



INVITATION LETTER

Package Code: TEQIP-III/UP/biej/128

Current Date: 23-May-2019

Package Name: P- Upgradation of Campus Wi-Fi Network

Method: Shopping Goods

Sub: INVITATION LETTER FOR Upgradation of Campus Wi-Fi Network

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	Upgradation of Campus Wi-Fi Networking	1	BIET Jhansi	As per instruction of concern Incharge.

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

3. **Quotation**

- 3.1 The contract shall be for the full quantity as described above.
 - 3.2 Corrections, if any, shall be made by crossing out, initialling, dating and re writing.
 - 3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit Price.
 - 3.4 Applicable taxes shall be quoted separately for all items.
 - 3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
 - 3.6 The Prices should be quoted in Indian Rupees only.
4. Each bidder shall submit only one quotation.
 5. Quotation shall remain valid for a period not less than **60**days after the last date of quotation submission.
 6. Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which
 - 6.1 are properly signed; and
 - 6.2 Confirm to the terms and conditions, and specifications.
 7. The Quotations would be evaluated for all items together.
 8. Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
 - 8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract.
 - 8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of

the accepted offer shall be Incorporated in the purchase order.

9. Payment shall be made in Indian Rupees as follows:
Satisfactory Delivery & Installation - 90% of total cost
Satisfactory Performance for a month after installation - 10% of total cost
10. Liquidated Damages will be applied as per the below:
Liquidated Damages Per Day Min % : N/A
Liquidated Damages Max % : N/A
11. All supplied items are under warranty of **60** months from the date of successful acceptance of items and AMC/Others is .
12. You are requested to provide your offer latest by **15:00** hours on **13-Jun-2019**.
13. Detailed specifications of the items are at Annexure I.
14. Training Clause (if any) **Yes**
15. Testing/Installation Clause (if any) **Training & Testing as per requirement.**
16. Performance Security shall be applicable: **5%**
17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
18. Sealed quotation to be submitted/ delivered at the address mentioned below,
Bundelkhand Institute of Engineering & Tech., Jhansi, 284128
19. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

(Prof. Mukesh Shukla)
Nodal Officer Procurement
TEQIP-III, BIET, Jhansi

Schedule of Requirement

Sl. No.	Item Description	Qty.	Unit
1	WLAN Controller for HA mode with the existing controller as per specifications	1	Nos
2	Controller based Indoor 802.11ac Access Point PoE enabled as per specifications given.	25	Nos
3	Controller based outdoor Access Point PoE enabled with two omni antennas as per specifications given.	15	Nos
4	Managed Layer2 PoE Switch 24 port as per specifications	13	Nos
5	Managed Layer2 PoE Switch 8 port as per specifications	6	Nos
6	SM mode LX transceivers	5	Nos
7	12 core SM OFC	1500	Mtrs Approx.
8	12 Port LIU loaded with coupler and SM pigtails	1	Nos
9	24 Port LIU loaded with coupler and SM pigtails	4	No.
10	SM Fiber patch cord SC to LC 3mtr Length	5	Nos
11	UTP CAT6 cable (Box of 305 meters)	21	Nos Approx.
12	UTP CAT 6 Information Outlet with Surface Mount Box with Shutter	284	Nos
13	UTP CAT6 Patch cord (1 Meter)	284	Nos
14	UTP CAT6 Patch cord (2 Meter)	240	Nos
15	9U Rack with PDU and Accessories	7	Nos
16	24 port jack panel UTP cat 6	9	Nos
17	Iron Security case with Lock for AP	40	Nos
18	Supply of 1" PVC Pipes/ Conduits including required gully, screw	1500	Mtrs Approx.
19	Supply of GI/Iron poles-6 mtrs	15	Nos
20	Supply of HDPE as per specification	1400	Mtrs Approx.
21	Digging and resurfacing of hard/soft soil	1300	Mtrs Approx.
22	Laying of OFC along with HDPE through digging/on wall etc	1400	Mtrs Approx.
23	Laying of CAT-6 Cable in PVC Pipes/ Conduits (per meter)	6000	Mtrs Approx.
24	Fixing of LIU	5	Nos.
25	I/O Fixing & Termination	284	Nos
26	Laying of PVC Pipes/ Conduits	1500	Mtrs Approx.
27	GI/POLE Fixing for outdoor APS	15	Nos
28	Rack Fixing	7	Nos
29	WLAN Controller configuration for HA mode with the existing controller	1	No
30	Installation and configuration of Aps	40	Nos
31	Installation and configuration of switches	19	Nos
32	Documentation and Configuration entire network	1	Job

