

# **PEC University of Technology, Chandigarh**



## **E-TENDER DOCUMENT**

### **FOR**

## **Turnkey Project of Campus Wireless Network**

at

**PEC, University of Technology, Chandigarh**

**Cost of Tender:** Rs. 1000/- (Payable through DD in favor of Director, to be submitted at time of participation in pre-bid meeting).

## Description

Section	Terms and condition of contract
I	Invitation for E-Tender for Turnkey Project of Wireless Network at PEC University of Technology, Chandigarh
II	Tender document (Technical Bid)
III	Technical Specification and details
IV	Schedule of requirements (Technical Bid)
V	Price Schedule (Financial Bid)
VI	General Terms and Conditions
VII	Contract form (Agreement) and other forms

## SECTION-I

### Invitation for E-Tender

For the work of Turnkey Project of Wireless Network.

1. Director, PEC University of Technology, Chandigarh invites e-bids from eligible bidders for the work of Provision of Wireless Network in PEC.
2. Interested eligible Bidders may obtain further information from Computer Centre, PEC University of Technology, Sector 12, Chandigarh 160012, India.
3. The bidding document is downloadable from institute website <http://www.pec.ac.in>.
4. All bids must be accompanied by a bid security as specified in the <https://etenders.chd.nic.in> and must be delivered to the office address mentioned below by the date and time indicated below.
5. Bids will be opened in the presence of Bidders' or their representatives who authorized to attend on the specified date and time.

**TABLE – 1 EMD (Earnest Money Deposit)**

<b>S No.</b>	<b>Name of the Work</b>	<b>EMD Security</b>	<b>Performance/Security</b>
1.	Turnkey Project of Wireless Network	5,00,000/- (Payable through DD in favor of Director)	10% of the Tender value of the items

**NOTE:**

1. Financial bids and Earnest Money Deposit (EMD) is to be submitted for the work.

**TABLE - 2 Time Schedule**

I	Date of publication	26/08/2015
II	Pre-Bid Meeting Date	07/09/2015 at 10:00 AM
III	Submission of revised Tender (if any) after pre-bid	14/09/2015
IV	Downloading of e-tender document	07/09/2015 to 28/09/2015
V	Last date of submission of e-tender	28/09/2015
VI	Physical submission of EMD and other necessary pre-qualification documents (scanned copies)	End date: 28/09/2015
VII	Opening of Technical Bid (online) and meeting for scrutiny of technical bid and declaring eligible bidders.	Date: 29/09/2015 at 11.30 a.m.
VII	Opening of Financial Bid of only eligible technically qualified bidder as determined by the Committee.	To be informed after checking eligibility of Bidders
	Place of opening of bids	Computer Centre PEC University of Technology, Sector 12, Chandigarh 160012

**Important Notes:**

I.	Bidders shall have to submit their bids on-line in Electronic Format with Digital Signatures.
II.	All terms and conditions, instructions to bidder regarding e-tendering process etc. may kindly be seen from the Detailed Notice Inviting Tender (DNIT) available on the PEC University of Technology institute website ( <a href="http://www.pec.ac.in">www.pec.ac.in</a> ).
III.	The bidder has to submit the original documents in physical form such as EMD, eligibility documents and other desired documents on the date fixed for the same as above. The failure will entail summarily rejection of its tender.
IV.	The Director reserves the rights to reject or accept any or all tenders without assigning any reasons.

### CHECKLIST FOR TENDER DOCUMENT

S. No.	Checklist Tick	(Yes/No)
1.	Whether name of the firm/organization & address and telephone/mobile number/fax number on letter pad of the company/firm have been mentioned	Yes/No
2.	Whether EMD as mentioned in Table-1 of Section I in the shape of Demand draft/ Banker Cheque in favour of Director, PEC University of Technology, payable at Chandigarh has been attached? If yes, DD/B.C No. _____ dated _____ and _____ name of the Bank )	Yes/No
3.	Whether Income tax return (Self attested) of the last two assessment years attached?	Yes/No
4.	Whether Document showing experience of providing similar items in reputed institutes/Departments/College/ research labs etc. in INDIA in last three years and providing satisfactory performance certificate from such institutes/Departments/College/ research labs etc. is attached (Annexure 2.3 of SECTION II).	Yes/No
5.	Whether Document showing current details of similar equipment's being rendered which will be available for inspection by our officials.(Annexure 2.4 of SECTION II)	Yes/No
6.	Do you agree to provide 90days validity of tender as per point 4 of Section-VI?	Yes/No
7.	Whether attested photocopy of PAN/TAN Card is attached?	Yes/No
8.	Whether name, address, contact number, designation/capacity of person signing tender document is attached?	Yes/No
9.	Do you comply the specification and details given in SECTION IV	Yes/No
10.	Whether attested photocopy of Registration Certificate attached?	Yes/No
11.	Whether Affidavit of not being Black Listed has been attached? (Annexure 2.2 of SECTION II)	Yes/No
12.	Covering letter (Annexure 2.1 of SECTION II) is attached	Yes/No
13.	Do you agree to provide handling over of commissioned and functional wi-fi campus in 90 days from the date of supply order?	Yes/No
14.	Do you agree that no advance payment will be made by the PEC University of Technology in view of condition No. 7 of SECTION-VI?	Yes/No
15.	Do you agree to provide the items F.O.R. PEC University of Technology, Sector-12, Chandigarh?	Yes/No

