



Gujarat National Law University

**GUJARAT NATIONAL LAW UNIVERSITY
(Established Under Gujarat Act No.: 09 of 2003)**

Tender Notice No: PC-01/2024

Date: 09/04/2024

**Tender for
Supply, Installation, Testing & Commissioning of
Wi-Fi Network Infrastructure**

At

**Hostels, Training Residency,
Guest House and Staff Quarters of
Gujarat National Law University (GNLU),
Gandhinagar**

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1. Tender Notification

Gujarat National Law University (GNLU), Gandhinagar, invites tender offers from eligible, reputed manufacturers and/or their authorized dealers/distributors/agencies for Supply, Installation, Testing & Commissioning of Wi-Fi Network Infrastructure at Hostels, Training Residency, Guest House and Staff Quarters in the Gujarat National Law University, Gandhinagar including its active components and passive network components as specified in this tender.

Tender document may be downloaded from <https://nprocure.com> by any interested eligible vendor. The prescribed nonrefundable tender fee, as mentioned in the tender document, should be sent with your offer by DD in favour of "Gujarat National Law University, Ahmedabad". Any subsequent amendments in the tender document will be available on above mentioned website.

Duly filled-in tender documents may be submitted to the office of The Registrar, Gujarat National Law University, Attalika Avenue, Knowledge Corridor, Koba, Gandhinagar 382426, Gujarat, India by speed post/RPAD or by hand 01/05/2024 up to 05:00 PM.

DETAILS OF THE TENDER & KEY CALENDAR EVENTS

1.0	NAME OF WORK	Supply, Installation, Testing & Commissioning of Wi-Fi Network Infrastructure at Hostels, Training Residency, Guest House and Staff Quarters in the Gujarat National Law University, Gandhinagar
2.0	Tender Fee	Rs. 25,000/- (Non Refundable)
3.0	Earnest Money Deposit (EMD)	Rs. 5,00,000/-
4.0	Date of issue of Tender	09/04/2024 on https://nprocure.com
5.0	Last Date of online submission of Tender	30/04/2024 on https://nprocure.com
6.0	Last date for receiving hard copy of all the tender documents along with Tender Fees & EMD	01/05/2024 up to 05:00 PM
7.0	Technical Tender Opening Date	02/05/2024
8.0	Address for Communication, Queries and Submission of filled tender document.	The Registrar, Gujarat National Law University Attalika Avenue Knowledge Corridor, Koba Gandhinagar 382426 Gujarat, India.

- Separate DD for Prescribed Tender Fee and Earnest Money Deposit (EMD) must accompany the offer as mentioned in this tender document. Offers received without them will be rejected.
- Detailed Technical Specifications, Terms and Conditions, Scope of Work, various format and Performa for submitting the tender offer are described in this tender document.

- Do not change this tender document. Any change/s made in the tender document by the vendor will lead to disqualification. Such offers will be rejected.
- Bidders are requested to visit the Gujarat National Law University, Gandhinagar and check locations, Wi-Fi Network Infrastructure requirements and existing Network Infrastructure setup before submitting tender.

Note: - Bidders should visit the university's website (<https://www.gnl.u.ac.in>) for updates

2. INTRODUCTION

Gujarat National Law University invites interested parties to participate in this Tender for Supply, Installation, Testing & Commissioning of Wi-Fi Network Infrastructure at Hostels, Training Residency, Guest House and Staff Quarters including its active components (Access Points, Switches etc.) and passive network components (this includes Cable, Connector, Pipe etc.) as specified in this tender at Gujarat National Law University, Gandhinagar. Tender Documents can be downloaded from website www.nprocure.com. For view, download and any other updates regarding this Tender, kindly check <https://gnlu.ac.in/GNLU/Tender>. Tender Fee & EMD shall be paid along with online submission of Tender Documents shall be submitted before the due date along with the original documents. Bids shall be submitted online only at website: <https://www.nprocure.com> latest by 30/04/2024. The hard copy of Technical Bid, DD for Tender fee and Earnest Money Deposit (EMD) shall be sent to the Registrar, Gujarat National Law University, and Gandhinagar through Registered Post/Speed Post/Courier/Physical submission on or before latest by 01/05/2024, 1700 hrs.

The tender shall be addressed to The Registrar, Gujarat National Law University, Attalika Avenue, Knowledge Corridor, Koba, Gandhinagar - 382426. The prescribed non-refundable tender fee, as mentioned in the tender document, should be sent by DD in favour of "Gujarat National Law University, Ahmedabad". Any subsequent amendments in the tender document will be available on above mentioned website.

3. INFORMATION TO BIDDERS

a. Terms and Conditions

- (1) Terms and conditions for vendors who participate in this tender are specified in the section named "Terms and Conditions". These terms and conditions are binding on all the vendors. These terms and conditions will form part of the purchase order.
- (2) Each bidder shall submit only one quotation.
- (3) The vendor should be agreeable to all the terms and conditions specified in the tender document. Conditional offers are liable for outright rejection.
- (4) The bidder should submit the tender fee amount (non-refundable) of Rs. 25000/- (Rupees Twenty Five Thousand) & Bid Security (Earnest Money Deposit) for an amount of Rs.5,00,000/- (Rupees Five Lakh) in the form of Demand Draft from a Nationalized /Scheduled Bank, drawn in favour of Gujarat National Law University payable at Ahmedabad. Tenders submitted without EMD/Tender Fees will be disqualified.

b. Qualification criteria:

1. The bidder should have the experience of completion of similar works in any of the Departments/Autonomous Institutions/Universities/Public Sector Undertakings of the

Government of India or any other State Government or Public Sector Banks or Local Bodies/Municipalities as follows:-

- Three similar completed works costing not less than Rs. 3.00 Crore each OR
 - Two similar completed works costing not less than Rs. 3.50 Crore each OR
 - One similar completed work costing not less than Rs. 6.00 Crore
2. Annual turnover of the bidding company should not be less than Rs. 35 Crore in last three financial years. Testimonials to show the Annual turnover should be obtained from the Chartered Accountant and Income Tax Return should be produced.
 3. The Bidder should be registered for GST. The copies of documentary evidence in support of this must invariably be enclosed with the offer.
 4. Bidder should have at least 5 Years of experience for execution of works of similar nature.
 5. The bidder should have local presence in Gujarat (Ahmedabad/Gandhinagar) for at least the past five years. Please attach the copies of any one of the following: Property tax bill / Electricity Bills/ Telephone Bills/GST Registration / Valid Lease Agreement.
 6. Bidder has to submit the authorization letter from OEM for Active Network Component (Wireless Access Points, Network Switches etc.) and Passive Network Components (UTP Cable, Fiber Cable and Components etc.) and UPS System.
 7. Vendor should be Authorized System Integrator/Partner of Manufacturer for doing network deployment.
 8. The Vendor should have experience of minimum Five Years of experience Bidders are required to submit all supporting documents for above criteria with signed and stamp.

4. TERMS AND CONDITIONS

4.1 General Terms & Conditions

1. The bid is non-transferable.
2. The bidder shall bear all the costs associated with the preparation and submission of its bid, and GNLU in no case will be responsible or liable for these costs, regardless of conduct or outcome of bidding process.
3. Bidders shall quote only those products in the bid which are not obsolete in the market and has at least 5 years warranty.
4. Relevant product information, brand and model number offered, printed brochures of the quoted model must be submitted with the offer.
5. Bidder must sign and write page number on all the papers.
6. Bidder has to submit the authorization letter from OEM for Active Network Component (Wireless Access Points, Network Switches etc.) and Passive Network Components (UTP Cable, Fiber Cable and Components etc.) and UPS System.
7. Right to Alter Quantities: GNLU reserves the right to alter (increase or decrease) the quantities specified in the offer in the event of changes in plans of Wi-Fi Network Infrastructure Installation/locations in the university. The vendor has to carry out the

work, of supply of components and installation work, if required by the Gujarat National Law University at the same rates.

8. The bidder has to submit the compliance letter on its letter head duly signed by the authorized signature & other supporting documents as asked for in the bid. Failing to submit the same or non-compliance/deviation from any bid terms and conditions, eligibility criteria or technical specifications may result in rejection of the bid.
9. The Bidder has to examine all instructions, Information, forms, annexures, and scope of work, technical specifications, terms and conditions in the bidding document. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding document in every respect will be at the Bidder's risk and may result in rejection of its bid.
10. Amendment of Bidding Documents (Corrigendum): At any time prior to the deadline for submission of bids, GNLU may modify the bidding documents. The corrigendum will be published on website www.gnl.ac.in. In order to allow prospective bidders reasonable time to take into consideration the amendments while preparing their bids GNLU, at its discretion, may extend the deadline for the submission of bids.
11. Price: The price shall be quoted in Indian Rupees only. This shall be inclusive of all taxes, and cost of total implementation be indicated. All kind of taxes should be specifically mentioned in the price bid.
12. Tender Fee & EMD: The Bidder has to submit Non-refundable Tender Fees of Rs.25000/- & Earnest Money Deposit (E.M.D.) of Rs. 5,00,000/- in the form of Demand Draft in the name of "Gujarat National Law University " payable at Ahmedabad from any of the Nationalized Bank including the Public Sector Bank or Private Sector Banks authorized by RBI (operating in India having branch at Ahmedabad/ Gandhinagar). In the separate sealed cover should be remitted along with the bid. Bid without Tender fees & E.M.D. will not be termed valid. In case of non-receipt of Bid processing fees & EMD as mentioned above your bid will be rejected by GNLU as non-responsive.
13. Unsuccessful bidder's E.M.D. will be returned as promptly as possible but not later than 15 days upon the successful Bidder signing the Contract, and furnishing the Performance Guarantee @ 10% of the total order value as prescribed by GNLU, whichever is earlier. No interest is payable on EMD.
14. The Successful bidder has to submit Performance Guarantee @ 10% of total order value within 15 days from the date of issue of Purchase order for the duration of warranty (5 years onsite warranty) in the form of Demand Draft -or- Performance Bank Guarantee from any of the Nationalized Bank including the Public Sector Bank or Private Sector Banks authorized by RBI (operating in India having branch at Ahmedabad/ Gandhinagar). No interest is payable on security deposit.
15. The successful Bidder's E.M.D. will be returned after the acceptance of Purchase order and upon the furnishing the Performance Guarantee @ 10% of the total order value by the bidder.
16. Modification and Withdrawal of Bids
 - No bid will be allowed to be modified subsequent to the final submission of bid.

- No bid will be allowed to be withdrawn in the interval between the deadline for submission of bids and the expiry of the bid validity. Withdrawal of a bid during this interval will result in the forfeiture of bidder's E.M.D.
17. Any deviation found in the specification of the produced goods from the tender specification will lead to the cancellation of the order, forfeiture of EMD and prohibition in the participation in the future purchase of GNLU . GNLU will not be responsible for any time delay which may arise due to any deviation from the bid technical specification found at the time of inspection and the bidder has to deliver and install the ordered goods within prescribed time limit.
 18. The Successful bidder has to supply, install, testing and commissioning of Wi-Fi Network Infrastructure at Hostels, Training Residency, Guest House and Staff Quarters in the Gujarat National Law University as per the bid at Gujarat National Law University, Gandhinagar.
 19. Completeness of Installation : The installation will be consider as complete only when all the Equipment and components, are installed, integrated and tested in all the location as per the terms and conditions of this tender and accepted by the University Authority. The completion also includes providing complete documentation (with all technical details) and necessary training for IT staff.
 20. Appropriate insurance to cover all the equipment up to delivery and installation shall be taken by the Bidder. Bidder should also take sufficient care in insuring the workforce being deployed to carry out the installation and integration work at the University campus.
 21. After the completion of the entire installation, integration and testing, all the related network support services are to be provided for a period of 5 years by the vendor. Vendor is required to depute one qualified onsite resource person for such period from the date of acceptance. A technical resource person should be present in the University Campus during working hours or as per the timings/shift decided by the university on all working days.