Annexure I

Specifications for Upgradation of Campus Wi-Fi Networking		
S. No.	Description of goods	Compliance (Yes/No)
1	Controller based Indoor 802.11ac Access Point PoE enabled	
	Fully comply IEEE802.11a/b/g/n/ac standard, support working in both 2.4G and 5G meanwhile and should be capable of integrating with existing WLAN controller of Huawei AC 6005 or bidders can propose different make Aps with controller for the given specifications.	
	Supports 2x 2 MIMO and provides a maximum rate of 1.16 Gbps per AP	
	Support concurrent user number per AP more than 256	
	Supports access control lists (ACLs) and implements user access control based on the user group policy	
	Interface:1 x 10/100/1000M self-adaptive Ethernet interface (RJ45, PoE) 1 x Management console port (RJ45)	
	Support both local power supply and PoE power supply	
	Support built-in antennas or external antennas.	
	Maximum transmit power for each radio no less than 20dBm and adjust the transmit power with a step of 1 dB	
	Support total of SSIDs	
	Support SSID hiding	
	Support (Beamforming)	
	Support STBC,LDPC,MLD,MRC and other technology to enhance signal strength	
	Support 802.11h(DFS) and automatically avoid radar channel	
	Support packet-based power adjustment to reduce power consumption and interference by adjusting AP transmit power to client	
	Operating temperature :-10~50°C	
	Operating humidity :5%~95% (non-condensing)	
	Rating IP41	
	Support service holding function when CAPWAP link down, new users can also access the network	
	Support authentication based on MAC, Portal,802.1X,PSK,and fixed mode with MAC + Portal	
	Support WEP(WEP64/WEP128),WPA/WPA2,TKIP,CCMP,WAPI	
	Support security of Local Forwarding. AP supports DHCP Snooping, DAI (Dynamic ARP Inspection) , IPSG (IP Source Guard) bogus DHCP server attack defense in local forwarding mode	
	Supports wireless intrusion detection system (WIDS), including rogue AP and STA detection, attack detection, STA/AP blacklist and white list.	
	Support load balancing based on user number and data traffic	
	Support 5G preference access in which users access network by 5G radio	
	Support radio link closed when CAPWAP break down	
	Provide WIFI alliance certification,OEM of the proposed solution should be listed in Leaders/Challenger Quadrant of Gartner's latest report for DC Networking. All switches must be from the Same OEM	
2	Managed Layer2 PoE Switch 24 port	
	The switch shall have 24 RJ-45 auto-negotiating 10/100/1000 PoE ports	
	The switch shall have 4 1000 BASE-X SFP port in addition to above	
	The equipment shall support IEEE 802.3af and 802.3at	
	The equipment must support mini USB	

	Shall support 1000/10000 Base-SX, LX, and LX Bi- directional SFP transceivers	
	The proposed equipment shall support high switching capacity of at least 128 gbps non-blocking.	
	Switching through put of up to 41 million pps	
	The equipment must support more than 16K MAC address tables	
	The equipment must support up to 4K active VLAN	
	The equipment must support voice VLAN or equivalent	
	The equipment must support Jumbo Frames at least 10K bytes	
	The equipment must support SEP(Smart Ethernet Protection)or any equivalent ring protocol which can support less than 50ms failover time	
	The equipment must support IGMP snooping v1/v2/v3	
	The equipment must support MLD snooping v1/v2	
	The equipment must support bidirectional ACL	
	The equipment must support automatic isolation of attack sources	
	The equipment must support the DAI (Dynamic ARP Inspection) feature	
	The equipment must support DHCP Snooping feature	
	Indicate if the equipment supports the IP Source Guard feature	
	The equipment must support SNMPv1/v2c/v3, Telnet, RMON, SSHv2	
	The equipment must support web management	
	It should support the operating temperature up to 0-45°C and can be operated in 10% - 90 % RH	
	Switch should be EAL 3 Certified	
	Additional certificate : UL,FCC ,OEM of the proposed solution should be listed in Leaders/Challenger Quadrant of Gartner's latest report for DC Networking.	
3	Managed Layer2 PoE Switch 8 port	
	The switch shall have 8 RJ-45 auto-negotiating 10/100/1000 PoE ports	
	The switch shall have 2 1000 BASE-X SFP port in addition to above	
	The equipment shall support IEEE 802.3af and 802.3at	
	The equipment must support mini USB	
	Shall support 1000/10000 Base-SX, LX, and LX Bi- directional SFP transceivers	
	The proposed equipment shall support high switching capacity of at least 20 gbps non-blocking.	
	Switching through put of up to 15 million pps	
	The equipment must support more than 8K MAC address tables	
	The equipment must support up to 4K active VLAN	
	The equipment must support voice VLAN or equivalent	
	The equipment must support Jumbo Frames at least 10K bytes	
	The equipment must support SEP(Smart Ethernet Protection)or any equivalent ring protocol which can support less than 50ms failover time	
	The equipment must support IGMP snooping v1/v2/v3	
	The equipment must support MLD snooping v1/v2	
	The equipment must support bidirectional ACL	
	The equipment must support automatic isolation of attack sources	
	The equipment must support the DAI (Dynamic ARP Inspection) feature	
	The equipment must support DHCP Snooping feature	
	Indicate if the equipment supports the IP Source Guard feature	
	The equipment must support SNMPv1/v2c/v3, Telnet, RMON, SSHv2	
	The equipment must support web management	
	It should support the operating temperature up to 0-45°C and can be operated in 10% - 90 % RH	
	Switch should be EAL 3 Certified	