Place: \_\_\_\_\_ Signature of Tenderer\_\_\_\_\_

Dated: \_\_\_\_\_ Full Name of the Tenderer \_\_\_\_\_

Address: \_\_\_\_\_

## SECTION II

### Terms and Conditions of Contract

1. Tenderers are advised to study all technical and commercial aspects, instructions, forms, terms and specifications carefully in the tender document. Failure to furnish all information required in the Tender document or submission of a bid not substantially responsive to the Tender document in every respect will be at the tenderers risk and may result in the *rejection* of the bid.
2. The tenderers should give their quote in Indian currency only keeping in mind that our institute (i.e. PEC University of Technology) is exempted from the payment of custom and excise duty. If foreign make equipment is quoted in Indian currency, no sales tax will be payable. Only custom duty exemption certificate will be issued.
3. The Bidders shall have to submit their Bids online in Electronic Format with Digital Signatures. For participation in the e-tendering process, the Bidders need to register themselves on <http://etenders.chd.nic.in>. On registration, they will be provided with a user ID and a system generated password enabling them to submit their Bids online using Digital System Certificates (DSC).
4. Tenders without digital signatures will not be accepted by the Electronic Tendering System. No Tender will be accepted in physical form and in case, it has been submitted in the physical form only, it shall be rejected out rightly.
5. Bids will be opened online as per time schedule mentioned in e-tender notice (**SECTION I Table 2**).
6. Before submission of online Bids, Bidders must ensure that self-attested scanned copies of all the necessary documents as mentioned in **SECTION III “Technical Bid”** and **SECTION V “Financial Bid”** of this tender document have been uploaded with the Bid, failing which their bids may be out-rightly rejected and will not be considered.
7. The Director, PEC, University of Technology Chandigarh will not be responsible for any delay in online submission of the Bids due to any reason whatsoever.
8. It will be mandatory for all the Bidders to upload all the documents mentioned under Tender document.
9. Bidder are required to upload scanned copy of EMD as specified in the tender documents and send original along with other hard copies of desired documents to be sent in technical bid envelope.
10. The details of EMD specified in the Tender Documents should be the same as submitted online (scanned copies) otherwise tender will be rejected.

11. The conditional bids shall not be considered and may be rejected outright in very first instance.
12. The Financial Bids through e-tendering of only those bidders shall be opened who will qualify in the pre-qualifying criteria.
13. An affidavit as per specimen enclosed as **Annexure – 2.2 of SECTION II** should accompany the tender. The tenderer who has been black-listed or his/her tenders have even been cancelled or any legal proceedings have ever been initiated/pending or any penalty has ever been levied on account of delay or non-completion of supply order by any State/UT/Central Government, his/her tender will be outright rejected.
14. **EARNEST MONEY DEPOSIT (EMD):** The Tender should be accompanied with Earnest Money as mentioned in the **Table-1 of SECTION- I** to be paid in the shape of Demand Draft from any Scheduled Bank in favour of the Director, PEC University of Technology, Chandigarh which shall be valid for three months. No firm/ tenderer will be exempted from submission of EMD. The EMD deposited by the tenderer in respect of another similar tender will not be considered against this tender. Apart from submission of original EMD in physical form, scanned copy of EMD duly attested and countersigned by the firms shall also be uploaded. The EMD of unsuccessful bidders will be refunded immediately after finalization/allotment of tender. No interest will be payable on the EMD. The EMD will be forfeited, if the tenderer withdraws his/her bid after submission of the Tender. Expression of Interest without the EMD shall not be considered. If EMD is not submitted / received as detailed above, tender will be rejected.
15. Separate financial bids and EMD is to be submitted for Equipment as per Table-1.
16. **TECHNICAL BID:** The tenderer should submit scanned copy of documentary proof of his/her eligibility as mentioned in SECTION III **“Technical Bid”** of this tender document.
17. **FINANCIAL BID:** The Financial Bid (**SECTION V**) shall be quoted by the bidder through e-tendering. The Financial Bid should contain rates taxes if applicable. The rates should be mentioned both in figures as well as in words. Any change in rate quoted by the tenderer afterwards will entail forfeiture of Earnest Money Deposit, cancellation of tender and blacklisting of the firm.
18. The award of work order, when issued to the successful bidder, constitutes the contract with collateral support from terms and conditions of the tender invitation notices as well as formal agreement on non-judicial stamp paper, all of which finally form contractual obligations to be adhered to /performed by the bidder and the non-performance of any of such obligations make the bidder liable for consequential effects i.e. EMD and Performance security forfeiting, blacklisting etc.