4.2 Delivery, Installation and Commissioning

1. The Vendor shall be responsible for Shipment, delivery, and installation & Testing of Network Equipment/ Components. The vendor shall be responsible to supply the equipment & components as stipulated in the purchase order.
2. For Passive Components: The Vendor has to complete the supply within 8 weeks from the day of issuance of Purchase Order. The Vendor has to commence the installation only upon receiving necessary instructions and go-ahead from GNLU. The Vendor has to Complete the installation within 8 weeks from the date of receipt of such commencement instructions.
3. For Active Components: The Vendor has to supply within 12 week from the day of issuance of Purchase Order. The Vendor has to commence the installation only upon receiving necessary instructions and go-ahead from GNLU. The Vendor has to complete

the installation within 4 weeks from the date of receipt of such commencement instructions.

4. Penalty: For Passive Components & Active Components, the Vendor is required to complete the entire job within the above stipulated timelines, failing which a penalty will be levied at the rate of 1% of the order value, per week.
5. If the Vendor fails to deliver and install the different components ordered within the stipulated time schedule, the same shall be treated as a breach of contract. In such case, the University reserves its right to cancel the purchase order, forfeit the EMD amount paid by the vendor and invoke the bank guarantee without any notice.
6. Appropriate insurance to cover all the equipment up to delivery and installation shall be taken by the Vendor. Vendor should also take sufficient care in insuring the workforce being deployed to carry out the installation and integration work at the University campus.
7. At the discretion of the University, there will be an acceptance test conducted by the University's officials and/or its nominated consultants after installation.
8. The installation work will be deemed as complete only when the same is accepted by the University in accordance with the Terms & Conditions of this tender amount paid by the vendor and invoke the bank guarantee without any notice.

4.3 Warranty & Support:

1. Warranty: The Manufacturer and Vendor both have to provide a letter confirming their responsibility for minimum of 5-Year onsite product replacement warranty (Hardware, Software & Upgrades). Warranty will start from date of acceptance of installation.
2. The Warranty period of all the Active Networking Components/Products should be 5 years and after that availability of 2 years of extended warranty. If Networking Components/products are declared end of life or end of support during this warranty period (total 7 years) by OEM then OEM/Vendor should be bound to provide equivalent or higher model of the product at no additional cost. Undertaking for the same is required from the OEM/Vendor.
3. If any equipment gives continuous trouble during the warranty period, the bidder shall replace the equipment with new one (equivalent or higher of same brand) without any additional cost to the GNLU.
4. The Bidder has to provide onsite technical support whenever needed or problems occur during the warranty period. The Bidder has to provide Preventive Maintenance of equipment/devices twice in a year.
5. The Bidder shall ensure spares availability of equipment/devices. In case, it is not possible to repair some equipment/devices or not possible to repair at site and has

to be taken out for repairs, the Bidder shall provide a suitable equivalent or higher replacement as Standby arrangement within 24 hours so that the work is not hampered. The packing /unpacking, transportation, loading / unloading, connection / disconnection, configuration / re-configuration and any associated activity with the repair and maintenance shall be the sole responsibility of the bidder. However, if standby arrangement has been made then it shall be replaced with original or functionally equivalent or higher working equipment of same brand within next 15 working business days. Non-compliance of this condition will attract the penalty of Rs. 1000 per day. The amount of penalty will be recovered from the performance bank guarantee during warranty period.

6. During warranty period, if the complaint is not attended within 24 hrs the penalty of Rs. 1000 per day will be apply. The amount of penalty will be recovered from the performance bank guarantee during warranty period.

4.4 Payment: For the various Parts of execution by the selected vendor under this tender, GNLU will make payments as per the following schedule:

1. For supply of material:
20% of the invoice amount, upon receipt and inspection of the materials

80% of the invoice amount, upon completion of installation of the materials.
Testing, acceptance and certification (where applicable) of the materials
2. For services:
100% upon testing, acceptance and certification of the installation

4.5 Important:

1. University may accept or reject any or all the bids in part or in full without assigning any reason and does not bind to accept the lowest bid. The University at its discretion may change the quantity/upgrade the criteria/drop any item or part thereof at any time before placing the Purchase Order.
2. GNLU reserves the right to change any bid condition of any item even after inviting the bids, with/without prior notification.
3. A bid submitted with false information will not only be rejected but also the OEM/agency will be debarred from participation in future tendering process.
4. The OEMs/Agency need to submit a certificate during opening of technical bids that they are not currently debarred or blacklisted in any state level/national organization or educational institute/university.
5. In case of any dispute, the decision of the Director of this University shall be final and binding on the bidders.
6. For any query pertaining to this bid document, correspondence be addressed to: The Registrar, GNLU.

7. In case the due date for opening tender happens to be a holiday, the same will be opened on the next working day. The timings will however remain unchanged. Please Note that the
8. Bid: Technical Bid and Price Bid should be submitted in two separate sealed envelope quoting reference number on the top of the envelope. Tender Fee and EMD should be enclosed with the Technical Bid documents, in separate sealed envelopes, stapled with the packet containing Technical Bid documents. The OEMs may either bid directly or authorize their Country/Regional/State Distributors/Dealers/Agencies, to quote with valid authorization certificate, capability to sale and service of the products.
9. Acceptance of Tender: The Authority of Gujarat National Law University, Gandhinagar does not bind itself to accept the lowest priced bid and reserves the right to reject any or the entire tender bids received without assigning any reason thereof. The authority may also decide to empanel more than one OEM or their certified authorized distributors/dealers and fix a price band for the product specifications offered by different companies/brands, compliant to minimum specifications asked in the tender. This is in view of the spectrum of products available in the market, requirements of the University.
10. Compliance List: The proposal be properly indexed and a compliance list against the technical specifications should be provided.
11. Conditional Offer will not be accepted.
12. Period of Validity: Bids shall remain valid for acceptance for a period of 180 days from the date of opening of the price bid.
13. The benefit of any downward price revision (revision on account of budget/financial policy, tax revision, EPZ etc.) is to be given to Gujarat National Law University, Gandhinagar by the selected OEM/agency.
14. Past Performance of the agency will be judged at the time of Technical Evaluation.
15. The University does not bind itself to offer any explanation to those bidders whose technical bids have not been found acceptable by the Technical Evaluation Committee.
16. The bids (technical and price bids) once submitted shall be the property of the University and shall not be returned to the agency in future.
17. The person/officer signing the tender/bid documents should be authorized by the Chief Executive Office/Managing Director / Proprietor / Partner of the Company to sign such documents.
18. Opening of Price Bids: The Price Bid(s) of only those agency(s) who are found technically qualified will be opened and the same will be opened before the technically qualified agency(s).
19. Bidder or his/her authorized representative (with proper authorization letter for attending opening of technical bids and also for opening of price bids) may choose to be present at the time of opening of Technical Bids/Price Bids.
20. The jurisdiction of any dispute will be Gandhinagar.
21. Proposals after due time period will not be accepted.

22. The Technical bid will be opened on //2023 at Gujarat National Law University (GNLU), Attalika Avenue, Knowledge Corridor, Koba, Gandhinagar in the presence of the GNLU's committee members and representatives of the bidders, who have submitted valid bids. Please address all queries and correspondence to:

**The Registrar,
Gujarat National Law University (GNLU), Attalika Avenue, Knowledge Corridor,
Koba, Gandhinagar 382426.**

4.6 Force Majeure:

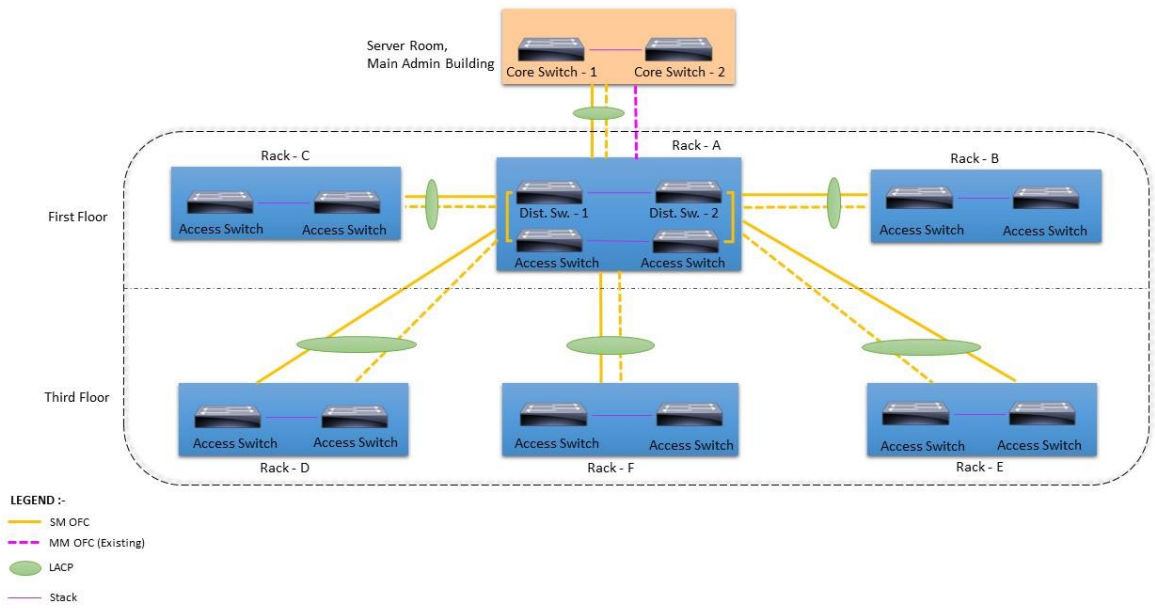
1. Force Majeure shall mean and be limited to the following:
 - a) War / hostilities,
 - b) Riot or Civil commotion,
 - c) Earthquake, flood, tempest, lightening or other natural physical disaster,
 - d) Restrictions imposed by the Government or other statutory bodies which prevents or delays the execution of the order by the Bidder.
2. The Bidder shall advise the GNLU by a registered letter duly certified by the local statutory authorities, the beginning and end of the above causes of delay within seven (7) days of the occurrence and cessation of such Force Majeure Conditions. In the event of delay lasting over two months, if arising out of causes of Force Majeure, The GNLU reserves the right to cancel the order.
3. Completion period may be extended to circumstances relating to Force Majeure by the GNLU. Bidder shall not claim any further extension for completion of work. The GNLU shall not be liable to pay extra costs under any conditions.
4. Bidder shall categorically specify the extent of Force Majeure conditions prevalent in their works at the time of submitting their bid and whether the same have been taken in to consideration or not in their quotations. In the event of any Force Majeure cause, the Bidder shall not be liable for delays in performing their obligations under this order and the delivery dates can be extended to the Bidder without being subject to price reduction for delayed delivered, as stated elsewhere.
5. It will be prerogative of GNLU to take the decision on force major conditions and GNLU's decision will be binding to the bidder.

