



# பெரியார் பல்கலைக்கழகம்

## PERIYAR UNIVERSITY

NAAC A Grade – State University NIRF Rank 73, ATAL Rank 4

Salem – 636 011, Tamil Nadu, India

GST No:33AAAJP0951B1ZP

### TENDER NOTICE

No. PU/R/R14/Wi-Fi/013495/2021

Date: 16-11-2021

Sealed tenders (Two cover system) will be received by the Registrar, Periyar University, Salem – 11 for “Establishing Wi-Fi connections for the newly constructed buildings(R14)” from reputed firms.

The detailed tender documents with specifications, terms and conditions etc., can be taken from the University website [www.periyaruniversity.ac.in](http://www.periyaruniversity.ac.in) The last date for receipt of the tender in this office on 01-12-2021 at 11.00 A.M.

|  |  |
|--|--|
| Tender Ref. Number                             | PU/R/R14/Wi-Fi/013495/2021   |
| Tender Document cost Rs.<br>(Downloadable one) | Rs.6,720/- (Demand draft drawn in any Nationalized bank in favour of the Registrar, Periyar University payable at Salem)<br>(Separate DD)          |
| Amount of EMD(Rs.)                             | 1% of the quoted value (Demand draft drawn in any nationalized bank in favour of the Registrar, Periyar University payable at Salem) (Separate DD) |
| Tender submission                              | Upto 11.00 A.M. on 01-12-2021  |
| Tender Outer cover opening                     | 02-12-2021 at 11.30 A.M.   |
| Bid opening(Technical)                         | Will be decided on the day of opening  |
| Bid opening(Commercial)                        | Will be decided on the day of opening  |

**REGISTRAR(FAC)**

To

The Co-ordinator(for Website) Dept. of Computer Science

**Phone: 0427-2345766, 2346269(Extn:317), Fax: 0427- 2345124**

Website:[www.periyaruniversity.ac.in](http://www.periyaruniversity.ac.in)



# பெரியார் பல்கலைக்கழகம்

PERIYAR UNIVERSITY

NAAC A Grade – State University NIRF Rank 73, ATAL Rank 4

Salem – 636 011, Tamil Nadu, India

GST No:33AAAJP0951B1ZP

From  
Registrar(FAC)  
Periyar University  
Salem – 636 011.

To  
M/s.

**No. PU/R/R14/Wi-Fi/013495/2021**

**NAME OF THE ITEM:- “Establishing Wi-Fi connections for the newly constructed buildings(R14)”**

\*\*\*\*\*

## **Tender Conditions**

1. Sealed tenders will be received from the Registrar upto **11.00 a.m. on 01-12-2021** for **“Establishing Wi-Fi connections for the newly constructed buildings(R14)”** as per the specifications given in the tender schedules.
2. The tender shall be submitted in sealed cover superscribed as **“Establishing Wi-Fi connections for the newly constructed buildings(R14)”** for use of Periyar University due on **01-12-2021** at 11.00 A.M.
3. If the last day fixed for the receipt of tender happens to be a holiday tenders will be received on the next working day upto 4.00 p.m.
4. Each tender shall accompany with an EMD of 1% of the quoted value. The EMD in the form of the Demand Draft drawn in favour of The Registrar, Periyar University, payable at Salem. Tenders without E.M.D. will be summarily rejected. E.M.D. will not carry any interest.
5. Tenders received late will be returned to the tenderer unopened.
6. Tender will be opened **02-12-2021** in the presence of the Committee nominated by the Vice-Chancellor after receiving the report from the Technical Committee about the suitability of firm and its infrastructure.
7. The entries in the tender schedules shall be as for as possible without scoring and corrections and over writings and shall be legible. The unavoidable correction or scoring shall be attested by full signature of the tenderer. The tenderer should sign on each page of the tender document.
8. In the tender schedule, the tenderer should quote his rate for each item separately in figures and words in the corresponding column,