19. The bid should not contain corrections or over writing.
20. The Successful bidder shall have to execute an agreement as per the timelines fixed by PEC, with the Director, PEC University of Technology, on a non-judicial stamp paper of Rs.100/- (Rupees One Hundred only) and provide the equipment(s) as per the specification of tender document and in case they fail to do so, the PEC shall be at liberty to forfeit the performance security deposit and/or EMD, and get the Equipment Provider black-listed.
21. Performance Security Deposit: The successful tenderer will have to deposit performance security 10% of the total value of tender item awarded (**Table -1 of SECTION - I**) within 15 days of issuance of letter of intent by the competent authority to be paid in the shape of Bank guaranty, Demand Draft from any Scheduled Bank in favor of the Director, PEC University of Technology, Chandigarh and the security deposited in connection with any other similar tender will not be considered against this tender. Thereafter, the supply order will be issued. If successful tenderer fails to submit the requisite performance security deposit within prescribed 15 days, Earnest Money Deposit (EMD) deposited by the tenderer will be forfeited and PEC University of Technology shall be at liberty to declare the equipment(s) provider black listed.
22. Tender received through e-tendering shall be opened online by the Committee duly constituted by the authorities of PEC University of Technology, as per schedule given in Tender Notice in the Computer Centre, PEC University of Technology, Chandigarh. In the event of date of opening of Tender being declared a holiday, the due date of opening of the Tender will be the next working day at the same hours.
23. Tender is nontransferable.
24. The bidder shall submit the hard copy of e-tender along with forwarding letter (**Annexure- 2.1 of SECTION - II**) duly signed by the authorized signatory.

#### **PRE-QUALIFYING CRITERIA**

1. Name of the firm/organization & address and telephone/ Mob. No. / Fax. No. on letter pad of the company/firm.
2. Document showing experience of providing similar equipment(s) to reputed Institutes/Departments/Colleges/ research labs etc. in last three years and satisfactory performance certificate from such Institutions/Departments/College/ etc (Annexure 2.3SECTION II).
3. Details of previous equipment(s (Last three years) installed by you and will be available for inspection by our officials. (Annexure 2.4 SECTION II)
4. Self-attested copies of PAN/TAN Card.

5. Name, address, contact number, designation/capacity of person signing tender document.
6. Registration Certificate of the company issued by the competent authority.
7. The bidder should also submit a detailed un-priced Bill of Material in tabular format with complete product part codes, product description, quantity, etc. This detailed un-priced BOQ should be attached/ enclosed with the technical compliance mentioned above both in hard copy as well as soft copy.
8. The tenderer / manufactures must have minimum turnover of Rs. 5.0 Crore(annually) during last three financial years(FY 11-12, FY 12-13, FY 13-14).Financial statement showing annual turnover and net profit duly certified by Chartered Accountants for the last three financial years should be attached.
9. The tenderer should have their own after sales support facilities at least in one place in Tricity (Chandigarh/ Mohali/ Panchkula). The support facilities should be fully owned by the tenderer and managed by their permanent employees (company payroll) and not through franchisee(s). (Documentary proof of the same should be attached).
10. The System Integrator must have successful executed orders in any combination of the below mentioned amounts during last three financial years i.e. 2012, 2013, 2014 for similar (Wireless LAN) projects. Successful installation and project completion from the client should be enclosed).

**One order of minimum 1.5 Crore.**

**or**

**Two orders of Rs. 75 Lacs each**

11. The make offered by System Integrator should at least have 3 successful deployments of minimum 100 nos. Access Points (AP) per site controller based wireless network installation and commissioning anywhere in India (at least one deployment in Government Organization/PSU/Autonomous Body/University of repute/Hospitality/ Higher Education Institute of repute) during last 3 years. (Certificate for successful installation and project completion from the client should be enclosed).

**NOTE:** All the above mentioned documents should be duly in order and are essential to qualify.

## ANNEXTURE – 2.1

(Covering letter to be furnished by the Tenderer)

From

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To

Director  
PEC University of Technology,  
Sector-12, Chandigarh

Subject: Submission of Tender for the work of Provision of Wireless Networking PEC University of Technology, Chandigarh.

Dear Sir,

With reference to your above-mentioned notice inviting e-tender, I/We hereby offer to provide Wireless Network in PEC University of Technology, Chandigarh.

I/We shall supply the equipments truly and faithfully as set forth in the terms and conditions of the tender document. I/We shall be responsible for all complaints as regards to the quality of product and in case of any dispute; your decision shall be final and binding on me/us.

A Demand Draft No. \_\_\_\_\_ Dated \_\_\_\_\_ drawn on \_\_\_\_\_ intended for the prescribed amount of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) in favor of Director, PEC University of Technology, Chandigarh, payable at Chandigarh is enclosed as earnest money as desired.

I/WE shall have no claim to the refund of earnest money prescribed against this tender in the event of my/our non-compliance of the contract, provided such contract is implemented within the period of validity of my/our tender.

I/We further understand that my/our earnest money shall stand forfeited in case of unsatisfactory supply of equipments/service/violation of any term, or if I/We withdraw my/our tender at any stage during the period of validity. My/Our tender shall remain valid for a period of **90 days** from the last date prescribed for submission of the tender against the above-mentioned notice. My/Our tender along with terms and conditions with relevant columns and annexure duly filled in under my/our attestation and with each page of the tender paper including the enclosed terms and conditions signed by me/us (in the capacity of sole owner/general or special attorney attached) is submitted for your favorable consideration.