5. SCOPE OF WORK / GENERAL NETWORK REUIREMENTS

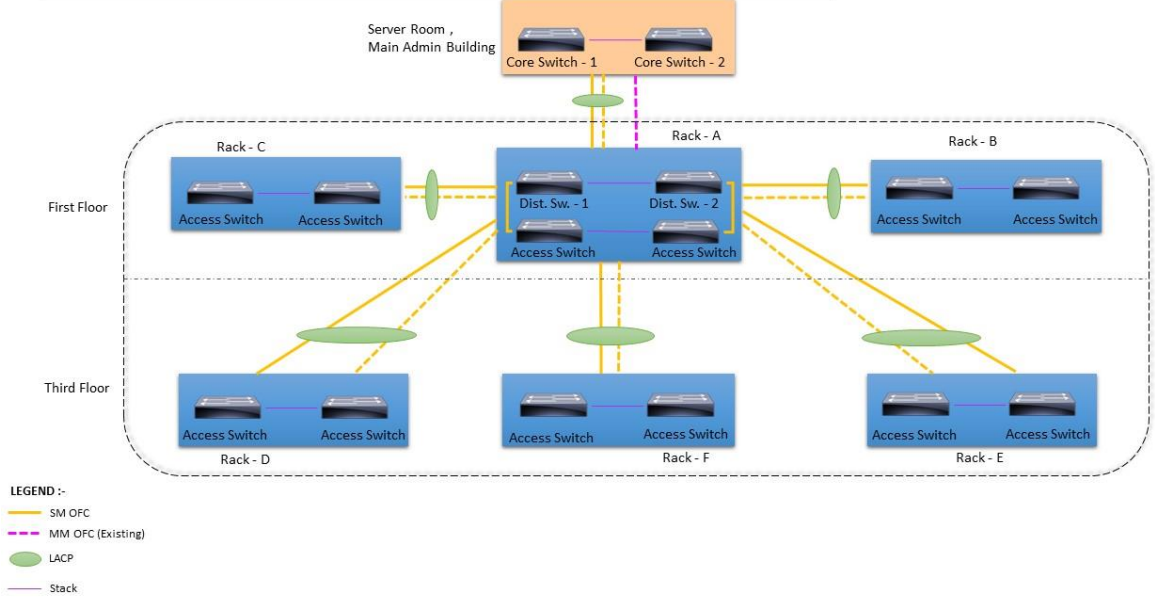
1. This scope shall cover Supply, Installation, Testing & Commissioning of Wi-Fi Network Infrastructure with all equipment as mentioned in this tender.
2. Bidder is responsible for all the components like networking devices, LAN/CAT6A UTP/Fiber /Electrical cabling including laying, tagging and ducting, digging and refilling, road cutting and resurfacing , network architecture design, Racks and accessories, Junction box, Enclosures, Cables, Conduits , UPS and any other devices/accessories etc. required for the successful running Wi-Fi and Local Area Network .

3. Bidders are requested to visit the Gujarat National Law University and check all the installation locations, Wi-Fi / Network requirements and existing network setup before submitting tender.
4. Network Integration is required for all the supply Items/component with the existing LAN
5. The job includes Material Supply, Installation, Testing, and Commissioning of Wi-Fi Network Infrastructure. This is to be carried out at Hostel, Training Residency, Guest House and Staff quarters and other location in the Gujrat National Law University.
6. Wireless Access points, distribution Switches and Access Switches are to be installed at appropriate location at Hostel, Training Residency, Guest House and Staff quarters of the GNLU. Core switches are to be installed at central rack located at Administrative Building of GNLU.
7. The successful bidder shall carry out detail study and submit all relevant documents for approval before installation.
8. The entire system installed will be under comprehensive warranty for five years from the date of successful installation & completion of the project. After the completion of the entire installation, integration and testing, all the related network support services are to be provided for a period of 5 years by the vendor. Vendor is required to depute one qualified onsite resource person for such period from the date of acceptance. A technical resource person should be present in the University Campus during working hours or timings/shift decided by the university on all working days.
9. The scope also includes imparting training to GNLU personnel after commissioning of the system.
10. The entire installation should adhere to latest installation standards, following latest international guidelines and specifications. This includes the installation of switch units in racks, connecting them with appropriate patch panels, and testing end to end connectivity for each node in the building after configuration.
11. The Vendor is required to submit hardcopy and softcopy of the complete documentation for entire installation. This document will detail the Equipment's make and model, serial number, layout, labels, configuration, and all such details.
12. Any other activity/ job which may not be specifically mentioned in the scope of work, but required for successful completion of the work shall be part of the bidder's scope.
13. Proposed Network Connectivity Diagrams for Requirement of New Wi-Fi Network Infrastructure Setup at Hostels, Training Residency, Guest House and Staff Quarters in the GNLU Campus are as below.

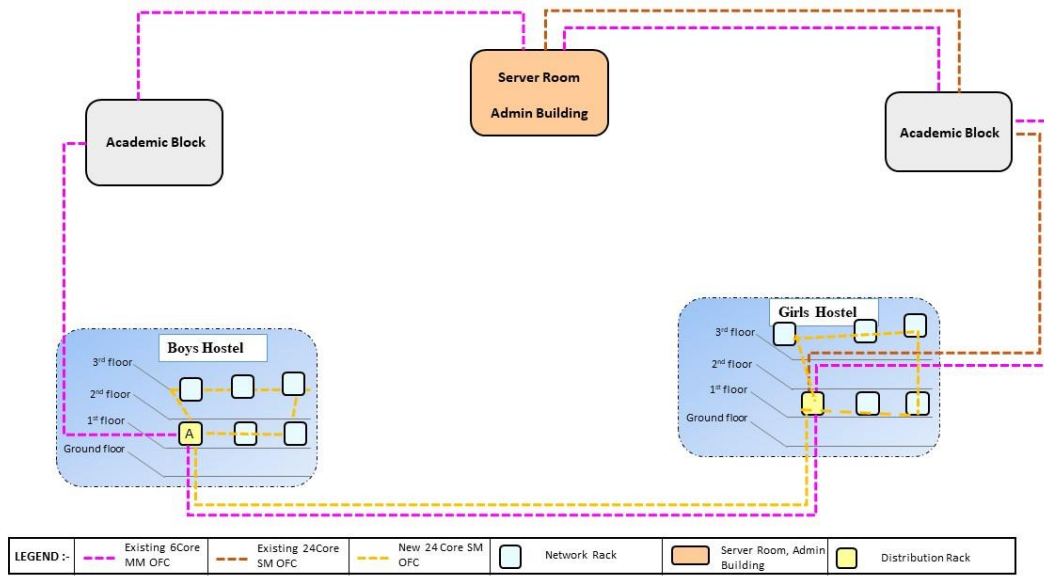
Proposed Network Connectivity Diagram – Girls Hostel & Training Residency



Proposed Network Connectivity Diagram – Boys Hostel, Staff Quarters & Guest House



Fiber Cable Connectivity Diagram (Existing/New)



6. Annexures (A to G)

6.1 Annexure –A: Details of Bidder/Other Details:

- 1) Name of the Bidder:
- 2) Status of the Bidder: (attach documents, if registered company/partnership/proprietorship)
- 3) Details of key top official/authorized official: (attach details)
- 4) Enclose the following documents;
 - a) Certificate of Registration/Trade License
 - b) Attested copy of PAN card and GST registration papers.
 - c) Signed copy of the tender document, with company seal, agreeing to the terms & conditions and declaration
- 5) Bid Processing Fees & Earnest Money Deposit Details

Sr. No.	Item	Amount (In Rs.)	Name of the Bank & Branch	Demand Draft No.
1	Bid Processing Fees			
2	Earnest Money Deposit (E.M.D.)			

- 6) **Form No – E1 : Financial strength of the bidder:** (Please Submit details as per following format)

Financial Year	Turnover (Rs. In Crores)	Audited Accounts Attached?
2020-2021		
2021-2022		
2022-2023		

Note: Please enclose the Audited Annual Accounts for the last three financial years. Failing the same may lead to the rejection of the bid.

- 7) **Form No – E2** : Office in Gujarat (Ahmedabad/Gandhinagar) : (Please Submit details as per following format)

Sr. No.	Address	Contact Person	Contact nos.	Type of supporting document attached
1				

Note: Please fill this form and submit the supporting document. Failing the same may lead to the rejection of the bid.

- 8) **Form No – E3** : Engineers available with vendor to carry out installation and testing:

No.	Name	Experience	Course Completed. Please attach a copy of the certificate
1			
2			

Note: You have to mention at least two certified engineers. Submit the supporting documents. Failing the same may lead to the rejection of the bid.

- 9) **Form No – E4** : Experience implementation of Similar work and after sales, support, maintenance/management (Please Submit details as per following format)

Sr. No.	Name of the Customer	Address of the Installation	Starting Date of Project	Completion Date of the Project	Scope of Work	Value of the project in Rs.
1						
2						
3						

Note:

- Submit the copy of supporting documents for above work, purchase order indicating the project value, customer contact details, work completion certificate etc.
- Please mention only those projects which meet the criteria of eligible bidder.

10) **Form No – E5:** Manufacturer Authorization Letter: (Please Submit details as per following format)

Item	Make and Model	Name of OEM	Authorization letter attached? (Yes/No)
Wireless Access Points , Network Switches and Components			
UTP Cable and Component, Fiber Cable and Component			
UPS system			

Note: Submit authorization certificate from OEM for above items. Failing the same may lead to the rejection of the bid.

Note: - Make sure that the documents are in the same as order as the above list.

6.2 Annexure B: TECHNICAL SPECIFICATION:

[A] Specification for Active Network Components:

[I] Specification for Cloud Managed Wi-Fi Access Points and Wi-Fi Solution:

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

<u>Indoor WiFi6 AP (Quantity - 731)</u>			
Make : _____		Model : _____	
Sl. No	Specification	Technical Compliance Yes/No	Remarks
1	The proposed access point shall support 2.4 GHz 802.11b/g/n/ax client access radio and 5 GHz 802.11a/n/ac/ax client access radio		
2	The proposed access point shall support hardware accelerated encryption		
3	The proposed access point shall support band steering and 802.11e/WMM		
4	The proposed access point shall support 1x 10/100/1000 BASE-T Ethernet (RJ45)		
5	The proposed access point shall support 2 x 2 multiple input, multiple output (MIMO) with two spatial streams		
6	Must support aggregate 1.5Gbps aggregate		
7	Must support 40 & 80 MHz wide channels		
8	The proposed access point must support minimum 4.2 dBi gain at 2.4 GHz, minimum 6 dBi gain at 5 GHz		
9	The proposed access point shall support zero touch provision with true plug & play with zero configuration		
10	The proposed access point shall support rapid deployment options to deploy of 100's of access points using centralized single configuration template, configuration copy, configuration sync etc		
11	The proposed access point shall support fully remote monitoring, configuration, troubleshooting considering the situation of the deployment		
12	Access point should be powered with POE or Power adapter		
13	Access point should be unified and should be managed from central cloud based WLC/Cloud Managed dashboard and support WIDS/WIPS functionality.		
14	Access Point should spectrum intelligence capabilities		
15	The access point solution should have real time asset visibility including real time location in the management platform from day one.		