9. If the rates quoted in the schedule differ in words and figures, the lowest quoted rate will be taken.
10. The Upward revision of rates will not be accepted. Rates quoted shall be firm.
11. The rates quoted shall be for delivery at University Campus inclusive of charges such as packing and forwarding. Discount if any should be indicated prominently. The tenderer is solely responsible till delivery in good condition.
12. **The tenderer should produce the materials as per the specifications given in the tender schedule. Tender documents are not transferable.**
13. Tender shall be submitted only in this official form and the tenderer should sign on each page of the tenderer enclosed without any omission. Tenders with price variation will not be accepted.
14. The tender shall be valid for a period of Six month from the date of opening. Tenderer should not withdraw his tender after the tenders are opened. In case the tender is withdrawn after opening, the E.M.D. will be forfeited.
15. The E.M.D. of the unsuccessful tenderers will be refunded on their request immediately after the disposal of tender by the competent authority.
16. **The successful tenderer shall also furnish security deposit at 2% of the value of the order. The Security Deposit will be refunded after one year from the date of supply of materials.**
17. In case of failure by the tenderer to supply items demanded within the period prescribed, the Registrar shall have the power to purchase from others in lieu of rejected or not delivered goods, the excess cost and expenses will be worked out and recovered from the tenderer.
18. **Successful tenderer should execute an agreement on stamp paper to the value of Rs.20/- within seven days from the date of receipt of intimation about acceptance of the tender. Failure to execute the agreement in the stipulated time will entail in forfeiture of the E.M.D.**
19. Any dispute arising out of this contract shall be settled only on the court having jurisdiction of Salem.
20. The authority competent to accept the tender reserves the right to reject the tender without assigning reasons therefore.

- 21.Regarding the acceptance of supply with reference to the specifications and quality of materials supplied, the decision of the Registrar shall be final. The rejected materials should be removed within 15 days at Tenderer's cost.
- 22.This University's General rules for the supply of the materials and works will apply on this purchase also.
- 23.The goods should be supplied within 10 days of the receipt of order.
- 24.If the tenderer fails in the due performance of his supply within the time fixed, the tenderer is liable to pay as liquidated damages upto 2% per month for the supply value of such portion of the materials as have not been delivered.
- 25.The tender schedule is not transferable and it should be used only by the tenderer to whom it is officially issued.
- 26.Percentage of payment to be withheld for the effective performance of the contract, provided that withheld amounts do not exceed ten percent of the total value of contract.
- 27.Complete address including Phone No., Fax No., E-mail address etc., may be furnished.
- 28.Canvassing in connection with tender/quotation is strictly prohibited.
- 29.The tenderer shall furnish the Income Tax clearance certificate and copy of PAN card along with the tender documents.
- 30.The tenderer shall enclose audited statement of the firm for the last three years.
- 31.Bank Statement of last three years issued by the respective bank shall be enclosed.
- 32.The tenderer shall attach the copy of TIN/ GST/Sales Tax Certificate
- 33.List of customers for the last three years shall be attached.
- 34.The tenderer shall submit the tender by "Two cover system".

"Two-cover system" means a procedure under which the tenderers are required to simultaneously submit two separate sealed covers, one containing the details of their capability to undertake the tender (Technical Specification) which will be opened first and the second cover containing the Earnest Money Deposit and the price quotation which will be opened only if the tenderer is found qualified to execute the tender on technical specifications.

This tender is submitted subject to and agreeing to the above conditions.

**Details of Tender Document cost (DD) Enclosed**

| S.No. | Details of Demand Draft No. & Date | Amount |
|-------|------------------------------------|--------|
|       |                                    |        |

**Details of the Firm**

| S.No. | Particulars      |  |
|-------|------------------|--|
| 1     | Name of the firm |  |
| 2.    | Full address     |  |
| 3.    | Phone/Mobile No. |  |
| 4.    | Email ID         |  |
| 5.    | GST No.          |  |

## TENDER SCHEDULE

### Establishing Wi-Fi connections for the newly constructed buildings

The quantities specified are approximate and are likely to be increased/reduced.

The rates should be inclusive of all taxes, if any tax should be shown separately in the bill if not tax will be deducted from the amount.

The Unit rates noted below are those governing payments.

The rates quoted are for delivery at the University Campus.

#### Details of EMD Enclosed

| S.No. | Details of EMD/Demand Draft No. & Date | Amount |
|-------|--|--------|
|       |  |        |

Tender Specification for establishing Wi-Fi connections (**Access point and POE switch should be from the same brand for compatibility and single dashboard configuration for both access point & POE Switch**) for the newly constructed buildings (**CIMF Block, Science Block III, Science Block II, Women's Hostel, Indoor Auditorium, Food Court, Women Studies Centre, Incubation Centre and Guest House**)

| Sl.No. | Description  | Qty    | Rate in | Amt in |
|--------|--|--------|---------|--------|
| 01     | Supply of Indoor Access Points Wi-Fi 6 (802.11ax) indoor wireless access point, selectable dual-band (5G+5G or 2.4G+5G), up to 4 total spatial streams and maximum 2.4Gbps wireless throughput, 1 10/100/1000BASE-T uplink port, as per detailed Hardware Specification and product features mentioned   | 32 Nos |         |        |
| 02     | Supply of Outdoor Access Points Wi-Fi 6 (802.11ax) outdoor wireless access point, dual-band dual-radio, up to 575Mbps@2.4G, 1200Mbps@5G and 1775Mbps per AP, 4 spatial streams ,built-in directional antenna, support 802.11a/b/g/n/ac and 802.11ax, FAT/FIT mode, 1 SFP port and 1 10/100/1000M port, as per detailed Hardware Specification and product features mentioned | 9 Nos  |         |        |
| 03     | Supply of Wireless Controller <b>Cloud Managed or on-premise hardware</b>  | 1 No   |         |        |
| 04     | Supply of web Managed 9-Port Gigabit Smart POE Switch, 9 Gigabit RJ45 Ports including 8 PoE/POE+ Ports,120W PoE power budget, Desktop Steel Case   | 14 Nos |         |        |