I/We have read the terms and conditions carefully and have signed the same in token of our absolute and unqualified acceptance. My/Our tender constitutes a firm offer under the Indian Contract Act, 1872 and is open to an acceptance in whole/my/our offer, if accepted on the attached terms and conditions will constitute a legal binding of Contract Act 1872.

Thanking you,

Yours faithfully,

Place

Signatures

Date with stamp

& Full Address

## ANNEXURE - 2.2

(To be furnished on non-judicial stamp paper duly attested by the 1st Class Magistrate)

### AFFIDAVIT

I/We/M/s \_\_\_\_\_ are registered Company/Ltd Company etc. as per Registration Certificate No. \_\_\_\_\_ issued by \_\_\_\_\_ having registered office at \_\_\_\_\_ and manufacturing/supply base at \_\_\_\_\_ do hereby declare and solemnly affirm that I/We have not been **Black-listed**, nor mine/our Tenders have ever been cancelled by any State/UT/Central Government or any partner or shareholder either directly or indirectly connected with or has any subsisting interest in the business of my/our firm nor any legal proceedings have ever been initiated/pending or any penalty has ever been levied due to delay of non-completion of work/service/supply order by any State/UT/Central Government or by any authority.

Place: \_\_\_\_\_

DEPONENT

Dated: \_\_\_\_\_

#### Verification

I/We do hereby solemnly declare and affirm that the above declarations are true and correct to the best of my knowledge and beliefs. No part of it is false and nothing has been concealed therein.

Place: \_\_\_\_\_

DEPONENT

Dated: \_\_\_\_\_

### ANNEXURE - 2.3

#### Details of previous similar equipments installed in India

(Attach self-attested photocopies of the work order and original certificate of satisfactory performance):

S No.	Type of Equipment	Date of Installation	Name and Address of the Organization with reference letters	Value of the Equipment (In Rs.)	Name of the contact person & Mobile No
1					
2					
3					
4					

Place:

SIGNATURE OF THE TENDERER

Date:

with stamp

#### **ANNEXURE - 2.4**

Details of previous similar equipment(s) (Last three years) installed in India by you and which will be available for inspection by our officials (Attach self-attested photocopies of the work order and original certificate of satisfactory performance):

S No.	Type of Equipment	Date of Installation	Name and Address of the Organization with reference letters	Value of the Equipment (In Rs.)	Name of the contact person & Mobile No.	Remarks
1						
2						
3						
4						

Place:

SIGNATURE OF THE TENDERER

Date:

with stamp

## **SECTION III**

### **TECHNICAL BID**

#### **SCHEDULE OF REQUIREMENT**

**Table -3 Schedule of requirement for campus wireless network**

S/NO	Description	UOM	Qty
<b>Active Component</b>			
1	Wireless LAN Controller 300 AP License (Configured in high availability)	Nos.	2
2	Indoor Wireless Access Point	Nos.	198
3	24 Port PoE Switch	Nos.	15
<b>Passive Component</b>			
1	UTP Cat 6 Cable	Box	38
2	STP Cat 6 Cable	Box	2
3	Cat 6 I/O ( Wifi end )	Nos	198
4	Cat 6 I/O ( Rack end )	Nos	198
5	1 Port Face Plate 3x3	Nos	198
6	Gang Box 3X3 for face plate	Nos	198
7	24 Port Jack Panel unloaded	Nos	31
8	Cat 6 Patch Cord 3 Feet ( Wifi end )	Nos	198
9	Cat 6 Patch Cord 7 Feet ( Rack end )	Nos	198
10	15 U Rack & 6 Socket PDU	Nos	13
11	6 Core Single Mode Fiber Cable	Mtrs	150
12	24 Fiber LC-Style, Single Mode Loaded LIU (Including pigtails)	Nos	2
13	12 Fiber LC-Style, Single Mode Loaded LIU (including pigtails)	Nos	28
14	LC-LC Single Mode Duplex Patch Cord, 3 Meter	Nos	35
15	SC-LC Single Mode Duplex Patch Cord, 3 Meter	Nos	15
16	25mm PVC Pipe with Accessories	Mtrs	4000
17	40mm HDPE Pipe with Accessories	Mtrs	150
18	25mm PVC Reinforced Flexible	Mtrs	255
<b>Services</b>			
1	Cat 6 Cable Laying	Mtrs	12200
2	Identification and Ferruling of Cables	Nos	198
3	Installation of Face Plate	Nos	198
4	Termination of Cable in Information Outlet	Nos	198
5	Termination of 24 Port Jack Panel	Nos	31
6	Fixing of Jackpanel /Cable Managers	Nos	31
7	Installation and Dressing of Patch Cords	Nos	198
8	Labelling of I/O	Nos	198
9	Labelling of Jack Panels with labels	Nos	31
10	Labelling of Patch Cords	Nos	198
11	25mm PVC Pipe & Casing Capping Fixing Charges	Mtrs	4255
12	40mm HDPE Pipe Laying Charges	Mtrs	150
13	Fiber Cable Laying	Mtrs	150
14	Fiber Cable Splicing	Nos	204
15	Soft Soil Digging and Refilling	Mtrs	70
16	Hard Soil Digging and Refilling	Mtrs	30
17	Testing of Cables as per Standards with Power Meter	Nos	198
18	Certification & Documentation Charges	Nos	198
19	Project Implementation Charges	Lumpsom	1
20	Any other item required to complete the project	Lumpsom	1