16	The access points solution should have Bluetooth based engagement support for Bluetooth device tracking and communication from day one		
17	The access point solution should have wireless health/assurance which includes data like latency, SNR, RSSI, data rates and more intelligent information from day one		
18	The proposed solution shall support PMK, 802.11r for fast layer 2 roaming		
19	The proposed solution shall support distributed layer 3 roaming		
20	The proposed solution shall support decision at the access points level which includes layer 3 to layer 7 stateful firewall decisions, QOS policies, NAC policies etc for high performance and scaling (by taking decisions at the edge level)		
21	The proposed access point must support SU-MIMO, UL and DL MU-MIMO with software upgrade.		
22	The proposed AP with 5 years replacement warranty and 5 years of enterprise licence, 24/7 TAC support along with the India TAC number		

<u>WiFi6 AP (Quantity - 78)</u>			
Make : _____ Model: _____			
Sl. No	Specification	Technical Compliance Yes/No	Remarks
1	The proposed access point shall support 802.11a/n/ac/ax and dual band 2.4ghz & 5ghz radio specification		
2	The proposed access point shall support additional radios 1 × WIDS/WIPS and 1 × Bluetooth		
3	The proposed access point shall support hardware accelerated encryption		
4	The proposed access point shall support band steering and 802.11e/WMM		
5	The proposed access point shall support 1 × 10/100/1000 BASE-T Ethernet (RJ45)		
6	The proposed access point shall support 2 x 2 MIMO (multiple input and multiple output) and OFDMA		
7	Must support 802.11b/g/n/ax on the 2.4 & 802.11a/n/ac/ax Wave 2 on 5 GHz radio		
8	Must support aggregate 1.5 Gbps or more with dual radios		

9	Must support 40 & 80 MHz wide channels		
10	The proposed access point shall support zero touch provision with true plug & play with zero configuration		
11	The proposed access point shall support rapid deployment options to deploy of 100's of access points using centralized single configuration template, configuration copy, configuration sync etc		
12	The proposed access point shall support fully remote monitoring, configuration, troubleshooting considering the situation of the deployment		
13	The proposed access point support self-configuring, self-optimizing (channel, power client connection) and self-healing considering the situation of the deployment		
14	The proposed solution/access points should provide WIDS/WIPS and should also support auto containment of the ROUGE APs and DOS ATTACK		
15	Access point should be powered with POE or Power adapter		
16	Access point should be unified and should be managed from central cloud based WLC / cloud managed dashboard and support WIDS/WIPS functionality.		
17	Access Point should have Real-time spectrum intelligence capabilities		
18	The proposed solution shall support PMK, 802.11r for fast layer 2 roaming		
19	The proposed solution shall support distributed layer 3 roaming		
20	The proposed solution shall support decision at the access points level which includes layer 3 to layer 7 stateful firewall decisions, QOS policies, NAC policies etc for high performance and scaling (by taking decisions at the edge level)		
21	The proposed solution shall support WIPS/WIDS solution to protect from threats.		
22	The proposed access point must support SU-MIMO, UL and DL MU-MIMO with software upgrade.		
23	The proposed solution shall support WIPS/WIDS solution using a dedicated radio/hardware for monitoring to protect from threats.		
24	The proposed AP with 5 years replacement warranty and 5 years of enterprise licence, 24/7 TAC support along with the India TAC number		

Specification for Cloud Managed Dashboard / Cloud Managed Centralized Management

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

Cloud Managed Dashboard / Cloud Managed Centralized Management			
Make : _____			
S.No	Specification	Technical Compliance Yes/No	Remarks
1	The proposed solution shall support complete management of the access points of all locations using single management dashboard from the same OEM		
2	The proposed solution shall support device configuration in the dashboard even before the devices are delivered		
3	The proposed solution shall support fully remote monitoring, configuration, troubleshooting considering the situation of the deployment		
4	The proposed solution shall support the manageability of the entire Wi-Fi components in the single management dashboard which supports minimum 1000 AP's and scale with all features enabled from day one		
5	The proposed solution shall support zero touch plug and play deployment from day one		
6	The proposed solution shall support real time alerts types (configuration changes, device goes offline, rogue AP interfered, new user registration etc) with email option		
7	The proposed solution shall support PMK, 802.11r for fast layer 2 roaming		
8	The proposed solution shall support layer 3 roaming in distributed model		
9	The proposed solution shall support decision at the access points level which includes layer 3 to layer 7 decisions, QOS policies, NAC policies etc for high performance and scaling (by taking decisions at the edge level)		
10	The proposed solution shall support hardware acceleration and high memory shall be utilized for applying firewall policies, voice and video optimization thus avoiding the processing at the wireless management dashboard level		

11	The proposed solution shall provide Wireless detail (AP level detail and Client level detail) like Usage in Mbps, Overall clients connected, Signal quality in SNR ratio, Wireless latency in ms, Channel utilization and interference data, data rate of AP.		
12	The proposed solution shall support the network wide visibility in terms of overall clients connected (online vs offline), overall network wide real time application usage, network real time bandwidth usage etc.		
13	The proposed solution shall support per client visibility with real time location in the custom geographical map		
14	The proposed solution shall support per client visibility with live connection details including SSID, Access point, Signal strength, device type, Wireless channel, spectrum, data rate, channel width, streams etc.		
15	The proposed solution shall support per client application/ usage statistics including protocol, port, data sent/received and usage etc.		
16	The proposed solution shall support network summary report with scheduling email along with daily, weekly, monthly reporting including HTML & plain text types		
17	The proposed solution shall support network summary report with top usage details including customization and historical reporting.		
18	The proposed solution shall support authentication methods includes open association, PSK with WEP/WPA2, MAC based auth, WPA2-Enterprise with 802.1X based radius server		
19	The proposed solution shall support captive portal Sign-on option with authentication includes Radius server, LDAP server, AD server, 3rd party credentials etc		
20	The proposed solution shall support QOS, firewall rules L3 to L7 and application/traffic shaping inbuilt in the access point itself.		
21	The proposed solution shall support Layer 7 rules including various application types inbuilt and customization http address port range, IP range etc		
22	The proposed solution shall support traffic shaping at a per application level		
23	High Availability mode shall allow geographically dispersed installation between Controllers / Dashboard platform		
24	The controller / dashboard platform failover shall not trigger client de-authentication and re-association		

25	The controller shall support Controller / dashboard software patching for fixing bugs		
26	The controller shall support hot AP software patching for fixing bugs		
27	The controller shall support the AP Software upgrade in batches on a pre-defined scheduled/iteration basis.		
28	The proposed solution shall support detailed location analytics and presence analytics		
29	The proposed solution shall support Social media authentication		
30	The proposed solution shall support internal as well as external captive portal API integration to support 3rd party Captive portal and should have inbuilt Captive portal customization .		
31	The proposed solution should come with redundancy from day one		
32	The proposed solution shall support decision at the access points level which includes layer 3 to layer 7 stateful firewall decisions, QOS policies, NAC policies etc for high performance and scaling (by taking decisions at the edge level)		
33	The proposed solution shall support spectrum analysis on real time and rogue AP containment by doing dynamic classification		
34	The proposed solution shall support full client, OS visibility and context based policy can be assigned to different users, devices based on preferences		
35	The proposed solution shall support inbuilt Radius database for authentication (username/password) and authorization.		
36	The proposed solution shall support device profiling and fingerprinting for compliance purpose.		
37	The proposed solution shall support summary reporting and network analytics		
38	The solution must have built-in guest captive portal for on boarding guests / public users or equivalent feature		
39	The solution must support visibility into connectivity issues that impact Wireless user experience		
40	The proposed solution shall support health and real-time visibility of proposed product		
41	The proposed solution shall provide 24/7 TAC support along with the India TAC number.		

[II] Specification for Layer 3 Network Core Switch

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

Layer 3 Network Core Switch			
Make : _____		Model : _____	
S.No	Specification	Technical Compliance Yes/No	Remarks
1.1	General Features :		
1.1.1	Switch shall be 1U and rack mountable in standard 19" rack.		
1.1.2	Switch shall have 16 GB RAM and 16 GB Flash		
1.1.3	Switch shall have hot swappable 1:1 redundant internal power supply and redundant fan.		
1.1.4	Switch shall support VSS or equivalent stacking features from day one		
1.2	Performance :		
1.2.1	Switching system shall have minimum 2 Tbps of switching capacity and minimum 1000 Mpps of forwarding rate		
1.2.2	Switching system shall have minimum 82K MAC Addresses and 4K VLANs		
1.2.3	Switch should support minimum 16K ACLs, 7K IPv4 Multicast routes and 7K IPv6 Multicast routes		
1.2.4	Switch shall support application visibility and traffic monitoring BY sflow/jflow/netFlow entries OR equivalent		
1.2.5	Packet buffer : 32 MB OR More		
1.2.6	The device should be IPv6 certified from day one		
1.3	Functionality :		
1.3.1	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES), 802.3x, 802.1p, 802.1Q, 1588v2		
1.3.2	Should support AES-256 support with MACSEC-256 encryption algorithm on hardware		
1.3.3	Must support Border Gateway Protocol Version 4 (BGPv4), and BGPv6, MPLS, IS-IS, VRF, VXLAN, NAT, OSPF Routed Access (OSPFv2), and OSPFv3, Policy-Based Routing (PBR), PIM SM, PIM-SSM and Virtual Router Redundancy Protocol (VRRP) from Day 1		

1.3.4	Shall have 802.1p class of service, marking, classification, policing and shaping. Should support strict priority queuing.		
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, Netconf/YANG.		
1.3.6	Switch should support port security, DHCP snooping, Spanning tree root guard, First Hop Security.		
1.3.7	IPv6 support in hardware, providing wire rate forwarding for IPv6 network		
1.3.8	Should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.		
1.3.9	Switch should support for QoS and L2/L3 Virtual Network Interface (VNI)		
1.4	Interface		
1.4.1	Switch should have 24 nos. of 1/10/25GE with SFP/SFP+/SFP28 ports and should have 4 x 40/100 GE uplink ports from day one		
1.5	Certification:		
1.5.1	Switch shall conform to UL 60950, IEC 60950, CSA 60950, EN 60950, EN55024: 2010 + A1: 2015 Standards		
1.5.2	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.		

[[III]] Specification for Layer 2/3 Network Distribution Switch 12-port 1G/10G/25G SFP28

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

<u>Layer 2/3 Network Distribution Switch 12-port 1G/10G/25G SFP28</u>			
Make : _____		Model : _____	
S. No.	Specification	Technical Compliance Yes/No	Remarks
1.1	General Features :		
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.		
1.1.2	Switch should support internal hot-swappable Redundant Power supply		

1.1.3	Switch should have redundant hot swappable fans.		
1.1.4	Switch should have minimum 16 GB RAM and 16 GB Flash.		
1.1.5	Switch should have capability for VSS stacking OR Modular stacking.		
1.2	Performance :		
1.2.1	Switch shall have minimum 1 Tbps of switching capacity and minimum 744 Mpps of forwarding rate.		
1.2.2	Switch shall have minimum 32K MAC Addresses and 4K VLANs.		
1.2.3	Should support minimum 39K IPv4 routes or more and 19K IPv6 routes or more		
1.2.4	Switch shall have 7K or more multicast routes.		
1.2.5	Switch should support 64 or more STP Instances.		
1.2.6	Switch should have 16MB or more packet buffer.		
1.3	Functionality :		
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z & 1588v2.		
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF, VRRP, PBR and QoS features from Day one		
1.3.3	Should support advance Layer 3 protocol like BGPv4, BGPv6 , MPLS, VRF, VXLAN, IS-ISv4, OSPFv3, MP-BGP		
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.		
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .		
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbour Discovery Inspection and IPv6 Source Guard.		
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-256 on hardware		
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as		

	devices connect to the switch for the device type.		
1.4	Interface		
1.4.1	Switch shall have 12 nos. 1G/10G/25Gbps SFP28 ports		
1.5	Certification:		
1.5.1	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.		
1.5.2	Switch shall conform to EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.		
1.5.3	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.		

