPv6compliant.

TENDER SPECIFICATION FOR SINGLE MODE UNITUBE ARMoured FIBER CABLE

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)
1	06/08/12/24-Core, Single mode 9/125 micron primary coated buffers, 10G Ethernet OS2, Armored Loose Tube, ECCS (Electrolytic Chrome Coated Steel) Tape, Jelly Filled Loose Tube.	
2	Two Steel Wires/Rods embedded in outer periphery of the jacket as strength members. UV Stabilised jacket and protected from Rodent attacks	
3	Complying to ANSI/TIA-568-C.3, ISO/IEC 11801, Tele Cordia GR-20 Core, ITU-T REC G.652D, IEC 60793-1/60794-1, EN 50173, RoHS Compliant	
4	Suitable for use in indoor/outdoor ducts, direct burial and backbone cabling	
5	Loose tube material : Polybutylene Terephthalate (PBT) with Natural/White Colour having Inner Diameter/Outer Diameter $1.7/2.5 \pm 0.1$ mm	
6	Peripheral strength member as two steel wires/rods having dimensions as 0.6 ± 0.05 mm	
7	Moisture Barrier as Water Swell able Tape, Armoring ≥ 0.150 mm (ECCS Tape), Number of Ripcords as 01 no polyester based yarns.	
8	Outer sheath material as HDPE/LSZH with diameter as $7.5/8.5 \pm 0.5$ mm having thickness of 1.5mm nominal	
9	Weight of the cable for 04/06/08/12 core (HDPE/LSZH): $65.0/75.0 \pm 10$ kg/km, for 24 core (HDPE/LSZH): $75.0/95.0 \pm 5$ kg/km	
10	Fiber colour and Loose tube colour as per ANSI/TIA standards.	
11	Tensile Strength : 1000 N, Crush Resistance : 4000 N/100mm	
12	Minimum bend radius : 20 x Diameter (during installation), Minimum bend radius : 10 x Diameter (during full load)	
13	Fiber Type : G. 652D (OS2)	
14	Attenuation : ≤ 0.38 dB/km (@1310 nm), ≤ 0.25 dB/km (@1550 nm)	
15	Chromatic Dispersion : ≤ 3.5 ps/nm.km (@1285 - 1330 nm), ≤ 18 ps/nm.km (@1550 nm)	
16	Zero Dispersion Wavelength : 1300 - 1324 nm	
17	Zero Dispersion Slope : ≤ 0.092 ps/nm ² .km	
18	Polarisation Mode Dispersion : ≤ 0.2 ps/ \sqrt km	

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)
19	Cut-off Wavelength : ≤ 1260 nm	
20	Mode Field Diameter : $9.2 \pm 0.4 \mu\text{m}$ (@1310 nm) , $10.4 \pm 0.4 \mu\text{m}$ (@1550 nm)	
21	Core Cladding Concentricity Error : $\leq 0.8 \mu\text{m}$	
22	Cladding Diameter : $125 \pm 1 \mu\text{m}$, Coating Diameter : $245 \pm 10 \mu\text{m}$	
23	Cladding Non-circularity : $\leq 1 \%$	
24	Installation Temperature: -20°C to $+70^\circ\text{C}$, Operating Temp: -20°C to $+60^\circ\text{C}$	
25	Cable Size and Standard Length: 4F to 12F : $4.0 \text{ kms} \pm 10\%$ 24F : $2.0 \text{ kms} \pm 10\%$	

TENDER SPECIFICATION FOR FIBER RACKMOUNT LIU LOADED DRAWER TYPE 06/12/24 PORT

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)
1	The Fiber Rackmount LIU loaded having Adapter panel fixed on drawer base frame, with Adapters and with Pigtails and assembled with splice tray as per the Loaded fiber port requirement and their applicable accessories.	
2	Suitable to mount at different positions (depth wise) on standard 1U 19 inch racks. Drawer type to pull out for easy maintenance when assembled in racks.	
3	Cold Rolled Steel material with black powder coating	
4	Three types of cable entry holes for different size cables through cable glands, covered with rubber cable grommets/covers.	
5	Splicing of 24 fibers in each plastic fiber splicing trays with integrated cable spool design.	
6	Non removable top cover and no rear cover. Drawer type to pull out for better access of interior.	
7	As per the Loaded fiber port requirement, Loaded 6/12/24 (SC Simplex) adapters with SC SIMPLEX Pigtails on rackmount ports.	
8	As per the Loaded fiber port requirement Accessories kit consists of Cable management rings/Cable saddles, Cable glands (PG13.5, 2 nos), Splice rods, Blanking clips, Velcro ties, Cable ties, Cable inlet/outlet hole covers(2 types, 2 nos each)	
9	Cable management rings/Cable saddles can be mounted inside the rackmount, no provision to mount outside in front of the adapter panel.	
10	Suitable for storing up to 3 meter of $900 \mu\text{m}$ tight buffered fiber pigtail per adapter.	
11	Panel Dimensions : $482 \times 220 \times 44.3$ mm (Length x Width x Height)	
12	Splice Tray Dimensions : $220 \times 90 \times 15$ mm (Length x Width x Height)	
13	Port identification numbers printed on the Adapter panel	
14	Standards: Comply as per ANSI/TIA-568-C.3, ISO/IEC 11801, RoHS Compliant.	
15	Operating Temperature : -20°C to $+70^\circ\text{C}$ Installation Temperature : -20°C to $+70^\circ\text{C}$	
16	Product should be Make in India and OEM should have own manufacturing facility in India since 5 Years. The OEM brand should be Indian origin only.	
17	All OFC, Cat6 Cable and accessories should be from same make for better	

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)
	compatibility and management.	