|  |  |                                   |  |  |
|--|--|-----------------------------------|--|--|
| (Access point and POE switch should be from the same brand for compatibility and single dashboard configuration) |  |                                   |  |  |
| 05   | Supply of ¾ inch ISI Conduit Pipe  | 1500 Running Mtr<br>Approximately |  |  |
| 06   | Supply of Cat 6 UTP Cable  | 1500 Running Mtr<br>Approximately |  |  |
| 07   | Fixing Charges for Indoor Access Point including charges for fixing pipes on surface of wall, Roof ,inside ceiling along with laying of UTP Cables to complete in all respect with all labour and material required to complete the job  | 32 Nos                            |  |  |
| 08   | Fixing Charges for Outdoor Access Point including charges for fixing pipes on surface of wall, Roof ,inside ceiling along with laying of UTP Cables to complete in all respect with all labour and material required to complete the job | 9 Nos                             |  |  |
| 09   | One time configuration and Wi-Fi fine tuning   | Lumpsum                           |  |  |
| Grand total  |  |                                   |  |  |
| Add:-GST   |  |                                   |  |  |
| Net total  |  |                                   |  |  |

## Specification Requirement for WIFI 6 Enterprise Indoor Access Point

### Hardware Specifications

- Support Wi-Fi 6 standard (IEEE 802.11ax), dual-radio dual-band, concurrent 802.11ax and 802.11a/b/g/n/ac
- Support total 4 spatial streams, 2x2:2 in 2.4GHz , 2x2:2 in 5GHz
- Support dual 5G radio mode operation for high-density environment
- Maximum throughput (5G+5G mode) per AP at 2.4Gbps
- Transmit power ≤20dBm
- Provide 1 10/100/1000Base-T Ethernet uplink port (PoE In) and 1 console port
- Support PoE (802.3af/802.3at), power consumption <12.95w, also support local power supply.
- Support Anti-theft Lock
- Support operating temperature: -10°C to 50°C, operating humidity: 5% to 95% (non-condensing)

### Product Features

- Support ≥32 BSSIDs per AP
- AP should support 512 active Concurrent clients
- Upon AC failure, the AP should switch to smart forwarding mode to maintain data transmission. The function ensures no service interruption for wireless users. Reserve the right to test.

- Support FAT/FIT modes switching. When operating in FIT mode, the AP can communicate with the AC via CAPWAP.
- Support IPv6 technologies including IPv6 traversal and IPv6 end device access authentication
- Support PSK, MAC, web, 802.1X authentication modes
- Support WPA (TKIP) , WPA-PSK, WPA2 (AES) , WPA3, WEP (64/128 bits) data encryption
- Should support LLDP, LLDP-MED, LLDP-POE device discovery protocol
- Support Telnet, SSH, TFTP, Web management protocol, Support SNMPV1,V2c,V3 network management protocol
- Working with a wireless controller, the Wi-Fi device hardware MAC Address should be binded automatically with unique encrypted per user password so that user password cannot be used in other devices
- Working with a wireless controller, support below related guest Wi-Fi access control feature without additional cost, including but not limited to guest captive portal, voucher (access code) with time bandwidth quota and upload and download bandwidth restriction, Facebook and User Account authentication feature, etc. ; The provided guest portal should be self-adaptive that fits any mainstream mobile smart device screen size for easy access.
- The AP should support WIDS (Wireless Intrusion Detection System) feature, including RF interference tracking, rogue AP detection & containment, anti-ARP spoofing ,etc.
- AP should be Wifi6, Wi-Fi Alliance (WFA) certified. Relevant certification needs to be attached