21	Installation and commissioning of Wireless Controller	Nos	2
22	Installation and commissioning of 24 Port PoE Switch	Nos	15
23	Installation and commissioning of Indoor Wireless Access Point	Nos	198
All Passive component and Services quantity is approximate only. Payment for the same will be done as per actual only.			
<b>Location wise Access Point Requirement</b>			
<b>S. No.</b>	<b>Location</b>	<b>No. of Access Point</b>	<b>PoE Switch 24 Port</b>
1	Vindya Hostel	10	1
2	Kalpana Chawla Hostel	8	1
3	Shivalik Hostel	17	1
4	Kurukshetra Hostel	19	1
5	Himalya Hostel	19	1
6	Aravali Hostel	20	1
7	Computers/Electronics Department.	12	2
8	Aerospace Dept./Old IT Block	6	
9	Computer Centre	4	
10	Library	6	1
11	Rotodynamics Block	4	
12	Applied Science (Including Civil/Mechanical/Electrical Dept.)	12	1
13	Production Department	8	1
14	Material & Metallurgical Department	5	1
15	PG Environment Engineering Block	3	
16	Structure Block	4	1
17	Admin Block	13	1
18	Guest House	2	
19	Neelgiri Apartments	6	1
20	DSW/TPO Office	3	
21	Auditorium (First Floor/Second Floor)	9	
22	Student Canteen	3	
23	Wireless Design lab (Lecture Hall)	3	
24	PG Irrigation block	2	
	<b>Total</b>	198	15

Offer will be accepted/uploaded in two covers under details containing:

FIRST COVER TITLED as “**Technical Bid**” should contain the Self-attested scanned copies of the documents.

## TECHNICAL SPECIFICATIONS AND DETAILS

### Wireless LAN Controller 300AP License with high availability

S.N	Required Minimum Specification	Compliance (Y/N)
<b>A</b>	<b>Hardware and Standards:</b>	
1	Must be compliant with IEEE CAPWAP for controller-based WLANs.	
2	WLAN Controller should be supplied with 300AP Lic. and upgradable up to 500 Access points in a single 1 RU chassis.	
3	WLAN controller must have atleast 4 x 1Gbps of uplink interfaces.	
<b>B</b>	<b>Compatibility</b>	
1	Must not require a separate controller for Wireless Intrusion Prevention Access Points.	
<b>C</b>	<b>High Availability:</b>	
1	Must support both 1+1 and N+1 redundancy models.	
2	Must have feature for stateful recovery without re-authentication of the client in the event of LAN and WLAN infrastructure disruption to deliver a non-stop client session	
3	Must support redundant power supplies.	
<b>D</b>	<b>RF Management:</b>	
1	Must support an ability to dynamically adjust channel and power settings based on the RF environment.	
2	Radio coverage algorithm must allow adjacent APs to operate on different channels, in order to maximize available bandwidth and avoid interference	
3	Must have Automatic 802.11 interference detection, identification, classification, and mitigation. Classification should support a dynamically updatable signature library	
4	Must support coverage hole detection and correction that can be adjusted on a per WLAN basis.	
5	Must support RF Management with 40 MHz channels with 802.11n.	
<b>E</b>	<b>IPv6 features</b>	
1	WLC should support L2 and L3 roaming of IPv6 clients	
2	WLC should support First hop security features in IPv6 network like Router Advertisement guard, DHCPv6 guard and IPv6 source guard	
3	WLC should support IPv6 access control lists	
4	WLC should support Guest-access functionality for IPv6 clients	
<b>F</b>	<b>Performance:</b>	
1	Controller performance must remain the same if encryption is on or off for wireless SSIDs.	
2	Should support ability to adjust Delivery Traffic Indicator Message (DTIM) on a per WLAN basis to improve performance for latency sensitive applications.	
<b>G</b>	<b>Security:</b>	