TENDER SPECIFICATION FOR FIBER PATCHCORD SINGLEMODE

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	Fiber optic patch cord with two core (Duplex) fiber cable terminated with LC connector at one end and SC connector at other end		
2	The terminated connectors in assemblies are designed and are compatible with industry standards (ANSI/TIA-568-C.3, ISO/IEC 11801).		
3	Have good geometrical characteristics of apex offset & radius of curvature & fiber height		
4	100% factory terminated and tested for optical characteristics & fiber end face finish.		
5	Fiber type G. 652D standard. OS2 (9/125 μm),		
6	Buffer Diameter : 0.9 ± 0.05 mm, Jacket Thickness : 0.35 ± 0.05 mm, Strength Member as Aramid yarn		
7	Cable Diameter : 2.0 x 3.8 ± 0.2 (Duplex)		
8	Jacket color : Yellow, Jacket Material : LSZH, Length : 3 Mtr		
9	Connector Ferrule : Ceramic, Apex Offset should be <50um, Fiber height should be ±100nm		
10	Connector Repeatability ≤ 0.2dB with 1,000 times mating cycles.		
11	Connector cable retention : 50 N (11.24 lbs), Crush resistance : 100N/100mm, Bend Radius: 20xDiameter of cable		
12	Attenuation : ≤ 0.36 dB/km (@1310 nm), ≤ 0.25 dB/km (@1550 nm)		
13	Chromatic Dispersion : ≤ 3.5 ps/nm.km (@1285 - 1330 nm), ≤ 18 ps/nm.km (@1550 nm)		
14	Zero Dispersion Wavelength : 1300 - 1324 nm		
15	Cut-off Wavelength : ≤ 1260 nm		
16	Mode Field Diameter : 9.2 ± 0.4 μm (@1310 nm) , 10.4 ± 0.5μm (@1550 nm)		
17	Insertion Loss (@1310 &1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≤ 0.3 dB Return Loss (@1310 &1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≥50 dB		
18	Insertion Loss (@1310 &1550nm) : SM (APC) Type : SC/LC/ST/FC : ≤ 0.3 dB Return Loss (@1310 &1550nm) : SM (APC) Type : SC/LC/ST/FC : ≥60 dB		
19	Traceability sticker available for product tracking and Interferometry report need to submit		
20	Standards: IEC 60332-1, ANSI/TIA-568-C.3, ISO/IEC 11801 RoHS Compliant		

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
21	Installation Temperature : -20 °C to +70° C, Operating Temperature : -20 °C to +70° C		
22	Product should be Make in India and OEM should have own manufacturing facility in India since 5 Years. The OEM brand should be Indian origin only.		
23	All OFC, Cat6 Cable and accessories should be from same make for better compatibility and management.		

TENDER SPECIFICATION FOR CAT6 UTP PATCHCORD

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	Category 6 patch cords with four pair twisted stranded copper wire cable terminated with RJ45 modular plugs at both the ends.		
2	Patch Cords 100% factory tested for better quality and suitable for the high speed data transmission.		
3	Complies with the ANSI/TIA/EIA-568-C.2, ISO/IEC 11801, RoHS compliant Standard. Supports Data Networks Speeds Up to 10/100-Base-T and 1000-Base-T.		
4	Patch cord with LSZH jacket to reduced toxic/corrosive gasses emitted during combustion		
5	Transparent modular plugs with transparent slip on boot and cable assemblies		
6	T568B wiring scheme crimped at both connector ends.		
7	Available in different colors and different length on request		
8	Patch cord conductor: 24 AWG, Stranded copper wires, Insulation : HDPE		
9	Connector Plug: 30μ” Gold plated contact, Phosphor Bronze base material		
10	Jacket Diameter : 5.8 ± 0.1mm		
11	Plug Insertion/Extraction Life: 750 Cycles min. using FCC approved plug		
12	Plug & Jack Contact Force : 100 Grams min. using FCC approved plug		
13	Plug Retention Force : 11 lbf min.		
14	Current Rating: 1.5 amps, Voltage Rating: 72 Vdc max.		
14	Insulation Resistance : 500MΩ min, Contact Resistance : 20mΩ max, DC Resistance: 0.1Ω max.		
15	ETL Verified 4-Connector Channel performance certificate		
16	Operating Temperature: -20 °C to +70° C Installation Temperature : -20 °C to +70° C		
17	Product should be Make in India and OEM should have own manufacturing facility in India since 5 Years. The OEM brand should be Indian origin only.		
18	All OFC, Cat6 Cable and accessories should be from same		

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	Category 6 patch cords with four pair twisted stranded copper wire cable terminated with RJ45 modular plugs at both the ends.		
	make for better compatibility and management.		