[IV] Specification for Layer 2 Network Access Switch 48-Port 10/100/1000 BaseT PoE+Ports and 4 nos. SFP+ uplinks

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

<u>Layer 2 Network Switch 48-Port 10/100/1000 BaseT PoE+ Ports and 4 nos. SFP+ uplinks</u>			
Make : _____		Model : _____	
S. No.	Specification	Technical Compliance Yes/No	Remarks
1.1	General Features :		
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.		
1.1.2	Switch should support internal field replaceable redundant power supply unit		
1.1.3	Switch should have minimum 2 GB RAM and 4 GB Flash.		
1.1.4	Switch should have capability for VSS stacking OR Modular stacking and should support 8 switches in single stack.		
1.1.5	Should support a stacking bandwidth of 80 Gbps.		
1.2	Performance :		
1.2.1	Switch shall have minimum 176 Gbps of switching capacity and 130 Mpps of forwarding rate.		
1.2.2	Switch shall have minimum 16K MAC Addresses and 4K VLANs.		
1.2.3	Should support minimum 11K IPv4 routes or more		
1.2.4	Switch shall have 1K or more multicast routes.		
1.2.5	Switch should support 64 or more STP Instances.		
1.2.6	Switch should have 6MB or more packet buffer.		
1.3	Functionality :		
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w,		

	802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.		
1.3.2	Switch must have functionality like static routing, RIP, REP PIM, OSPF, VRRP, PBR and QoS features from Day one.		
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.		
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.		
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .		
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.		
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.		
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.		
1.4	Interface		
1.4.1	Switch shall have 48 nos. 10/100/1000 Base-T ports and 4 nos. SFP+ uplinks port		
1.4.2	All 48 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 740 W or more.		
1.5	Certification:		
1.5.1	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.		
1.5.2	Switch shall conform to EN 300 386, EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.		

1.5.3	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.		
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[V] Specification for Layer 2 Network Switch 24-Port 10/100/1000 BaseT PoE+ Ports and 4 nos. SFP+ uplinks

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

Layer 2 Network Switch (24 nos. 10/100/1000 Base-T ports and 4 nos. SFP+ uplinks)			
Make : _____		Model : _____	
S. No.	Specification	Technical Compliance Yes/No	Remarks
1.1	General Features :		
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.		
1.1.2	Switch should support internal field replaceable redundant power supply unit		
1.1.3	Switch should have minimum 2 GB RAM and 4 GB Flash.		
1.1.4	Switch should have capability for VSS stacking OR Modular stacking and should support 8 switches in single stack.		
1.1.5	Should support a stacking bandwidth of 80 Gbps.		
1.2	Performance :		
1.2.1	Switch shall have minimum 128 Gbps of switching capacity and 95 Mpps of forwarding rate.		
1.2.2	Switch shall have minimum 16K MAC Addresses and 4K VLANs.		
1.2.3	Should support minimum 11K IPv4 routes or more		
1.2.4	Switch shall have 1K or more multicast routes.		
1.2.5	Switch should support 64 or more STP Instances.		
1.2.6	Switch should have 6MB or more packet buffer.		
1.3	Functionality :		

1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.		
1.3.2	Switch must have functionality like static routing, RIP, REP PIM, OSPF, VRRP, PBR and QoS features from Day one.		
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.		
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.		
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .		
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbour Discovery Inspection and IPv6 Source Guard.		
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.		
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.		
1.4	Interface		
1.4.1	Switch shall have 24 nos. 10/100/1000 Base-T ports with 4 nos. SFP+ uplink ports		
1.4.2	All 24 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 370W or more.		
1.5	Certification:		
1.5.1	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.		
1.5.2	Switch shall conform to EN 300 386, EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility)		

	requirements.		
1.5.3	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.		

[VI] SFP Modules

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

SFP+ Module (support 10 Gbps single mode fiber)			
Make : _____		Model : _____	
S.No.	Specification	Technical Compliance Yes/No	Remarks
	Specification		
1	The SFP should support DOM for diagnosis		
2	Should support upto 10 Km link length		
3	Should support 10 Gbps single mode fiber		
4	Should support 1310 nm wavelength		
5	Should support minimum transmit power of -8.2 dbm		
6	Should support upto 70 degree Celsius temperature		

Copper Module (support speed of up to 1Gbps)			
Make : _____		Model : _____	
S.No.	Specification	Technical Compliance Yes/No	Remarks
1	Should support speed of upto 1Gbps		
2	Should support up to 100 meters link length		
3	Should support CAT 5e/CAT 6A		
4	Should support up to 70 degree Celsius temperature		

SFP Module (support 1 Gbps multi-mode fiber)			
Make : _____		Model : _____	
S.No.	Specification	Technical Compliance Yes/No	Remarks
1	The SFP should support DOM for diagnosis		
2	Should support up to 1000 meters link length		
3	Should support 1 Gbps multi mode fiber		

4	Should support 850 nm wavelength		
5	Should support minimum transmit power of -7.3 dbm		
6	Should support up to 70 degree Celsius temperature		

SFP Module (support 1 Gbps Multi Mode Fiber and up to 10 km link length Single-mode Fiber)			
Make : _____		Model : _____	
S.No.	Specification	Technical Compliance Yes/No	Remarks
1	The SFP should support DOM for diagnosis		
2	Should support speed of upto 1Gbps		
3	Should support up to 10 km link length Single-mode Fiber and 550 meter link length Multimode fiber		
4	Should support 1310 nm wavelength		
5	Should support minimum transmit power range of -3 to -9.5 dbm		
6	Should support upto 70 degree Celsius temperature		

[VII] Active Optical SFP Cables

Accepted Make: Cisco /HPE/ Ruckus / Juniper or equivalent brand

Active Optical SFP Cable (1 Meter)			
Make : _____		Model : _____	
S.No.	Specification	Technical Compliance Yes/No	Remarks
1	10GBASE-AOC SFP+ Cable 1 Meter		

Active Optical SFP Cable (3 Meter)			
Make : _____		Model : _____	
S.No.	Specification	Technical Compliance Yes/No	Remarks
1	10GBASE-AOC SFP+ Cable 3 Meter		

[B] Specification for Passive Networking Component

Accepted Make: CommScope/Simon/Panduit or equivalent

[I] CAT 6A LSZH U/UTP Cable

Make: _____ Model: _____

S.No.	Specification	Compliance	Remarks

		(Yes/No)	
	Channel Performance		
1	The Category 6A/ Class EA UTP SCS shall comply with the following standards a) ISO/IEC 11801:2010 b) EN 50173 Part 1 through Part 5:2010 and 2011 c) ANSI/TIA-568-C d) IEC 60603-7-4 e) IEEE 802.3 applications as outlined in section 2		
2	The Category 6A/ Class EA UTP system should support the following IEEE Ethernet applications		
	a) 802.3e - 1BASE5 b) 802.3i - 10BASE-T c) 802.3u - 100BASE-TX, 100BASE-T4 d) 802.3y - 100BASE-T2 e) 802.3z - 1000BASE-X f) 802.3ab - 1000BASE-T g) 802.af - Power Over Ethernet (15.4W) h) 802.3at - Power Over Ethernet Enhancements (25.5W) i) 802.3az - Energy Efficient Ethernet 802.3at - Power Over Ethernet Enhancements		
3	It is critical that guaranteed worst-case values are provided to ensure the SCS can support 1G transmission without risk. "Average value" or "Typical Value" is not acceptable as they do not account for lower performance channels. The proposed Category 6A UTP SCS, when configured as a worst-case 100-meter channel shall provide performance headroom over limits specified by Cat6A		
4	NEXT - Minimum 3 dB above the standards; Should support a minimum of 4 connector Channel with a minimum 3 dB guaranteed NEXT		
5	Insertion Loss - 3%		
6	Return Loss - 1.0 db		
7	The SCS must consist of individual components provided by the same manufacturer. "Mix and Match" products are not allowed as there is no guarantee that the overall channel will meet Category 6A Channel requirements if constructed with components from different vendors.		
8	The Category 6A cable and Category 6A channel components shall be manufactured by a single manufacturer. The manufacturer shall warrant the Category 6A channel cable, components, and applications for a period of 25 years.		

9	The 25-year warranty shall be a transferable warranty and has component replacement policy in case of manufacturing defect		
10	The SCS must be tested by an ISP 17025 accredited 3rd Party test facility to EIA/TIA 568C, ISO/IEC 11801 Amendment 1 and for the channel testing must be provided as part of the bid response.		
11	The Category 6A system should support channels that are shorter than 15 meters for 2, 3, 4 connector channels without any minimum length requirements.		
12	Horizontal Cable		
13	The Cable should meet ANSI/TIA 568C.2 Category 6A Specifications		
14	Cables should have TRACKING Number to check the Genuity / details of the test reports		
15	The cable should consist of Eight 23 AWG copper conductors. Copper Clad Aluminium or any other combinations are not allowed		
16	The Cable should be round in shape		
17	The weight of the cable box of 1000 Feet should not be less than 34.7 lb		
18	The nominal Jacket thickness should be 0.05 inches		
19	The nominal Outside diameter should not be more than 0.285 inches		
21	The cable should support the installation temperature: 0 to 60 0 C It should support Operating temperature of -20 to 60 0 C		
21	The cable shall be available in Low-Smoke, Zero Halogen (LSZH) compatibility and The LSZH version must comply with the following Fire Safety standards: 1) ISO/IEC 60332-3-22: Vertical Flame Spread 2) ISO/IEC 60754-2: Acidity 3) ISO/IEC 61034-2: Smoke Density		
22	Cable shall comply to below mechanical specifications: Conductor Material- Bare copper Insulation Material- Polyolefin Jacket Material- Low Smoke Zero Halogen (LSZH) Separator Material- Polyolefin		

	Separator 2 Material-Polyolefin		
23	The cable and cordage shall be "True UTP" components that do not include internal or external shields, screened components or drain wires. No Special Grounding requirements.		
24	The horizontal cable shall have a unique print string on the cable jacket. This unique identifier shall also be used for on-line reference to a full set of factory tests that were performed on a sample from the same mater reel. The test parameters shall include NEXT, PSNEXT, Return Loss, Attenuation, ELFEXT and PSELFEXT. The on-line reference must be available on the SCS vendor public website, such that it can be accessed at any time.		