1	Should adhere to the strictest level of security standards, including 802.11i Wi-Fi Protected Access 2 (WPA2), WPA, Wired Equivalent Privacy (WEP), 802.1X with multiple Extensible Authentication Protocol (EAP) types, including Protected EAP (PEAP), EAP with Transport Layer Security (EAP-TLS), EAP with Tunneled TLS (EAP-TTLS), RFC 4347	
2	Should support Management frame protection for the authentication of 802.11 management frames by the wireless network infrastructure.	
3	The Controller should support a capability to shun / block WLAN client in collaboration with wired IPS on detecting malicious client traffic.	
4	Controller should have rogue AP detection, classification and automatic containment feature	
5	Controller should be able to detect attacks like Broadcast de-authentication, NULL probe, Wellenreiter from day one for all access points	
6	Controller should have profiling of devices based on protocols like HTTP, DHCP and more to identify the end devices on the network	
7	It should be possible to locate a particular client in the campus based on its real time location using Wireless Management software.	
<b>H</b>	<b>Guest Wireless</b>	
1	Must support internal and external web authentication.	
<b>I</b>	<b>Functionality</b>	
1	Must be able to set a maximum per-user bandwidth limit on a per-SSID basis.	
2	Must support user load balancing across Access Points.	
3	Controller must provide Mesh capability for Mesh supported AP.	
<b>J</b>	<b>Monitoring</b>	
1	Must be able to dedicate some APs to monitor-only for Intrusion Prevention Services.	
<b>K</b>	<b>Roaming:</b>	
1	Must support client roaming across controllers separated by a layer 3 routed boundary.	
2	Solution proposed must support clients roaming across at least 500 APs.	
<b>L</b>	<b>Operational:</b>	
1	Must support AP over-the-air packet capture for export to a tool such as Wireshark.	
2	Should support the ability to schedule AP power on/off for energy savings.	
3	Should be able to classify over 20 different types of interference within 30 seconds.	

4	Should provide a snapshot of air quality in terms of the performance and impact of interference on the wireless network identifying the problem areas.	
5	Should provide an Air Quality rating on a per- radio basis to help gauge the impact of interference on the network	
6	Should provide real-time charts showing interferers per access point, on a per-radio, per-channel basis.	
7	Should support encrypted mechanism to securely upload/download software images to and from wireless controllers	
<b>M</b>	<b>QOS:</b>	
1	Must support 802.11e WMM	
2	Should have Voice and Video Call Admission and Stream prioritization for preferential QOS	
3	Controller should have Deep Packet Inspection for Layer 4-7 traffic for user for all traffic across the network to analyses information about applications usage and prioritization	
4	Controller should be able to prioritize(QOS) and rate limit to as low as 100kbps for traffic like http, torrent, FTP, skype, Youtube	

### Indoor Access Point

Sl. No	Required Minimum Specification		Compliance (Y/N)
1	<b>Hardware:</b>	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac Wave 1.	
2		Must have a robust design for durability, without visible vents	
3		Mounting kit should be standard from OEM directly.	
4		Must have atleast 512 MB DRAM and 64 MB flash	
5		Must have atleast 4 dBi gain on both radios	
6		Must support 3x4 multiple-input multiple-output (MIMO) with three spatial streams	
7		Must support simultaneous 802.11n on both the 2.4 GHz and 5 GHz radios.	
8		Must support 802.11ac Wave 1 on the integrated 5-GHz radio	
9		Must support data rates upto 450Mbps and 1.3Gbps on 802.11ac.	
10		Must support upto 23dbm of transmit power in both 2.4Ghz and 5Ghz radios.	

11	<b>RF</b>	The Wireless AP should have the technology to improve downlink performance to all mobile devices including one-, two-, and three spatial stream devices on 802.11n and 802.11ac. The technology should work without requiring feedback from clients and should work with all existing 802.11 clients.	
12		Should support detecting and classifying non-Wi-Fi wireless transmissions while simultaneously serving network traffic	
13		Should support configuring the access point as network connected sensor to access any network location covered by the access point to get real-time Spectrum analysis data.	
14		Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.	
15		Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization	
16		Should support spectrum analysis and security scanning using a dedicated hardware separate from the radio serving the clients with 80MHz channel support	
17		Should be able to detect atleast 20 sources of non 802.11 interference within 30 seconds	
18		Must have -100 dB or better Receiver Sensitivity.	
19	<b>Roaming</b>	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.	
20	<b>Security</b>	Must support Management Frame Protection.	
21		Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI).	
22		Must operate as a sensor for wireless IPS	
23		Should support non-Wi-Fi detection for off-channel rogues and Containment for both radio	
24	<b>Encryption</b>	Access Points must support a distributed encryption/decryption model.	
25		Access Points must support Hardware-based DTLS encryption on CAPWAP Standard	
26	<b>Monitoring</b>	Must support the ability to serve clients and monitor the RF environment concurrently.	
27		Same model AP that serves clients must be able to be dedicated to monitoring the	

		RF environment.	
28	<b>Flexibility:</b>	AP model proposed must be able to be both a client-serving AP and a monitor-only AP for Intrusion Prevention services.	
29		Should support mesh capabilities for temporary connectivity in areas with no Ethernet cabling.	
30		Mesh support should support QoS for voice over wireless.	
31		Must be plenum-rated (UL2043).	
32		Must support 16 WLANs per AP for SSID deployment flexibility.	
33		Must continue serving clients when WAN link to controller is back up again, should not reboot before joining	
34		Must support Controller-based and standalone(autonomous) deployments	
35		Should support Local authentication at the AP level in case of WAN outage	
36	<b>Operational:</b>	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.	
37	<b>Power:</b>	Must support Power over Ethernet, local power(DC Power) and power injectors.	
38		Must operate at 3x3 or higher with 802.3af PoE is the source of power	
39	<b>Quality of Service:</b>	802.11e and WMM	
40		Must support Reliable Multicast Video to maintain video quality	
41		Must support QoS and Video Call Admission Control capabilities.	