SOLID CABLE CATEGORY 6 UTP FR-PVC

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	The 4 pair Unshielded Twisted Pair cable shall be UL® Listed and ETL verified		
2	This cable well exceeds the requirements of ANSI/TIA-568-C.2 and ISO/IEC 11801 Class E		
3	Nominal Outer Diameter of Cable should be 5.8 ± 0.2 mm and Conductor Diameter 23 AWG		
4	Construction: 4 twisted pairs separated by internal PE Cross Separator. Full separator. Half shall not be accepted. Rip Cord is must.		
5	Conductor: Solid bare Copper, Outer jacket sheath: FRPVCwith UL approved CM/CMR rated cable. Jacket color: Grey		
6	Insulation Material: High Density Polyethylene (HDPE) with Insulation Diameter : 0.89 ± 0.01 mm		
7	Dielectric Strength of cable should be 2.5 KVDC for 2 seconds		
8	Bending Radius : < 4X Cable Diameter at $-20^{\circ}\text{C} \pm 1^{\circ}\text{C}$ Pulling Force: 25.35 lbs		
9	Electrical Parameters: Insertion loss (Attenuation), NEXT, PSNEXT, ELFEXT (ACRF), PSELFEXT (PSACRF), Return Loss, ACR and PS ACR.		
10	Insertion Loss of 32.8 db/100m at 250 MHz		
11	Cable should support operating temperature from -20° to $+70^{\circ}\text{C}$		
12	Cable support Conductor Resistance $\leq 9.38 \Omega/100\text{m}$ Max.		
13	Mutual Capacitance of cable should be < $5.6\text{nF}/100\text{m}$ Max.		
14	Resistance Unbalance of cable should be 5% Max.		
15	Capacitance Unbalance of cable should Max. $330\text{pF}/100\text{m}$		
16	Cable support Delay Skew: < $45 \text{ ns}/100\text{m}$, Operating Voltage: 72V		
17	Nominal Voltage of Propagation (NVP): 69% and Current Rating: 1.5A Max.		
18	Impedance: $100 \pm 15 \Omega$ @100 MHz. and Propagation Delay @250 MHz : $536 \text{ ns}/100\text{m}$		
19	ETL Verified 4-Connector Channel performance certificate		
20	RoHS Compliant		

SR. NO.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
21	Printed sequential Length Counter of each meter on Outer Jacket		
22	Category 6 UTP cables shall Supports Gigabit Ethernet (1000 base-T) verified upto 600 Mhz		

RJ 45 CONNECTOR

Sl.No.	SPECIFICATION/QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	RJ-45 modular plugs for Local Area Network (LAN) and computer Applications, Suitable for Cat 6 Solid or Stranded cable, 3-Prong Design for accurate termination		
2	Current Rating : 250V AC max, at 2A		
3	Dielectric withstanding : 1000V DC/min, <0.5A		
4	Insulation Resistance : >500M Ω , 1000V DC/min.		
5	Contact Resistance : <20 M Ω		
6	Cable to plug tensile strength: 20lbs(89N)min		
7	Durability : above 750 mating cycles		
8	Temperature for operation : -40°C to +125°C		
9	Housing material : Polycarbonate UL94V-0		
10	Gold plating thickness : Gold flash 3MU”		
11	RoHS compliant		

Layer 3 / Lite L3 PoE+ Switch 24 Port 10/100/1000Mbps with 4 x 1G/10G SFP+ ports

SI No	Specification		Compliance (Yes/No)	Remarks (If any)
1	Physical Ports	24 x 10/100/1000 Mbps Ethernet PoE+ ports with 4 x 1/10Gig SFP+ ports. All Switch, transceiver, AP and WLC should be from same make for better compatibility and management		
2	Management port	1 x RJ45 port console port, OOB port,		
3	Switching Capacity	248 Gbps		
4	Throughput	184 Mpps		
5	NVRAM	8GB		
6	DRAM	4 GB		
7	MAC Address	32k		
8	Maximum routes (in hardware)	16k IPv4, 4k IPv6		

		Next hop address: 8k		
9	Packet buffer memory	4 MB		
10	Relative Humidity non-condensing	10%-90% at 50°C		
11	Temperature	Operational: 0°C to 45°C (32°F to 113°F) at sea level · Non-operational: 40°C to 70°C (-40°F to 158°F)		
12	Power Supply	Default: AC: 100-240V		
13	PoE Power Budget	Switch should support IEEE 802.3af (15.4W) & IEEE 802.3at (30W). Total PoE power: 370W		
14	L2 and L3 Features	Switch should support 4K Active VLAN		
		Switch should support QinQ and selective QinQ		
		Switch should support GVRP		
		Switch should support Private VLAN 32 Nos		
		Metro-Ring Protocol (MRP) (v1, v2)		
		Remote Fault Notification (RFN)		
		Switch should support 802.1D (STP), 802.1W (RSTP) and 802.1S (MSTP)		
		Link Fault Signaling (LFS)		
		Switch should support BPDU guard, root guard and loopback guard		
		Switch should support IGMP v1/v2/v3, IGMP Snooping, IGMP Fast Leave v2, MVRP, IGMP filter		
		Should support Basic IPv4 and IPv6 Static Routing, ECMP, Host Routes, Virtual Interfaces, Routed Interfaces, Route Only and Routing between directly connected subnets from day 1.		
Should support Dynamic IPv4 & IPv6 Routing protocols (OSPFv2 and OSPFv3) and Multicast Routing Protocols.				
15	IPv6 features	Switch should support ICMPv6, DHCPv6, ACLv6		
		Switch should support IPv6 Telnet		
		Switch should support IPv6 neighbor discovery		
		Switch should support Path MTU discovery		
		Switch should support MLD snooping		
		Switch should support IPv6 Static Routing		
		Switch should support RIPng, OSPFv3		
		Switch should support Manual tunnel		
Switch should support ISATAP tunnel 6 to 4 tunnel				
16	QoS	Switch should support Priority Queue Management using Weighted Round Robin		
		(WRR), Strict Priority (SP), and a combination of WRR and SP		
17	Security	Switch should support Port isolation, Port security		
		Switch should support MAC security, DAI & IP source guard, IEEE 802.1x, AAA Radius and TACACS+, L2/L3/L4 ACL flow identification and filtration		
		Switch should support Anti-attack from DDoS, TCP's SYN Flood, UDP Flood, etc.		