	Additional certificate : UL,FCC ,OEM of the proposed solution should be listed in Leaders/Challenger Quadrant of Gartner's latest report for DC Networking.	
4	WLAN Controller Architecture	
	The proposed controller must be able to integrated in HA mode with the existing Controller of Hauwei 6005. In case Bidder/OEMs wants to propose other make, then they must propose two controllers in HA mode along with 75 APs(existing-indoor) in addition to current requirement as per specifications given in the tender. Total 115 APs license support required including existing and new. OEM of the proposed solution should be listed in Leaders/Challenger Quadrant of Gartner's latest report for DC Networking.	
	The wireless controller shall have six Gigabit ports onboard supporting RJ-45 Copper plus 2XGE Combo, Must have PoE support. One RJ45 serial maintenance interface One Mini USB serial maintenance interface	
	Shall be offered with minimum 250 managed along with IEEE 802.11a/b/g/n/ac/ac wave 2 Access Points	
	Shall support 1+1 HSB or N+1 backup	
	The controller shall have internal redundant power supplies and shall be loaded from Day 1	
	Must provides a 20 Gbit/s switching capacity and a 4 Gbit/s forwarding capability.	
	The Controller shall be 19" Rack Mountable	
	Controller can manage up to 2048 users, allowing 100 users on an AP to transmit data simultaneously.	
	The controller can be deployed in inline, bypass, bridge, and Mesh network modes, and supports both centralized and local forwarding. The controller and APs can be connected across a Layer 2 or Layer 3 network. In addition, NAT can be deployed when APs are deployed on the private network and the controller is deployed on the public network. It should be compatible 802.11n and 802.11ac APs and supports hybrid networking of 802.11n and 802.11ac APs for simple scalability.	
	The controller must supports automatic selection and calibration of radio parameters in AP regions, including these features: <ul style="list-style-type: none"> • Automatic signal level adjustment and channel selection on power-up • Automatic signal re-calibration in the event of signal interference – Partial calibration: Adjusts a specific AP to optimal signal levels. Global calibration: Adjusts all APs in a specified region for optimal signal levels. • When an AP is removed or goes offline, it can capable to increases the power of neighboring APs to compensate for reduced signal strength. 	
	Number of managed APs 256, Number of SSIDs 16K, Number of APs controlled by each license 1, 8, 32, Number of access users Entire device: 2K User group management. Must supports 128 user groups: <ul style="list-style-type: none"> • Each user group can reference a maximum of 8 ACLs. • Each user group can associate with a maximum of 128 ACL rules. Number of MAC addresses 4K Number of VLANs 4K Number of ARP entries 4K Number of routing entries 8K Number of multicast forwarding entries 2K	
5	Controller Based Out door Access Point Specifications	
	Working in FAT/FIT mode, should be capable of integrating with existing WLAN controller of Huawei AC 6005 or bidders can propose different make Aps with controller for the given specifications. OEM of the proposed solution should be listed in Leaders/Challenger Quadrant of Gartner's latest report for DC Networking. All switches must be from the Same OEM	
	Zero-configuration online in Fit AP mode and all configured by AC, Interface type 2 x 10/100/1000M self-adaptive Ethernet interface (RJ45) 1 x Management console port (RJ45) 1 x SFP fiber interface	
	Support P2P/P2MP bridge (WDS) , Mesh zero-configuration	
	Must be of latest-generation 802.11ac wave 2 outdoor access points (APs) that support 2 x 2 MU-MIMO and two spatial streams and offer high flexibility with IEEE 802.11a/b/g/n/ac compliance. Capable of offering services simultaneously on 2.4 GHz and 5 GHz radios to connect more users, support wireless bridging, built-in Bluetooth (BLE4.1), and provide gigabit access for wireless users	