## 24 Port POE Switch

Sl. No	Required Minimum Specification		Compliance (Y/N)
1	<b>General Features</b>	The switch should support a minimum of 24 nos. 10/100/1000 Ethernet Ports	
2		The switch should support a minimum of 4 SFP Uplinks	
3		The switch should support 4x1G SFP modules	
4		The switch should support a total of 28 Ports	
5	<b>Performance and Scalability</b>	The switch should support Forwarding bandwidth of 108 Gbps	
6		The switch should support Full-duplex Switching bandwidth of 216 Gbps	

7		The switch should support 64-Byte Packet Forwarding Rate of 71.4 Mbps	
8		The switch should support 128 MB of Flash memory	
9		The switch should support 512 MB of DRAM	
10		The switch should support 1023 VLANs	
11		The switch should support 4096 VLAN IDs	
12		The switch should support Jumbo frames of 9216 bytes	
13		The switch should support Maximum transmission unit (MTU) of 9198 bytes	
14		The switch should support 16000 Unicast MAC addresses	
15	<b>Dimension</b>	The Switch should be 1RU	
16		The switch should support Operating temperature up to 5000 ft (1500 m) -5° to 45°C	
17		The switch should support Operating relative humidity 10% to 95% noncondensing	
18	<b>Stacking</b>	The switch should support Stacking	
19		Stacking should enable all switches to function as a single unit	
20		The switch should support an optional Stacking Port	
21		Stacking module should be Hot-swappable	
22		Stacking should support a minimum of 2 or more Switches	
23		Stacking should support a maximum of 8 Switches	
24		Stacking should support 80 Gbps of throughput	
25		Stacking should support single IP address management for the group of switches	
26		Stacking should support single configuration	
27		Stacking should support simplified switch upgrade	
28		Stacking should support automatic upgrade when the master switch receives a new software version	
29		Stacking should support stacking cable length of 3m	
30		Stacking should support QoS to be configured across the entire stack	
31	<b>PoE&amp;PoE+</b>	The switch should support PoE (IEEE 802.3af)	
32		The switch should support PoE+ (IEEE 802.3at)	

33		The switch should support flexible power allocation across all ports	
34		The switch should have 370W of Available PoE Power	
35		The switch should support Per port power consumption to specify maximum power setting on an individual port	
36		The switch should support Per port PoE power sensing to measure actual power being drawn	
37		The switch should support protocol to allow switch to negotiate a more granular power setting of IEEE classified devices	
38		The switch should support a PoE MIB to get visibility into power usage	
39		The switch should support a PoE MIB to set different power-level thresholds	
40	<b>Power Supply</b>	The switch should support an auto-ranging power supply with input voltages between 100 and 240V AC	
41		The switch should support an External Redundant Power Supply	
42	<b>Standards</b>	The switch should support IEEE 802.1D Spanning Tree Protocol	
43		The switch should support IEEE 802.1p	
44		The switch should support IEEE 802.1Q Trunking	
45		The switch should support IEEE 802.1s Multiple Spanning Tree (MSTP)	
46		The switch should support IEEE 802.1w Rapid Spanning Tree (RSTP)	
47		The switch should support IEEE 802.1x	
48		The switch should support IEEE 802.1ab (LLDP)	
49		The switch should support IEEE 802.3ad Link Aggregation Control Protocol (LACP)	
50		The switch should support RMON I and II standards	
51		The switch should support SNMP v1, v2c, and v3	
52	<b>Layer-2 Features</b>	The switch should support Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors	
53		The switch should support IEEE 802.1Q VLAN encapsulation	
54		The switch should support Centralized VLAN Management. VLANs created on the Core Switches should be	



		propagated automatically	
55		The switch should support Spanning-tree PortFast and PortFast guard for fast convergence	
56		The switch should support Uplink Fast & Backbone Fast technologies to help ensure quick failover recovery, enhancing overall network stability and reliability	
57		The switch should support Spanning-tree root guard to prevent other edge switches becoming the root bridge.	
58		The switch should support IGMP filtering	
59		The switch should support discovery of the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.	
60		The switch should support Per-port broadcast storm control to prevent faulty end stations from degrading overall systems performance	
61		The switch should support Per-port multicast storm control to prevent faulty end stations from degrading overall systems performance	
62		The switch should support Per-port unicast storm control to prevent faulty end stations from degrading overall systems performance	
63		The switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN	
64		The switch should support Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD to allow for unidirectional links caused by incorrect fiber-optic wiring or port faults to be detected and disabled on fiber-optic interfaces.	
65		The switch should support Local Proxy Address Resolution Protocol (ARP) working in conjunction with Private VLAN Edge to minimize broadcasts and maximize available bandwidth.	
66		The switch should support IGMP v1, v2 & v3 Snooping	
67		The switch should support IGMP Snooping Timer	