		Switch should support Broadcast/multicast/unknown unicast storm-control		
		Trusted Platform Module		
		RADSEC (RFC 6614)		
		Encrypted Syslog (RFC 5425)		
18	Reliability	Switch should support Static/LACP link aggregation, Interface backup		
		Switch should support ISSU Uninterrupted system upgrade		
		Switch should support Upto 12 Units per stack, 1.2 Tbps aggregated stacking bandwidth, and minimum ports usable for stacking Up to 4x25 GbE SFP28		
		Switch should support VRRP, UDLD, VRRP-E(IPv4/IPv6)		
19	DHCP	Switch should support DHCP server/relay/client, DHCP snooping/option82		
20	Network Management	Switch should support Console, Telnet, SSH v1/2, HTTP, HTTPS, SNMP v1/v2/v3, RMON		
		should support Macro for batch execution, Display Log Messages on Multiple Terminals, Virtual Cable Tester (VCT), Out-of-band Ethernet Management, RSPAN, USB file management and storage		
		Switch should support TFTP, FTP, SFTP		
		Switch should support NTP, ZTP, RSPAN		
		Should support SDN features in native as well as hybrid modes		
21	Warranty	3 Years		
22	Certification	All Switch should be certified by NDcPP/ TEC (TELECOMMUNICATION ENGINEERING CENTRE) of DOT as notified vide Indian Telegraph (Amendment) Rules, 2017		

Layer 2+ POE Switch 24 Port 10/100/1000Mbps with 4 x 1G/10G SFP+ ports

Sl No	Specification	Compliance (Yes/No)	Remarks (If any)
1	Physical Ports 24 x10/100/1000BaseT + 4 x 10GE (SFP+) port, All Switch, transceiver, AP and WLC should be from same make for better compatibility and management		
2	Management Port 1 x RJ45 Ethernet Management port		
	1 x RJ 45 Console port and 1 x USB2.0 interface		
3	Switching Capacity 248Gbps		
4	Throughput 184Mpps		
5	Flash 8GB		
6	RAM 4GB		
7	MAC Address 32K		
9	Packet Buffer Memory 4MB		

10	Maximum routes (in hardware)	16k IPv4, 4k IPv6 · Next hop address: 8k		
11	ACL Table	512		
12	Relative Humidity	10%~90% at 50°C non-condensing		
13	Temperature	Operational: 0°C to 45°C (32°F to 113°F) at sea level		
14	Power Supply	AC: 100~240VAC		
	PoE Power Budget	Switch should support IEEE 802.3af (15.4W) & IEEE 802.3at (30W). Total PoE power: 370W		
15	L2 Features	Switch should support IEEE802.3, ab,ae,af,at,az,u,		
		Switch should support Port loopback detection, N:1 Port Mirroring		
		Switch should support LLDP, LLDP-MED and UDLD		
		Switch should support 802.3ad LACP, max 128 group trunks with max 8 ports for each trunk and LACP load balancing		
		Switch should support RSPAN		
		Link Fault Signaling (LFS)		
		Switch should support IEEE802.1d(STP), IEEE802.1w(RSTP), IEEE802.1s(MSTP)		
		Switch should support Root Guard, BPDU Guard, BPDU Tunnel		
		Switch should support MAC VLAN, Voice VLAN, PVLAN, Protocol VLAN, Multicast VLAN and N:1 VLAN Translation		
		Metro-Ring Protocol (MRP) (v1, v2)		
		Switch should support QinQ, Selective QinQ,		
		Switch should support Broadcast/Multicast/Unicast Storm Control		
		Remote Fault Notification (RFN)		
		Switch should support Upto 12 Units per stack, 1.2 Tbps stacking bandwidth		
16	L3 Features	Switch should support Static Routing		
		Switch should support Static Routing, Policy based routing		
17	QoS	Switch should support Traffic Classification Based on 802.1p COS, ToS, DiffServ DSCP, ACL, Port number		
		Switch should support Priority Queue Management using Weighted Round Robin (WRR), Strict Priority (SP), and a combination of WRR and SP Classifying and Limiting Flows Based on TCP Flags ACL Mapping and Marking of 802.1p		
18	ACL	Switch should support IP ACL, MAC ACL, IP-MAC ACL		
		Switch should support Standard and Extended ACL Based on source/destination IP or MAC, IP Protocol, TCP/UDP port, DSCP, VLAN.		
		Switch should support Rules can be configured to port, VLAN, VLAN routing interfaces		

19	Security	Switch should support 802.1x AAA		
		Switch should support Port and MAC based authentication		
		Encrypted Syslog (RFC 5425)		
		Trusted Platform Module		
		IEEE 802.1X username export in sFlow		
		Switch should support Accounting based on time length & traffic		
		RADSEC (RFC 6614)		
		Switch should support Guest VLAN and auto VLAN		
		Switch should support RADIUS for IPv4 and IPv6, TACACS+ for IPv4 and IPv6		
20	DHCP	Switch should support DHCP Server/Client for IPv4/IPv6, DHCP Relay/Option 82, DHCP Snooping		
21	Network Management	Switch should support CLI, WEB, Telnet, SNMPv1/v2c/v3 through IPv4 and IPv6		
		Switch should support encrypted Syslog Server		
		Switch should support HTTP SSL, SNMP MIB, SNMP TRAP, FTP/TFTP, SNTN/NTP, RMON 1,2 and SSH v1/v2		
		Switch should support 802.3ah OAM		
23	Warranty	5 Years		
23	Certification	All Switch should be certified by NDcPP/ TEC (TELECOMMUNICATION ENGINEERING CENTRE) of DOT as notified vide Indian Telegraph (Amendment) Rules, 2017		

10G SFP+ Transceiver

Single mode 10GE SFP+ LX Transceiver LC type			Compliance (Yes/No)	Remarks (If Any)
Sl no	Specification			
1	Architecture	10Gig LX SFP + LC Type Transceiver		
2	Connector	It should have duplex LC Connector		
3	Flow control.	Support 802.3e		
4	Mode	9/125 um Single mode Fiber Type up to 10 KM.		
5	Support wave length	1310nm		
6	Case Operating Temperature:	support up to 0°~70°		
7	Storage Relative Humidity:	support upto 5% to 95%		
8	Country of Origin	Product should be Make in India and OEM should have own manufacturing facility in India since 5 Years. The OEM brand should be Indian origin only.		