	Support maximum no. of users <=512,Maximum number of SSIDs for each radio:16	
	Supports access control lists (ACLs) and implements user access	
	Compliance with IEEE 802.11a/b/g/n/ac/ac Wave 2 maximum rate of 1.73 Gbit/s	
	Maximum transmit power 2.4G:26dBm (combined power) 5G:24dBm (combined power), PoE power supply: in compliance with IEEE 802.3at	
	Support external antennas both in 2.4G and 5G	
	Shall Provide inbuilt 5kA surge protection capability	
	Support SSID hiding, 802.11k and 802.11v smart roaming 802.11r fast roaming (≤ 50 ms)	
	Support (Beamforming), IP68 & 802.11 dynamic frequency selection (DFS)	
	Support STBC,LDPC,MLD,MRC and other technology to enhance signal strength	
	Support packet-based power adjustment to reduce power consumption and interference by adjusting AP transmit power to client	
	Identifies interference sources such as blue tooth devices, microwave ovens, cordless phones, ZigBees, game controllers, 2.4 GHz/5 GHz wireless video and audio devices, and baby monitors in Fit AP mode and works with NMS to locate interference sources and display spectrums	
	Better temperature range expected , Operating temperature :-40~65 or more (Please mention value)	
	Operating humidity :0%~100% (non-condensing)	
	Support service holding function when CAPWAP link down, new users can also access network.	
	Support authentication based on MAC,,Portal,802.1X,PSK,and fixed mode with MAC + Portal	
	Support WEP(WEP64/WEP128),WPA/WPA2,TKIP,CCMP,WAPI	
	Supports wireless intrusion detection system (WIDS), including rogue AP and STA detection, attack detection, STA/AP blacklist and white list.	
	Support load balancing based on user number and data traffic	
	Support unscheduled automatic power save delivery (U-APSD)	
	Support radio link closed when CAPWAP break down	
	Support to open and close RF automatically by setting the schedule	
	Provide WIFI alliance certification	
6	UTP CAT6 cable(Box of 305 meters) - The 4 pair Unshielded Twisted Pair cable shall be ETL Verified to ANSI/TIA-568-C.2 or BICSI Category 6. OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified	
7	UTP CAT 6 Information Outlet with Surface Mount Box with Shutter - Information outlet (RJ45 jack) should be covered under EIA/TIA standards or BICSI for the performance characteristic.OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified	
8	UTP CAT6 Patch cord - Category 6 Equipment cords (Length – 1 Mtr. And Length – 2 Mtr.)-EIA/TIA standards or BICSI for the performance characteristic. OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified.	
9	UTP CAT6 PATCH PANEL-19" - RJ-45 Patch Panel with 24 ports on 1 U,Strain relief and cable management, Universal wiring - T568 A or B wiring pattern.	
10	12 Core SM Outdoor Armored Fiber Optic Cables - Loose tube,EIA/TIA standards or BICSI for the performance characteristic. OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified.	
11	1U 19" Rack Mountable Fiber Patch panel loaded 12 Port,EIA/TIA standards or BICSI for the performance characteristic. OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified.	

12	1U 19" Rack Mountable Fiber Patch panel loaded 24 Port,EIA/TIA standards or BICSI for the performance characteristic. OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified.	
13	SM Pigtail- LC type,EIA/TIA standards or BICSI for the performance characteristic. OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified.	
14	Fiber Optic Patch Cords SM-3 Meters Duplex LSZH, EIA/TIA standards or BICSI for the performance characteristic. OEM must be An ISO 9001:2015 & ISO 14001:2015 Company certified.	
15	9U Rack with front Glass door along with PDU and Accessories	
16	Fabricated Iron Security case with Lock and key for AP	
17	GI/Pole 1.5 inches-6mtr in length	
18	HDPE Pipe 1 inche	
19	Supply of 1" PVC Pipes/ Conduits including required gully, screw and other Accessories - ISI Marked	

Note All actives should be of same make, all passives should be of same make except racks, pvc, HDPE, GI, Iron case etc

Warranty 5 years

Price quoted must be inclusive of all taxes and duties. Nothing will be paid extra.

All actives should be of same make.

All passives should be of same make.

OEM authorization to be submitted with the bid both for actives, firewall and passives or else it will be rejected.

Bidder must be ISO certified with annual turn over of min 3 crores. Documents to be submitted.

Bidder must have min 3 installation for the quoted make in the last 3 years. Documents to be submitted.

Bidder must submit copy of PAN, Service Tax, ESI and PF certificate.

FORMAT FOR QUOTATION SUBMISSION
(In letterhead of the supplier with seal)

Date: _____

To: _____

Sl. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (Amount in figures) (Rupees _____ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of _____ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: _____

Address: _____

Contact No. _____