[II] Specification for Ceiling connector Assembly/ Field Terminable Plug

Make: _____ Model: _____

S. No.	Specification	Compliance (Yes/No)	Deviation if any
1	Ceiling Connector Assembly (CCA) shall provide a means to connect horizontal cable to a short, single-ended patch cord assembly in the field.		
2	Shall be available in with cord and without cord constructions		
3	Shall be available in Cat 6 and Cat 6A variants as per requirement		
4	Shall be able to terminate without any specific tool		
5	Shall meet or exceed the standards ANSI/TIA-568-C.2 Category 6 and 6A / ISO 11801 Class E and EA performance. Shall Meet or exceed all ANSI/TIA-568-C.2 Category 6 and 6A and ISO 11801 Class E and EA connector and channel transmission performance requirements.		
6	Shall Meet applicable requirements of IEC 60603-7		
7	Shall supports IEEE 802.3af, 802.3at, and 802.3bt PoE requirements		
8	Shall be compatible with solid & stranded conductor from 26 to 22 AWG		
9	Shall have plug insertion life as 750 times minimum		
10	Flammability Rating: UL 94 V-0		
11	Safety compliance: ETL cETL		

[III] Specification for CAT 6A LSZH U/UTP RJ45 Patch Cord

Make: _____ Model: _____

S. No.	Specification	Compliance (Yes/No)	Remarks
1	SCS must support patch cord lengths of 1 meter minimum and equipment cords of 2 meter minimum and The Patch cords shall be available in 28 AWG reduced diameter LS-CM Dual Rated Cord complying to ISO/IEC 11801 Class EA TIA/EIA-568 Cat 6A		
2	Cords shall be equipped with 8-pin modular plugs on each end.		
3	All cords shall be round, and consist of copper conductors, tightly twisted into individual pairs.		
4	Nominal cordage diameter shall not exceed 4.95 mm.		
5	Plugs shall be designed with an anti-snag latch to facilitate easy removal during move, add and change processes.		
6	The LSZH version must comply with the following Fire Safety standards: CM-LS & UL 1863		
7	The patch cord shall comply to below mechanical specification: Conductor Material- Copper Alloy, Polycarbonate Contact Plating Material- Gold over nickel Material Type- Phosphor Bronze		
8	The cordage shall be UTP components that do not include internal or external shields, screened components or drain wires.		
9	The patch cords will have insertion life of 750 cycles minimum.		

[IV] Specification for CAT 6A Patch Panel

Make: _____ Model: _____

S. No.	Specification	Compliance (Yes/No)	Remarks
1	24 or 48 Port Patch Panel		
2	The ganged adapter style patch panel will utilize increments of six RJ-45 style jacks in a common molded component.		
3	The ganged adapters shall have RJ45 jack in the front and Insulation Displacement Connector (IDC) at the rear of the module.		
4	The panel must be capable of supporting an upgrade to an intelligent system without any interruption to service due to patch cord removal or terminal block re-termination.		

5	Termination managers must be provided with the panel. These termination managers provide proper pair positioning, control, and strain relief features to the rear termination area of the panel.		
6	3rd Party Verification test certificates shall be provided to show compliance to ISO/IEC 11801 Amendment 2 testing for Cat 6A components.		
7	When configured in worst-case 100-meter channels with full cross-connects and consolidation points with the other products proposed in this tender, the panel shall be capable of delivering the minimum guaranteed channel performance		
8	The patch panel type shall be a 1U (24 port) or 2U (48 port) panel capable of supporting 24 or 48 unshielded modular 8-pin connectors compliant with IEC 60603-7-4 while meeting the Channel Performance as specified in Amendment 1 to ISO/IEC 11801:2002		
9	The panel shall be available in 24-port and 48-port configurations with universal A/B labelling and 110 connector terminations on rear of panel allowing for quick and easy installation of 22 to 24 AWG cable		
10	The panel shall be equipped with a removable rear mounted cable management bar and front and rear labels		
11	The panel shall be UL and cUL Listed		
12	Operating Temperature Range = 14°F to 140°F (-10°C to 60°C)		
13	Storage Temperature Range = -40°F to 158°F (-40°C to 70°C)		
14	Humidity = 95% (noncondensing)		
15	Nominal Solid Conductor Diameter = 0.025 to 0.020 in (0.64 to 0.51 mm) (22 to 24 AWG)		
16	Nominal Stranded Conductor Diameter:=0.025 to 0.020 in (0.64 to 0.51 mm) (22 to 24 AWG)		
17	Insulation Types = All plastic insulates (including PVC, irradiated PVC, Polyethylene, Polypropylene, PTF Polyurethane, Nylon, and FEP)		
18	Insertion Life = 750 minimum insertions of an FCC 8-Position Telecommunications Plug		

[V] Fiber Specification of Single mode Os2 and Accessories:

Fiber Optic Cable, 9/125μ, 24 core OS2 Outdoor Armored				
Make _____		Model _____		
S.No	Item/Description			
	<u>Minimum Specifications</u>		<u>Compliance (Yes/No)</u>	<u>Remarks</u>
1	Shall be 9/125μM, 24 core Single mode OS2, ECCS metallic armored cable as per ANSI/TIA/EIA-568-C.3 EN 50173-1 , ISO/IEC 11801 Issue 2 , Telcordia GR-20-CORE , ITU-T G.652(A,B,C and D) , IEC-60973-2-50 ,TIA/EIA 492CAAB , IEC794-1 , ITU-T G.652D			
2	Shall be suitable for using in the backbone cabling, campus site cabling, outdoor ducts or direct burial cabling applications			
3	Shall be of unitube construction with 6 core of fiber, Tubes are Gel filled to ensure protection against moisture ingress.			
4	Optical Parameters – OS2 , a) Attenuation @ 1310nm ≤ 0.34 dB/Km (Maximum) b) Attenuation @ 1550nm ≤ 0.22 dB/Km (Maximum)			
5	Loose Tube PBTP Material,			
6	Jacketing Material Shall be HDPE with nominal thickness of 2.1 and having overall diameter (Nominal)10 mm.			
7	Mechanical Properties – Tensile Strength - 1250N, Crush Resistance -3000N			
8	Shall have water blocked E-glass yarn construction to prevent water absorption and consequent damages,			
9	Fiber cable shall be RoHS Compliant.			
10	Operating Temperature, deg. – 20 to + 70 °C			
11	The cable shall be rodent resistant			

Fiber Optic LC style fully loaded Patch Panel (FOPP)/LIU, 19" Rack Mount with 12/24 nos. of OS2 9/125 μ without Pigtails

Make: _____ Model: _____

S.No	<u>Minimum Specifications/ Functionalities / Capabilities</u>	<u>Compliance (Yes/No)</u>	<u>Remarks</u>
1	Shall have 6/12/24 nos. of ISO/IEC-11801-OS2 Pigtails with LC Type Connectors		
2	Fiber panel shall support Heat shrink, single fiber fusion splice type.		
3	Shall have all accessories including coupler plates pre-loaded with duplex LC couplers (OS2),		
4	Fiber panel shall have maximum insertion loss as 0.3dB & minimum Return Loss as 45dB.		
5	Shall be Front Patching Type, 1U high and rack mountable on standard 19" rack with mounting arrangements		
6	Shall be supplied with fusion splicing sleeves for termination of fiber.		
7	Shall be made of powder coated steel or aluminum		
8	Shall be slide-out type drawer enclosure for Easy access to splicing tray, Easy access to back side of the connector and have labels for better identification		
9	Shall have trays with hinges (book type) which facilitates easy Fiber management and greater access during installation and rework		
10	Shall have all necessary accessories for fiber management inside such as Fiber guides, radius controls, splice protector sleeves & secure tie downs within the FOPP		

Fiber Optic LC style OS2 9/125/250µm Single mode Pigtails.

Make: _____ Model: _____

S.No	Minimum Specifications / Functionalities / Capabilities	Compliance (Yes/No)	Remarks
1	Fiber Pigtails shall be of OS2 Single mode fiber with LC/UPC Type Connectors, 900 µm outer jacket with aramid yarn,		
2	Fiber cable shall comply as per ANSI/ICEA S-83-596 ,Telcordia GR-409 standard .		
3	Fiber cable shall be of G.652.D and G.657.A1, Tera SPEED® OS2 Fiber Type		
4	Shall have Insertion Loss, maximum, 0.25 dB Return Loss, minimum, 50.00 dB		
5	Pigtail Cable Information – Outer Jacket Diameter – 0.9mm Raiser rated, Outer jacket color –Yellow , Outer Jacket Material – LSZH		
6	Shall comply to Flame Test Method IEC 60332-3, IEC 60754-2, IEC 61034-2 , IEEE 383 ,UL 1666 , UL 1685, IEC 60794-1 E3, IEC 60794-1 E6		
7	Shall have NEC OFNR-LS (ETL) and c(ETL) listing.		

Fiber Optic Patch Cable, 3,5 Mtrs. Long, OS2 9/125/250µm Duplex, LSZH

Make: _____ Model: _____

Sr.No	Minimum Specifications / Functionalities / Capabilities	Compliance (Yes/No)	Remarks
1	Length shall be available in 3/5 meters etc		
2	All patch cords shall conform to TIA/EIA-568-C.3, ANSI/ICEA S-83-596, Telcordia GR-409, IEC 60332-3 , IEC 60754-2 , IEC 61034-2 ,IEEE 383 , UL 1666 ,UL 1685 , IEC 60794-1 E3, IEC 60794-1 E6, IEC 60794-1 E4, IEC 60794-1 E1, IEC 60794-1 E7		
3	Shall have OS2 Bend-Insensitive Single mode fiber Conform to G.657.A1 Standard		
4	Insertion Loss, maximum 0.34 dB, Return Loss, minimum 50.0 dB		

5	Cable Information – Outer Jacket Diameter –1.8 x 3.6mm, Outer jacket colour – Aqua, Outer Jacket Material – LSZH		
6	Dispersion, maximum- 18 ps(nm-km) at 1550 nm , 3.5 ps(nm-km) from 1285 nm to 1330 nm at 1310 nm		
7	Attenuation, maximum 0.50 dB/km @ 1,310 nm & 0.50 dB/km @ 1,550 nm		
8	All patch cords shall be factory terminated and packed.		
9	Ferrule Material shall be of Zirconia and Pre-radiused		
10	Shall be RoHS Compliant		
11	Shall be Low-Smoke & Zero-Halogen		

[C] SPECIFICATION FOR NETWORK RACK:

Accepted Make: Rittal/Elixir/Netrack or equivalent

Technical specifications for 15U Rack			
Make : _____		Model : _____	
Sl. No	Specification Required	Compliance (Yes/No)	Remarks
1	Required Size : 600 Width x 600 Depth		
2	Provision for wall mount installation		
3	Front door to be perforated.		
4	Side panels to be perforated & should be openable.		
5	Power Distribution Strip,5 Socket,5/15Amp With MCB		
6	Roof Mount Fan		
7	With standard mounting accessories & Kit		

Technical specifications for 17U Rack			
Make : _____		Model : _____	
Sl. No	Specification Required	Compliance (Yes/No)	Remarks
1	Required Size : 600 Width x 600 Depth		
2	Provision for Floor mount installation with Lockable Castors wheels		
3	Front door & Back door to be perforated.		
4	Side panels to be perforated & should be openable.		
5	Ventilated Top and Bottom		
6	Power Distribution Strip,5 Socket,5/15Amp With MCB		
7	Roof Mount Fan		
8	With standard mounting accessories & Kit		

Technical specifications for 24U Rack			
Make : _____		Model : _____	
Sl. No	Specification	Compliance (Yes/No)	Remarks
1	Required Size : 600 Width x 800 Depth		
2	Provision for Floor mount installation with Lockable Castors wheels		
3	Front door & Back door to be perforated.		
4	Side panels to be perforated & should be openable.		
5	Ventilated Top and Bottom		
6	Power Distribution Strip,10 Socket,5/15Amp With MCB		
7	Roof Mount Fan		
8	With standard mounting accessories & Kit		