Access Points

SL No	Specification / Requirement	Compliance (Yes/No)
1	The APs should support the 802.11a, 802.11b, 802.11g and 802.11n, 802.11ac and 802.11ax standards.	
2	Simultaneous client support on dual band radio is essential.	

3	Shall provide Min 23 dBm Radio output power for both Radio's.	
4	Should support minimum 2x2:2 or higher MIMO on both radio bands for an aggregate capacity of around 1700 Mbps	
5	The Access points should be Centrally Managed by a full-fledged controller.	
6	It should have adaptive antenna technology for performance optimization and interference mitigation features. Antenna should provide Extended coverage utilizing multi-directional antenna patterns. Access point to have Polarization Diversity with Maximal Ratio Combining (PDMRC).	
7	Antenna should dynamically choose antenna patterns in real-time environment to establish the best possible connection with every device. Should support at least 50 antenna patterns combinations.	
8	The access point should be able to detect clients that have dual band capability and automatically steer those client to use the 5GHz band instead of the 2.4GHz band.	
9	Antenna should direct the radio signals per-device on a packet-by-packet in real-time to support high device density environments. Should have 3 dBi gain. Antenna operates without the need for device feedback to support devices using legacy standards.	
10	AP should have 1x1Gbps RJ-45 based Ethernet PoE port.	
11	It should have less than 15 Watts power consumption for full functionality including USB port on PoE	
12	The access point should support IOT based technologies such as Bluetooth, zigbee either inbuilt or using an external usb module.	
13	The access point should support WPA2 and WPA3 enterprise authentication and AES/CCMP encryption. AP should support Authentication via 802.1X and Active Directory.	
14	Implement Wi-Fi alliance standards WMM, 802.11d, 802.11h and 802.11e	
15	Should support the following channelization - 20MHz, 40MHz, 80MHz	
16	Should support min 250 clients per AP or more	
17	AP should be flexible hardware to be deployed as Standalone, Controller-less (Cluster), Controller-based, Cloud-based.	
18	AP should be able to act as sensor for WIPS, Location analytics engine and Network analytics engine.	
19	The access point should include application recognition and control	
20	Should support Transmit power tuning in 1dB increments in order to reduce interference and RF hazards	
21	APs should be site survivable. It should be possible to configure as such if controller goes down, still APs should be able to handle client traffic.	
22	AP should support AES256 encrypted SSH/GRE-based tunnel for data forwarding.	
23	AP should have recovery SSID for easy access to CLI console when AP is unreachable through network.	
24	Shall support 16 SSID's per AP.	
25	Shall support 1 USB port also.	
26	Operating Temperature: 0°C - 40°C	
27	Operating Humidity: 10 % - 95% non-condensing.	
28	Should be UL 2043 plenum rated and comply to RoHS	
29	Should be WiFi certified; WiFi certificate to be enclosed	
30	Should be WPC approved; ETA certificate to be enclosed	
31	Should support the following standards - WEEE & RoHS, EN 60950, EN 61000	

Firewall

Sl. No.	Features	Description	Compliance
1	Type	NGFW	
2	Form Factor (RU)	1	
3	Features	Layer 3 - Layer 4,NAT, VPN, Application Visibility and Control (AVC),User Identity, Next Generation Intrusion Prevention System (IPS),Zero Day Protection / Advance Malware protection, Web Security Essentials / URL Filtering.	
4	Traffic handled	TCP,UDP,HTTP/TCP,TCP/UDP	
5	Hardware Architecture & Performance	The appliance hardware should be a multicore CPU architecture with a hardened 64-bit operating system with min. 4 GB memory. It should also have dedicated NPU-processor with min 2GB RAM for hardware acceleration for network processing	
		The appliance-based security platform should be capable of providing Next Gen Web Protection, Application Control, IPS, DOS, SSL/TLS Inspection & zero-day protection in a single appliance.	
		The quoted should have 300 Mbps SSL/TLS inspection throughput, and 3 Gbps Ipsec VPN throughput	
		The firewall Security Heartbeat policies can able to limit access to network resources or completely isolate compromised systems until they are cleaned. Firewall should be IPv6, SD-WAN from day 1	
6	NGFW Throughput (Measured with Firewall, IPS, Application Control enabled)	700 Mbps or higher	
7	Threat Protection throughput (Measured with Firewall, IPS, Application Control, and Malware Prevention enabled)	250 Mbps or Higher	
8	Concurrent Session/Concurrent Connection	1.5 M or higher	
9	New session/Connection per second	35 K or higher	
10	General Management	The firewall should support innovative technology for application acceleration.	
		The quoted solution should be ready for extended Detection & Response (XDR) with endpoint, Server protection product from same OEM. Should have single management console for Firewall, Endpoint, Server, email security and cloud security product.	