**Warranty**     The AP should have 3 years replacement hardware warranty

### **Specification Requirement for WIFI 6 Enterprise Outdoor Access Point**

#### **Hardware Specifications**

- Support Wi-Fi 6 standard (IEEE 802.11ax), dual-radio dual-band, concurrent 802.11ax and 802.11a/b/g/n/ac
- Support total 4 spatial streams, 2×2:2 in 2.4GHz , 2×2:2 in 5GHz
- Support dual 5G radio mode operation for high-density environment
- Maximum throughput (5G+5G mode) per AP at 2.4Gbps
- Integrated or external 9 dBi directional antenna
- **Provide 1 10/100/1000Base-T Ethernet uplink port (PoE In) ,1xSFP port and 1 console port**
- Support PoE (802.3af/802.3at), power consumption <12.95w, also support local power supply.
- IP rating: IP68
- Support operating temperature: -40°C to 65°C, operating humidity: 0% to 100% (non-condensing)
- Safety standard:GB4943, EN/IEC 60950-1, Radio standard: SRRC, EN300 328, EN301 893
- Adjustable pole mounting kits to be included

#### **Product Features**

- Support ≥32 BSSIDs per AP
- AP should support 512 active Concurrent clients
- Upon AC failure, the AP should switch to smart forwarding mode to maintain data transmission. The function ensures no service interruption for wireless users. Reserve the right to test.



- Support FAT/FIT modes switching. When operating in FIT mode, the AP can communicate with the AC via CAPWAP.
- Support IPv6 technologies including IPv6 traversal and IPv6 end device access authentication
- Support PSK, MAC, web, 802.1X authentication modes
- Support WPA (TKIP) , WPA-PSK, WPA2 (AES) , WPA3, WEP (64/128 bits) data encryption
- Should support LLDP, LLDP-MED, LLDP-POE device discovery protocol
- Support Telnet, SSH, TFTP, Web management protocol, Support SNMPV1,V2c,V3 network management protocol
- Working with a wireless controller, the Wi-Fi device hardware MAC Address should be binded automatically with unique encrypted per user password so that user password cannot be used in other devices
- Working with a wireless controller, support below related guest Wi-Fi access control feature without additional cost, including but not limited to guest captive portal, voucher (access code) with time bandwidth quota and upload and download bandwidth restriction, Facebook and User Account authentication feature, etc. ; The provided guest portal should be self-adaptive that fits any mainstream mobile smart device screen size for easy access.
- The AP should support WIDS (Wireless Intrusion Detection System) feature, including RF interference tracking, rogue AP detection & containment, anti-ARP spoofing ,etc.
- AP should be Wifi6, Wi-Fi Alliance (WFA) certified. Relevant certification needs to be attached

**Warranty**      The AP should have 3 years replacement hardware warranty

## **Specification Requirements for Wireless Controller**

### **Product features**

- **The controller should support Minimum 300 AP's from day 1. Controller can be cloud managed or on-premise hardware**
- The controller should support multi-site management with each site assigned customized admins
- The controller should auto-detect the AP's and all policy configurations should be seamlessly pushed
- The controller should have the feature to batch firmware upgrade
- Controller should have all configuration and operation logs stored
- Controller should support Auto and manual channel planning including quick and deep scan
- Controller should support Wireless Intrusion detection and support DDOS,flooding,AP spoof prevention attack detection,
- Controller should support isolating clients in the same AP and same SSID
- Option should be there for building layout and marking the AP's in the floor plan
- Controller should have reports of traffic summary, client history, device status for upto 1 month
- Controller should support Guest management in a separate zone with IP released for guests from controller and should be isolated
- Guest management should support customized captive portal with option for Voucher, Account password, Facebook authentication and SMS
- Controller should be able to bind the pre-shared key (PSK) with MAC ID of wireless clients to stop sharing of passwords
- Controller should support below remote device operation & maintenance (including access point, switches, gateway) features, including but not limited to: email alarm,

dynamic Web Secure Tunnel to remote device, Web CLI (command-line), remote device reboot, schedule RRM planning and optimization, etc.

- Controller should support upcoming new technology AP's and regular updates should be provided by vendor

#### **Warranty**

- Controller should come with 3 years warranty, required licenses to be included, If it is Cloud Controller required licenses to be included for at least 3 years and cloud to be hosted in reputed platform like AWS,Azure,GCP

#### **Specification Requirements for Web Managed POE switch**

##### **Product Features**

- Support 8 10/100/1000 Base-T ports (PoE/PoE+)+ 1 10/100/1000 Base-T uplink port
- Switching Capacity: Min 18Gbps
- Packet forwarding rate: Min 13 Mbps
- POE standard: should support IEEE 802.3at / 802.af with 120 Watts POE budget
- Switch should support port based VLAN,Flowcontrol, Loop detection
- Switch should support Broadcast, multicast storm suppression
- Switch should support Mirroring, port isolation
- Should support in-built troubleshooting tools like cable testing,Ping,DNS lookup, remote reboot
- Switch management should be supported by web, Cloud and mobile APP for easyness
- Access point and POE switch should be from the same brand for compatibility and single dashboard configuration

**Warranty**      Switch should have 3 years replacement hardware warranty

**Signature with seal**