[D] SPECIFICATION FOR UPS:

Accepted Make: Vertive/APC/Eaton or equivalent

[I] 6KVA Online UPS with 60min backup

Sr. No.	Minimum Specifications / Functionalities / Capabilities			Compliance (Yes/No)	Remarks
	6KVA Online UPS with 60min backup				
1	Rating		6KVA/6kw (1in-1out)		
2	System parameter	Technology	IGBT based Double conversion PWM based online UPS		
		Parallel mode	max. support upto 4 units (N+1)		
		Installation mode	Rack/Tower UPS must be convertible (Possible to install in rack as well on floor with rotation display)		
3	Input	Rated voltage	220/230/240 VAC 1-phase,2-wire		
		Volatge Range	Single phase 176VAC -288VAC		
		Rated Frequency	50Hz/60Hz		
		Frequency Range	40Hz ~ 70Hz		
		Power factor	Unity		
4	Output	Rated power	6KVA/6kw		
		Voltage	230vac Single phase		
		Frequency synchronization range	Rated frequency±3Hz. Configurable range: ±0.5Hz ~ ±5Hz		
		Rated Power Factor	Unity		
		Crest Factor	3:1		
		Voltage harmonic	< 2% (linear load)		

		distortion			
		Voltage Regulation	1%		
		Dynamic response recovery time	60ms		
		Inverter Overload Capability on utility mode	At 25°C: 105% ~ 125%- 5min; 125% ~ 150%-1min; 150%- more than 200ms		
		Programmable Outlet	Available		
		Inverter Overload Capability on battery mode	At 25°C :105% ~125%-60~ 30 s; >125%- more than 200ms		
5	Bypass	Separate bypass	Yes		
		Static bypass	Inbuilt		
6	Efficiency	ECO Mode	upto 99%		
		Online mode (AC-AC)	> 95.5%		
		Inverter Efficiency(DC-AC)	>92%		
7	Battery back up	Type	SMF, lead-acid,VRLA		
		back up min	SMF Battery: minimum VAH (60 Min backup on full load)		
		Battery charging capacity	As per 10 % of battery AH capacity .		
8	Transfer Time	Mains - Battery	0ms		
		Inverter-Bypass	Synchronous transfer: ≤0ms		
			Asynchronous transfer (default): ≤20ms		
9	Noise		<65db		
10	Panel display mode	Display type	Graphical LCD display		
		No of events stored	Max 256		
		Orientation	Gravity sense		
11	Environmental	Operating temperature	0°C ~ 50°C		

	parameter	Storage temperature	-40°C ~ +70°C (battery excluded); -25°C ~ +55°C (battery included)		
		Relative humidity	5%RH ~ 95%RH, non-condensing		
		Altitude	≤3000m; derating when higher than 3000m		
12	Mechanical parameter	Ventilation	Forced -air cooled		
		Ingress protection level	IP20		
		Cable entry	Rear		
13	Network Management	Smart RS232/USB	Supports Windows, Linux, Unix and MAC		
		Built in LAN Port for remote monitoring	Required		
		Optional SNMP	Power management from SNMP manager and web browser		
		Management software	Site monitor		
		Modbus	Inbuilt via multifunction port		
14	Certifications	Safety (CE)	IEC/EN62040-1-1		
		Electromagnetic Compatibility(EMC)	IEC/EN62040-2, IEC/EN61000-3-11, IEC/EN61000-3-12, YD/T1095-2008		
		Surge Protection	IEC/EN62040-2, meeting IEC/EN61000-4-5		
		Energy star	As per UL approved		
		ROHS	Yes		
		Govt approved NABL lab test report	Required		
		Quality standard	IS 9001-2015		
		Environment standard	ISO 14001		
		OSHAS	ISO 45001		
		IT security management	ISO 27001		

[II] 10KVA Online UPS with 60min backup

Make: _____

Model: _____

Sr. No.	Minimum Specifications / Functionalities / Capabilities		Compliance (Yes/No)	Remarks
	10KVA Online UPS with 60min backup			
1	Rating		10KVA/10kw (1in - 1out)	
2	System parameter	Technology	IGBT based Double conversion PWM based online UPS	
		Parallel mode	max. support upto 4 units (N+1)	
		Installation mode	Rack/Tower UPS must be convertible (Possible to install in rack as well on floor with rotation display)	
3	Input	Rated voltage	400VAC 3-phase,4-wire or 220/230/240 VAC 1-phase,2-wire	
		Volatge Range	176VAC -498VAC	
		Rated Frequency	50Hz/60Hz	
		Frequency Range	40Hz ~ 70Hz	
		Power factor	0.95 for Three Phase	
4	Output	Rated power	10KVA/10kw	
		Voltage	230vac Single phase	
		Frequency synchronization range	Rated frequency±3Hz. Configurable range: ±0.5Hz ~ ±5Hz	
		Rated Power Factor	Unity	
		Crest Factor	3:1	

		Voltage harmonic distortion	< 2% (linear load)			
		Voltage Regulation	1%			
		Dynamic response recovery time	60ms			
		Inverter Overload Capability on utility mode	At 25°C: 105% ~ 125%-5min; 125% ~ 150%-1min; 150%- more than 200ms			
		Programmable Outlet	Availble			
		Inverter Overload Capability on battery mode	At 25°C :105% ~125%-60~30 s; >125%- more than 200ms			
5	Bypass	Static bypass	Inbuilt			
6	Efficiency	ECO Mode	upto 99%			
		Online mode (AC-AC)	> 95.8%			
		Inverter Efficiency(DC-AC)	>92%			
7	Battery back up	Type	Sealed, lead-acid,Tubular,LI-ION			
		back up min	SMF/VRLA Battery: minimum VAH (60 min backup on full load)			
		Battery charging capacity	As per 10 % of battery AH capacity.			
8	Transfer Time	Mains - Battery	0ms			
		Inverter-Bypass	Synchronous transfer:	≤0ms		
			Asynchronous transfer (default):	≤20ms		
9	Noise		<65db			
10	Panel display mode	Display type	Graphical LCD display			
		No of events stored	Max 256			
		Orientation	Gravity sense			

11	Environmental parameter	Operating temperature	0°C ~ 50°C		
		Storage temperature	-40°C ~ +70°C (battery excluded); -25°C ~ +55°C (battery included)		
		Relative humidity	5%RH ~ 95%RH, non-condensing		
		Altitude	≤3000m; derating when higher than 3000m		
12	Mechanical parameter	Ventilation	Forced -air cooled		
		Ingress protection level	IP20		
		Cable entry	Rear		
13	Network Management	Smart RS232/USB	Supports Windows, Linux, Unix and MAC		
		Built in LAN Port for remote monitoring	Required		
		Optional SNMP	Power management from SNMP manager and web browser		
		Management software	Site monitor		
		Modbus	Inbuilt via multifunction port		
14	Certifications	Safety (CE)	IEC/EN62040-1-1		
		Electromagnetic Compatibility(EMC)	IEC/EN62040-2, IEC/EN61000-3-11, IEC/EN61000-3-12, YD/T1095-2008		
		Surge Protection	IEC/EN62040-2, meeting IEC/EN61000-4-5		
		Energy star	As per UL approved		
		ROHS	Yes		
		Govt approved NABL lab test report	Required		
		Quality standard	IS 9001-2015		

		Environment standard	ISO 14001		
		OSHAS	ISO 45001		
		IT security management	ISO 27001		

Note: All electrical cables and components used for power supply requirements of UPS should have ISI Standard Mark

[E] Other Materials (Accepted Standard):

Item: HDPE Pipe/ PVC Pipe/ Reinforce Pipe/Trunking Pipe/ Conduits

Accepted Standard: ISI Standard Mark

NOTE:

1. All Active Networking Components/Products should be from same OEM make only.
2. All Wi-Fi Access Points should be centralized cloud managed.
3. All Passive Networking Components/Products should be from same OEM make only and 25 years of performance warranty certificate from OEM.
4. All the switches should be manageable and enterprise class only.
5. All the switches should support common operating system for enterprise product family.
6. The Warranty period of all the Active Networking Components/Products should be 5 years and after that availability of 2 years of extended warranty. If Networking Components/products are declared end of life or end of support during this warranty period (total 7 years) by OEM then OEM/Vendor should be bound to provide equivalent or higher model of the product at no additional cost. Undertaking for the same is required from the OEM/Vendor.
7. UPS and Network Racks with 5 Years Warranty except batteries of UPS with 2 Years Warranty.
8. All the licenses of Hardware and Software should be registered /issued in the name of Gujarat National Law University.

6.3 Annexure C: Product Technical Documentation

Note: Vendors are required to provide printed technical documentation for the items listed in Table below. Availability of adequate, correct and relevant technical documentation is essential to support your technical compliance statement and for evaluation of offer. Vendors are requested to provide printed technical documentation. Vendor may add any other documentation, which will support their offer. Please include latest Product Guide or Reference Guide.

Checklist for Product Details/Documentation

Sr. No.	Items/Description	Make	Model
A	Wi-Fi 6 Indoor Access Points (Accepted Make : Cisco /HPE/ Ruckus / Juniper or equivalent brand)		
1	Wi-Fi 6 Cloud Managed Indoor Access Point including all applicable Licenses, Cables and Accessories		
2	Wi-Fi 6 Cloud Managed Indoor Access Point including all applicable Licenses, Cables and Accessories		
B	Network Switches and Components (Accepted Make : Cisco /HPE/ Ruckus / Juniper or equivalent brand)		
3	24-port 1G/10G/25G SFP28 L3 Switch including all applicable Licenses,Cables, Accessories		
4	12-port 1G/10G/25G SFP28 L2/L3 Switch including all applicable Licenses, Cables, Accessories		
5	48-ports 10/100/1000 BaseT PoE+ Ports L2 Switch with 4 nos. SFP+ uplink ports including all applicable Licenses, Cables, Accessories		
6	24-ports 10/100/1000 BaseT PoE+ Ports L2 Switch with 4 nos. SFP+ uplink ports including all applicable Licenses, Cables, Accessories		
7	1G Single Mode / Multi Mode SFP Module		
8	1G Multi Mode SFP Module		
9	10G Single Mode SFP+ Module		
10	1G Copper Module		
11	10G AOC 1 Mtr.		
12	10G AOC 3 Mtr.		
C	Copper Cabling Components (Accepted Make : CommScope/Siemon/Panduit or equivalent		

13	Cat6A UTP Cable		
14	Termination components for Wi-Fi end		
15	UTP patch cords - 1 mtr		
16	Loaded patch panel		
D	Fiber Cabling Components (Accepted Make : CommScope/Siemon/Panduit or equivalent)		
17	24 Core Single Mode armored fiber cable		
18	12 Port Fiber Optic Patch Panel/LIU for single mode fiber with loaded pigtail		
19	24 Port Fiber Optic Patch Panel/LIU for single mode fiber with loaded pigtail		
20	LC-LC Singlemode fiber patch cord, 3 mtr		
21	SC-LC / SC-SC Singlemode fiber patch cord, 5 mtr		
E	Network Rack (Accepted Make : Rittal/Elixir/Netrack or equivalent)		
22	Indoor 15U Rack		
23	Indoor 17U Rack		
24	Indoor 24U Rack		
25	Cable Manager		
F	UPS Components (Accepted Make for UPS : Vertiv/APC/Eaton , Accepted Make for Battery : Amaron/Exide/Rocket, Accepted Standard for other Item : ISI Standard Mark)		
26	10 kVA / 10kW (1x1) UPS System with 60 min backup on full load as per KW. Including battery interlink, lug , battery rack, Input output cable, LUG, Gland , Dedicated earthing , DC cable with max possible length. SNMP card for remote monitoting and need to include network connectivity components.		
27	6 kVA / 6kW (1x1) UPS System with 60 min backup on full load as per KW. Including battery interlink, lug , battery rack, Input output cable, LUG, Gland , Dedicated earthing , battery DC cable with max possible length. SNMP card for remote monitoting and need to include network connectivity components.		