		The firewall should have optional data Centre selection and flexible user and group policy options on file type, exclusions, and actions on analysis	
		The firewall should support TLS 1.3 inspection of encrypted traffic.	
		It Single client support for IPSec & SSL remote VPN with unlimited free mobile authenticator for android & IOS	
		It should have minimum 100 IPSec & 100 SSL client license from day 1. Should have security heartbeat functionality to reject remote connection if the endpoint health status is malicious.	
11	IPS Features	The firewall should have advance Threat Protection (detect and block network traffic attempting to contact command and control servers using multi-layered DNS, AFC, and firewall). The firewall should security heartbeat instantly identifies compromised endpoints including the host, user, process, incident count, and time of compromise.	
		The firewall should have advanced web malware protection with JavaScript emulation, Live Protection real-time in-the-cloud lookups for the latest threat intelligence	
		The firewall should have URL Filter database with millions of sites across 92 categories backed by OEM Labs	
12	Type of Interface	GE Copper, SFP	
13	Number of 1 GbE Copper RJ 45 interface from day 1	4	
14	Number of 1 G SFP interface from day 1	1	
16	Number of 1/10 GbE SFP+ interface Slot/Module supported for future	0	
17	Number of IPsec VPN Peers supported (Site to Site)	500 or higher	
18	Number of IPsec VPN Peers supported (Client to Site)	100 or higher	
19	Number of SSL VPN Peers supported (Client to Site)	500 or higher	
20	Power Supplies from day 1	Single	
21	Type of Processor	x86	
22	High Availability Support	Yes	
23	Interface Expansion slots supported	0	
24	Firewall Policies - License	Yes	

25	Details of the Firewall Policies for the Firewall provided with the License	Web Security Essentials / URL Filtering, IPS License, Application Visibility License, APT (Advance Persistent Threat) License, Anti Malware Protection , C& C attacks, Geo IP Protection, Zero Day Threat Protection) from day 1	
26	NGIPS Signature supported	5000 or higher	
27	Security Intelligence	IP,URL, Domain	
28	Certification	The quoted firewall should have ICASA or EAL4+ certified. NSS Lab certified with minimum 93% security effectiveness as per last report. Certificates should be enclosed. The quoted firewall should have purpose-built, streamlined user interface and rule management for large rule sets with grouping with at-a-glance rule feature and enforcement indicators. Proposed NGFW should be in Gartner Magic Quadrant in Network Firewall as per the latest report. Should have FIPS certified.	
29		License should include Web / URL / Content Filtering, Application Control and Visibility, IPS, Antimalware, Zero-Day Protection & 24 X 7 hardware & warranty support from the OEM for 36 Months	
OEM Criteria			
1	OEM Should be ISO 9001 certified		
2	Should have presence in India for last 10 years		
3	Should have toll free , TAC & RMA centre in India		
4	Should have development & update data centre in India		

Wireless Controller

S. No	Specification / Requirement	Compliance (Yes/No)
1	Product details- Please specify	
	Please mention Make, Model No. and Part Code	
	The Proposer shall position a virtualised image based controller with appropriate specifications.	
2	Essential Features	
	The WLC Management should be image supported for Vmware vSphere, Microsoft Hyper-V, KVM and OpenStack on-Prem platforms and Azure, Google Cloud, AWS Public cloud providers	
	Controller should also be able to manage same OEM switches and be scalable to support 200 switches in the future using a single instance. If separate NMS is required to manage the switches it can be quoted but it has to be from the same OEM.	
	WLC should have Easy Setup through UPnP Network Discovery and Installation Wizard.	
	Controller should support 50 AP from day one and should be scalable up to 1000 APs in single instance.	
	Each Controller should have capacity to handle minimum 20,000 or more Concurrent devices.	
	Each controller should support integrated user authentication capability of minimum 10,000 users without the need for any external database servers (AD/LDAP).	

	Redundancy Features: WLC Must support Active: Active with N+1 redundancy.	
	Controller should support minimum 1000 WLAN's.	
	Controller should provide air-time fairness between these different speed clients – slower clients should not be starved by the faster clients and faster clients should not adversely affected by slower clients.	
	Ability to map SSID to VLAN and dynamic VLAN support for same SSID.	
	Support automatic channel selection for interference avoidance.	
	Controller should monitor and maintain Access points related information such as IP/MAC, Model, Firmware, Radio and traffic statistics, RF/LLDP neighbors, GPS location etc.,	
	The WLAN solution should support client troubleshooting feature that allows an administrator to focus on a specific client device and its connectivity status. The tool should track the step-by-step progress of the client's connection, through 802.11 stages, RADIUS, EAP authentication, captive portal redirects, encryption key setup, DHCP, roaming, and more (depending on WLAN type).	
	The WLAN solution should support in built spectrum analysis feature.	
	The controller should support the ability to create different zones in which AP can be grouped logically or physically based on location eg different buildings in a campus can be configured as different zones so that each zone will have different configuration and policies.	
	External Captive Portal Integration - Web-services based API for external web-portals to integrate with the controller	
	Should have the capability to limit/prevent clients from using static IP addresses thereby enhancing network efficiency and preventing network conflicts.	
	WLC should support Hotspot 2.0 (passpoint).	
3	Auto Deployment of AP's at different locations	
	Access points can discover controllers on the same L2 domain without requiring any configuration on the access point.	
	Access points can discover controllers across Layer-3 network through DHCP or DNS option	
	APs should be site-survivable. Even if controller goes down, still APs should be able to handle client traffic locally.	
4	Security & Monitoring	
	Controller should support following for security & Authentication:	
	WIRELESS SECURITY & Authentication: Open, 802.1x/EAP, PSK, WISPr, WPA, WPA2-AES, WPA-TKIP, WEP,EAP-SIM, EAP-AKA over WLAN for 802.1x, Authentication through external Radius /Directory services.	
	WLC should support WIDS/WIPS for security including Rogue AP detection and prevention, Evil-twin/AP spoofing detection and Ad-Hoc detection.	
	WLC Should support L2 Client Isolation so User cannot access each other's devices. Isolation should have option to apply on AP or SSID's.	
	Support for Walled garden "Walled Garden" functionality to allow restricted access to select destinations by unauthorized wireless users.	
	The proposed architecture should be based on controller based Architecture with thick AP deployment. While Encryption / decryption of 802.11 packets should be able to perform at the AP.	
	WLC should support OS/Device finger printing, Bandwidth rate limit,	

	VLAN mapping.	
	WLC should support Mesh.	
	WLC should be able to present a customizable dashboard with information on the status of the WLAN network.	
	WLC should be able to raise critical alarms by sending an email. The email client on the controller should support SMTP outbound authentication and TLS encryption.	
	WLC or integrated solution should provide customised reporting with minimum 7 days of historical WLAN information.	
	Filtering of Alarms and event Log based on APs, SSID or Zones	
	Syslog support towards external syslog server	
	Controller or integrated solution should support URL Filtering and will be license-enabled when required.	
	Controller or integrated solution should support Wireless heat maps to show coverage areas and holes. It should also provide functionality to track wireless clients in heat map. Controller also should support Google maps integration.	
	Controller or integrated solution should support per user PreShared keys to each user separately for security reasons and for easy manageability of the keys. Should support atleast 4000 unique keys.	
	It should also support Role-Based Access Control, rate-limiting, device fingerprinting, 802.11w Management Frame Protection and 802.11r Fast roaming.	
	Controller should support Firewall Features including L2/L3/L4 Access Control profiles, Application Control profiles, Deep packet inspection, Device based policies etc.	
5	QoS features	
	Per SSID or dynamic Per user bandwidth Rate Limiting	
	Self-healing (on detection of RF interference or loss of RF coverage) and vendor should provide their Interference mitigation techniques .	
	System must support Band Steering where 5 Ghz clients are forced to connect over 5Ghz Radio to provide better load balancing among 2.4Ghz and 5Ghz Radios.	
	WLC shall support Quality of Service features like 802.11e based QoS enhancements, WMM or equivalent and U-APSD to provide best performance on Video applications.	
6	Client/Guest Management	
	WLC should provide a Guest Login portal in order to authenticate users that are not part of the organization.	
	WLC should be able to provide a web-based application that allows non-technical staff to create Guest accounts with validity for fixed duration like hours or days.	
7	Management Features	
	WLC should support administrative access through HTTPS GUI, SSH CLI.	
	Administrative users should have account security features such as session idle timer, account lockout, password expiration, password reuse, two factor authentication. Should have option to enable captcha to make sure a human is logging into the system.	
	WLC should have library of well-documented REST-APIs to allow integration with 3rd party apps.	
	Switches and Access points can discover Controllers across Layer-3 network through DHCP or DNS option. Controller should have Mobile App	

	for Smartphone to provision APs.	
8	Switch Management	
	If a separate NMS is being provided for switch management then it has to be from the same OEM.	
	Support Switch firmware and configuration management.	
	Zero Touch provisioning of switches for ease of management	
	Should support topology views of the network switches	
	Remote cli session from the controller/NMS to the switch for ease of access	
	Switches should automatically discover the controller/NMS	
	Monitor critical parameters such as CPU and memory of the switch	
9	Other Requirements	
	All categories of Controller, switches and Access Point should be from same OEM	
	If any of the features mentioned above requires separate license, it should be quoted along with controller.	
10	Warranty & Support	
	Controller should be quoted with 3years warranty and OEM support	

Server

Sl.No.	Description	Compliance (Y/N)
1	Intel® Xeon® E3-1220 v5 (3.0GHz, 4 Core /8MB/ 80W)	
	4 DIMMS /2X16GB / upto 4 drives (3.5 inch) SATA / 2X1TB SATA (3.5 inch) 7.2k RPM	
	Onboard / DVD Writer / 1X inbuilt (250W) /Os Windows Server 2019 x64 Standard	
	Display 20" or higher, Keyboard/ Mouse	

Services Part:					
Sl.No.	Service Description	UOM	Qty	Price	Amount
1	HDPE Pipe Laying underground	Meters	2500		
2	FO Cable laying	Meters	2500		
3	FO Pigtail Splicing and LIU dressing /Mounting	nos	4		
4	UTP cable laying in PVC Conduits	Meters	4880		
5	Rj-45 Jack Crimping	nos	200		
6	Wall Mount Network Mounting	nos	1		
7	Wirless AP Celling /Wall Mounting	nos	70		
8	New Network Switch instillation & Configuration	nos	3		
9	Firwal device Installation& Configuration	Nos	2		
10	Wireless Controller Installation & Configuration	nos	2		
11	Existing Switch Configuration	nos	47		
12	Radius Server Installation and Configuration	nos	1		
13	Project Manegment, Configuration and Documnetation	Lot	1		

Financial Bid

(Figures in Rs.)