28	3C x 16 Sqmm Flex Cu Cable		
29	1C x 6 Sqmm Flex Cu Cable		
30	3C x 6 Sqmm Flex Cu Cable		
31	Distribution Board With Enclosure and Required Switchgear component 63A MCB input 32A DP MCB (4 nos) Including Industrial Connector at Both end in Output side.		
32	JB with 16A Switch Socket		
33	Termination component for Panel and Rack End		
34	32MM PVC LMS Conduit with Accessories		
G	Other material (Accepted Standard : ISI Standard Mark)		
35	25mm HDPE pipe		
36	32mm Rainforce pipe		
37	100X50mm PVC trunking		
38	25mm Conduits MMS class		
39	32mm PVC flexible		
40	50mm PVC flexible		

6.4 Annexure – D: Financial Bid

Sr. No.	Item/Description	Unit	Quantity	Make and Model	Rate/Unit Without Taxes Rs.	Total Amount (Qty x Rate) Without Taxes Rs.	Taxes (%)	Amount (Qty x Rate) With Taxes Rs.
[I]	Supply Components							
A	Wi-Fi 6 Indoor Access Points (Accepted Make : Cisco /HPE/ Ruckus / Juniper or equivalent brand)							
1	Wi-Fi 6 Cloud Managed Indoor Access Point including all applicable Licenses, Cables and Accessories	Nos.	731					
2	Wi-Fi 6 Cloud Managed Indoor Access Point including all applicable Licenses, Cables and Accessories	Nos.	78					
B	Network Switches and Components (Accepted Make : Cisco /HPE/ Ruckus / Juniper or equivalent brand)							
3	24-port 1G/10G/25G SFP28 L3 Switch including all applicable Licenses,Cables, Accessories	Nos.	2					
4	12-port 1G/10G/25G SFP28 L2/L3 Switch including all applicable Licenses, Cables, Accessories	Nos.	4					
5	48-ports 10/100/1000 BaseT PoE+ Ports L2 Switch with 4 nos. SFP+ uplink ports including all applicable Licenses, Cables, Accessories	Nos.	14					
6	24-ports 10/100/1000 BaseT PoE+ Ports L2 Switch with 4 nos. SFP+ uplink ports including all applicable Licenses, Cables, Accessories	Nos.	10					
7	1G Single Mode / Multi Mode SFP Module	Nos.	1					
8	1G Multi Mode SFP Module	Nos.	10					
9	10G Single Mode SFP+ Module	Nos.	44					

10	1G Copper Module	Nos.	6					
11	10G AOC 1 Mtr.	Nos.	3					
12	10G AOC 3 Mtr.	Nos.	1					
C	Copper Cabling Components (Accepted Make : CommScope/Siemon/Panduit or equivalent)							
13	Cat6A UTP Cable	Box	150					
14	Termination components for Wi-Fi end	Nos	809					
15	UTP patch cords - 1 mtr	Nos	1214					
16	Loaded patch panel	Nos	38					
D	Fiber Cabling Components (Accepted Make : CommScope/Siemon/Panduit or equivalent)							
17	24 Core Single Mode armored fiber cable	Meters	2100					
18	12 Port Fiber Optic Patch Panel/LIU for single mode fiber with loaded pigtail	Nos	10					
19	24 Port Fiber Optic Patch Panel/LIU for single mode fiber with loaded pigtail	Nos	6					
20	LC-LC Singlemode fiber patch cord, 3 mtr	Nos	54					
21	SC-LC / SC-SC Singlemode fiber patch cord, 5 mtr	Nos	9					
E	Network Rack (Accepted Make : Rittal/Elixir/Netrack or equivalent)							
22	Indoor 15U Rack	Nos	9					
23	Indoor 17U Rack	Nos	1					
24	Indoor 24U Rack	Nos	3					
25	Cable Manager	Nos	38					
F	UPS Components (Accepted Make for UPS : Vertiv/APC/Eaton or equivalent , Accepted Make for Battery : Amaron/Exide/Rocket or equivalent, Accepted Standard for other Item : ISI Standard							

	Mark)							
26	10 kVA / 10kW (1x1) UPS System with 60 min backup on full load as per KW. Including battery interlink, lug , battery rack, Input output cable, LUG, Gland , Dedicated earthing , DC cable with max possible length. SNMP card for remote monitoring and need to include network connectivity components.	Nos.	2					
27	6 kVA / 6kW (1x1) UPS System with 60 min backup on full load as per KW. Including battery interlink, lug , battery rack, Input output cable, LUG, Gland , Dedicated earthing , battery DC cable with max possible length. SNMP card for remote monitoring and need to include network connectivity components.	Nos.	3					
28	3C x 16 Sqmm Flex Cu Cable	Meters	30					
29	1C x 6 Sqmm Flex Cu Cable	Meters	100					
30	3C x 6 Sqmm Flex Cu Cable	Meters	2000					
31	Distribution Board With Enclosure and Required Switchgear component 63A MCB input 32A DP MCB (4 nos) Including Industrial Connector at Both end in Output side.	Nos.	5					
32	JB with 16A Switch Socket	Nos.	5					
33	Termination component for Panel and Rack End	Lot.	1					
34	32MM PVC LMS Conduit with Accessories	Mtr.	2000					
G	Other material (Accepted Standard : ISI Standard Mark)							
35	25mm HDPE pipe	Meters	2200					
36	32mm Rainforce pipe	Meters	500					
37	100X50mm PVC trunking	Meters	1500					
38	25mm Conduits MMS class	Meters	15000					
39	32mm PVC flexible	Meters	500					
40	50mm PVC flexible	Meters	300					
[II]	<u>Service/Installation Components</u>							

41	Laying of Fiber Cable	Meters	2100					
42	Laying of 25mm HDPE Pipe with 32mm reinforce Pipe with accessories	Meters	2200					
43	Fixing of 12port / 24Port LIU	Nos	16					
44	Fiber Pigtaills Splicing	Nos	264					
45	Fiber to Fiber - Splicing	Nos	360					
46	Fiber Core OTDR Testing	Nos	264					
47	Laying of UTP Cable	Meters	45750					
48	Installation of 100mm x 50mm PVC Trunking	Meters	1500					
49	Laying of 25mm PVC Pipe and 32mm / 50mm Flexible Pipe with accessories	Meters	15000					
50	Feruling & Labelling	Nos	809					
51	Termination of Information Outlet / Connector	Nos	809					
52	Installation & Termination of 24 Port Patch Panel	Nos	38					
53	Installation & Configuration of Core Switch	Nos	2					
54	Installation & Configuration of Switch	Nos	28					
55	Installation & Configuration of Access Point	Nos	809					
56	UTP Scanner Testing Charges	Nos	809					
57	Installation of 15U Rack Dressing and Routing	Nos	9					
58	Installation of 24U Rack Dressing and Routing	Nos	3					
59	Installation of 17U Rack Dressing and Routing	Nos	1					
60	Soft/Hard Digging with backfilling	Meters	200					
61	RCC cutting with finishing	Meters	200					
62	Installation, Testing and Comissioing of all UPS system along with cable laying and all related to UPS.	LS	1					
63	Project Management charges including Vendor coordination, onsite presence and supervision, Project status monitoring and updates, local Lodging - boarding arrangement , Manpower Transportation cost to Site location, Safety , Legal Compliances , tools - tackles, Material Transportation	LS	1					

	Charges, Documentatation Charges ,Overhead charges etc.							
64	Onsite Support Charges including deputation of one onsite resource engineer (For 5 Years) for Facility Management, support and services, Network Management, OEM co-ordination, RMA, Ticket logging etc.	Year	5					
65	Removing of Existing Network Infrastructure	LS	1					

Note:

1. Quantity of Items may increase/decrease on the basis of the actual requirement. Quantities for the Supply and Implementation Components/Services are indicative and payment will be done on the basis of actual quantity used, surplus inventory if any will be returned (at no cost to GNLU).
2. All the Supply Components/Devices with 5 Years Warranty except batteries of UPS with 2 Years Warranty

6.5 Annexure – E

APPLICATION FORM

To,
The Registrar
Gujarat National Law University
Attalika Avenue, Knowledge Corridor,
Koba, Gandhinagar - 382421 (Gujarat), INDIA

Subject: Tender for Supply, Installation, Testing & Commissioning of Wi-Fi Network Infrastructure at Hostels, Training Residency, Guest House and Staff Quarters in the Gujarat National Law University, Gandhinagar.

Sir,

Please refer to your Tender Notice No. _____ published on 06/04/2024 for Tender For Supply, Installation, Testing & Commissioning of Wi-Fi Network Infrastructure at Hostels, Training Residency, Guest House and Staff Quarters in the Gujarat National Law University, Gandhinagar. We are hereby applying for the same as per the details specified below:

Bidder Details	
Company/Agency Name	
Office Location	
Address	
City	
State	
Pin Code	
Telephone	
E-Mail	
Fax Number	
Website	

**Signature of the Authorised Signatory
(With seal)**

Place:

Date:

Signature and Seal of the company

6.6 Annexure – F

DECLARATION

1. I, ----- Son /Daughter of Mr. -----
-- Proprietor/Partner/CEO/MD/Director/ Authorized Signatory of M/s. -----
----- am competent to sign this declaration and execute this tender document.
2. I have carefully read and understood all the terms and conditions of the tender 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.
4. I/we/am are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.
5. Each page of the tender document and papers submitted by my Company is authenticated, sealed and signed, and I take full responsibility for the entire documents submitted.

(Seal of the Bidder)

(Signature of bidder with seal)

Name.....

Seal.....

Address.....

Phone No.....

Fax No.....

E-mail.....

Place:

Date:

6.7 Annexure G

Check-List for Submission of Tender

Sr. No.	Document	Yes/No
1	Tender Processing Fee Demand Draft	
2	EMD Demand Draft	
3	Details of Bidder and Other Details (Annexure A)	
4	Financial Details- Audited Balance sheet of last three years (Annexure A, Form No. E1)	
5	Office in Gujarat (Ahmedabad/Gandhinagar) (Annexure A, Form No. E2)	
6	Engineers available with vendor to carry out installation and testing (Annexure A, Form No. E3)	
7	Experience implementation of Similar work and after sales, support, maintenance/management (Annexure A, Form No. E4)	
8	Manufacturer Authorization Letter (Annexure A, Form No. E5)	
9	Technical Specification (Annexure B)	
10	Product Technical Documentation (Annexure C)	
11	Financial Bid (Annexure-D)	
12	Enclose original tender document and other enclosures with seal & authorized signature on each page.	
13	Application Form (Annexure –E)	
14	Declaration (Annexure –F)	
15	Any other additional document	