Materials Part						
Sl. No.	Materials Description	Make	UOM	Qty	Price	Amount
1	12 Core SM FO Cable		Meters	2500		
2	40/30 mm HDPE Conduits		Meters	2500		
3	40/30 mm HDPE Couplor		Nos	5		
4	24 Ports Fully Loaded Pigtail ,adaptor LIU		Nos	4		
5	SC-LC Duplex SM FO Patchcord		Nos	8		
6	Cat-6 UTP Patchcable		Nos	10		
7	Cat-6 Cable (305M)		Nos	16		
8	Rj-45 Jack Male		Nos.	200		
9	12 U Network Rack With Fan, Self, PDU and Hardware		Nos.	1		
10	L3 24 Ports Ethernet POE ,4 Ports 10G SFP+		Nos.	1		
11	10G SFP+ Tranreciver		Nos.	8		
12	L2 24 Ports Ethernet POE ,4 Ports 10G SFP+		Nos.	3		
13	Outdoor Acces Point		Nos.	70		
14	Wireless Controller with HA		Nos.	2		
15	Firewall UTM device with HA		Nos.	2		
16	Intel® Xeon® E3-1220 v5 (3.0GHz, / 4 Core /8MB/ 80W) /4 DIMMS /2X8GB / upto 4 drives (3.5 inch) SATA / 2X1TB SATA (3.5 inch) 7.2k RPM / Onboard / DVD Writer / 1X inbuilt (250W) /Os Windows Server 2019 x64 Standard		Nos.	1		
Total						

Services Part:					
Sl.No.	Service Description	UOM	Qty	Price	Amount
1	HDPE Pipe Laying underground	Meters	2500		
2	FO Cable laying	Meters	2500		
3	FO Pigtail Splicing and LIU dressing /Mounting	nos	4		
4	UTP cable laying in PVC Conduits	Meters	4880		
5	Rj-45 Jack Crimping	nos	200		
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9	Firwal device Installation& Configuration	Nos	2		
10	Wireless Controller Installation & Configuration	nos	2		
11	Existing Switch Configuration	nos	47		
12	Radius Server Installation and Configuration	nos	1		
13	Project Manegment, Configuration and Documnetation	Lot	1		
	Total				
	Grand Total				
		Supply part			
		Service part			

(Amount in words: Rupees _____)

Note: The above rates should be inclusive of all taxes and duties.

Signature with Stamp of Authorized Person

Date:

Full Name:

Place:

Company's Seal:

Tender Response Cover Letter

Original signed copy on company letter head

[Date]

To,
The Registrar,
National University of Study and Research in Law,Ranchi
At Nagri, P.O. – Bukru, P.S. Kanke
Kanke, Ranchi - 834006

Dear Sir,

Subject: Response to Tender for ‘Supply, Installation, Testing & Supply of Internet Leased Line’

Having examined the TENDER, the receipt of which is hereby duly acknowledged, we, the undersigned, offer for **Tender for ‘Supply, Installation, Testing & Supply of Internet Leased Line’** as required and outlined in the TENDER and agrees to abide by this response for a period of 90 days from the last date for submission of TENDER response.

The following persons will be the authorized representative of our company/ organization for all future correspondence between the NUSRL and our organization till the completion of the project.

Details	Primary Contact	Secondary Contact	Executive Contact
Name:			
Title:			
Company Name:			
Address:			
Phone:			
Mobile:			
Fax:			
E-mail:			

We fully understand that in the event of any change in our contact details, it is our responsibility to inform NUSRL about the new details. We fully understand that NUSRL shall not be responsible for non-receipt or non-delivery of any communication and/or any missing communication from the NUSRL to us, in the event that reasonable prior notice of any change in the authorized person (s) of the company is not provided to NUSRL.

We confirm that the information contained in this response or any part thereof, including its exhibits, and other documents and instruments delivered or to be delivered to the NUSRL is true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead NUSRL in its short-listing process.

We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading, we are liable to be dismissed from the selection process or, in the event of our selection, our contract is liable to be terminated.

We agree for unconditional acceptance of all the terms and conditions set out in this TENDER document.

We agree that you are not bound to accept any response that you may receive from us. We also agree that you reserve the right in absolute sense to reject all or any of the products/ services specified in the TENDER response.

It is hereby confirmed that I /We are entitled to act on behalf of our company /corporation/firm/organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Dated this Day of _____ 2023.

Signature: _____

Name: _____

Designation: _____

Date: _____

Vendor Information Form

Bidders are requested to furnish the following information and enclose along with quotation.

Agency Name:				
Address of the Agency				
Name & Designation of Authorised person				
Contact information	Mobile no:	Telephone No:	Fax No:	Email:
<u>Bank details of the Agency</u>				
Bank Name				
Bank Address				
Bank Account No				
IFSC Code				
PAN No.				
TIN No.				

Signature & Stamp of the Bidder

Date:

Declaration

1. I,.....Son/Daughter of Shri
..... Proprietor / Partner / Director /
Authorized Signatory of competent to sign
this declaration and execute this bid document.

2. I have carefully read and understood all the terms and conditions of the bid and hereby
convey my acceptance of the same.

3. The information / documents furnished along with the above application are true and
authentic to the best of my knowledge and belief. I/ we, am/ are well aware of the fact that
furnishing of any false information / fabricated document would lead to rejection of my
bid at any stage besides liabilities towards prosecution under appropriate law.

Signature: _____

Name: _____

Designation: _____

Date: _____

Executive summary of the proposed solution

Bidders are required to provide an executive summary of the solution provided along with schematic layout, solution highlights etc.

Deviations Sheet

Please specify any deviations, if any, you wish to seek from the tender conditions. In case of no such mention in this section, it shall be presumed that you accept all scope, terms and conditions of this document.

Technical Deviations:

Commercial Deviations:

Any other:

UNDERTAKING

This is to confirm that we M/s _____
_____ (give full address)
have not been blacklisted/banned/debarred in any of the government department and public sector undertaking /enterprise in India and central Vigilance commission, in last three financial years.

If the above information found false at any stage after the placement of Work Order, NUSRL, Ranchi (hereinafter called Buyer) will have full right to cancel the Purchase Order and forfeit the Performance Guarantee. All the direct and indirect cost related to the cancellation of the order will be borne by us besides any legal action by NUSRL which may be deemed fit at that point of time.

Authorized Signatory