68		The switch should support IGMP Throttling	
69		The switch should support IGMP Querier	
70		The switch should support Configurable IGMP Leave Timer	
71		The switch should support MVR (Multicast VLAN Registration)	
72	<b>L3 Features</b>	The switch should support Inter-VLAN routing	
73		The switch should support IPv4 unicast Static Routing	
74		The switch should support 16 IPv4 Static routes	
75	<b>Smart Operations</b>	The switch should support configuration of the Software image and switch configuration without user intervention	
76		The switch should support automatic configuration as devices connect to the switch port	
77		The switch should support diagnostic commands to debug issues	
78		The switch should support system health checks within the switch	
79		The switch should support Online Diagnostics	
80	<b>Quality of Service (QoS) &amp; Control</b>	The switch should support 4 egress queues per port to enable differentiated management	
81		The switch should support scheduling techniques for Qos	
82		The switch should support Weighted tail drop (WTD) to provide congestion avoidance	
83		The switch should support Standard 802.1p CoS field classification	
84		The switch should support Differentiated services code point (DSCP) field classification	
85		The switch should support Control- and Data-plane QoS ACLs	
86		The switch should support Strict priority queuing mechanisms	
87		The switch should support Rate Limiting function to guarantee bandwidth	
88		The switch should support rate limiting based on source and destination IP address	
89		The switch should support rate limiting based on source and destination MAC address	

90		The switch should support rate limiting based on Layer 4 TCP and UDP information	
91		The switch should support availability of up to 256 aggregate or individual polices per port.	
92	<b>Management</b>	The switch should support Command Line Interface (CLI) support for configuration & troubleshooting purposes.	
93		The switch should support four RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis	
94		The switch should support Layer 2 trace route to ease troubleshooting by identifying the physical path that a packet takes from source to destination.	
95		The switch should support Trivial File Transfer Protocol (TFTP) to reduce the cost of administering software upgrades by downloading from a centralized location.	
96		The switch should support SNMP v1, v2c, and v3 of-band management.	
97		The switch should support Telnet interface support for comprehensive in-band management of-band management.	
98		The switch should support CLI-based management console to provide detailed out-of-band management.	
99		The switch should support Serial Console Port	
100		The switch should support USB Console Port	
101		The switch should support SNMPv1, SNMPv2c, and SNMPv3	
102	<b>Network Security Features</b>	The switch should support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.	
103		The switch should support Port-based ACLs for Layer 2 interfaces to allow application of security policies on individual switch ports.	
104		The switch should support SSHv2 and SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.	
105		The switch should support TACACS+ and RADIUS authentication enable centralized control of the switch and restrict unauthorized users from	

		altering the configuration.	
106		The switch should support MAC address notification to allow administrators to be notified of users added to or removed from the network.	
107		The switch should support Port security to secure the access to an access or trunk port based on MAC address.	
108		The switch should support Multilevel security on console access to prevent unauthorized users from altering the switch configuration.	
109		The switch should support Private VLAN	
110	<b>IPv6 Features</b>	The switch should be on the approved list of IPv6 Ready Logo phase II - Host	
111		The switch should support IPv6 unicast Static Routing	
112		The switch should support 16 IPv6 Static routes	
113		The switch should support IPv6 MLDv1 & v2 Snooping	
114		The switch should support IPv6 Host support for IPv6 Addressing	
115		The switch should support IPv6 Host support for IPv6 Option processing	
116		The switch should support IPv6 Host support for IPv6 Fragmentation	
117		The switch should support IPv6 Host support for IPv6 ICMPv6	
118		The switch should support IPv6 Host support for IPv6 TCP/UDP over IPv6	
119		The switch should support IPv6 Host support for IPv6 Ping	
120		The switch should support IPv6 Host support for IPv6 Trace route	
121		The switch should support IPv6 Host support for IPv6 VTY	
122		The switch should support IPv6 Host support for IPv6 SSH	
123		The switch should support IPv6 Host support for IPv6 TFTP,	
124		The switch should support IPv6 Host support for IPv6 SNMP for IPv6 objects	
125		The switch should support IPv6 Port Access Control Lists	
126		The switch should support IPv6 Router Access Control Lists	
127		The switch should support HTTP,	

		HTTP(s) over IPv6	
128		The switch should support SNMP over IPv6	
129		The switch should support SysLog over IPv6	
130		The switch should support IPv6 Stateless Auto Config	
131		The switch should support DHCP based Auto Config (Auto Install) and Image download	
132		The switch should support IPv6 QoS	
133		The switch should support RFC4292/RFC4293 MIBs for IPv6 traffic	
134		The switch should support SCP/SSH over IPv6	
135		The switch should support Radius over IPv6	
136		The switch should support TACACS+ over IPv6	
137		The switch should support NTPv4 over IPv6	
138		The switch should support IPv6 First-Hop Security	
139		The switch should support IPv6 First Hop Security: RA Guard	
140		The switch should support IPv6 First Hop Security: DHCPv6 Guard	

#### UTP Cat 6 Cable

S. No.	Technical Specification	Compliance (Y/N)
1	Category 6 Unshielded Twisted Pair 100W cable shall be compliant with EIA/TIA 568-C.2 Should be 4 pair, 23 AWG Cable should be CM rated Jacket: FRPVC Conductor: Solid Copper	

#### STP Cat 6 Cable

S. No.	Technical Specification	Compliance (Y/N)
1	Category 6 shielded Twisted Pair 100W cable shall be compliant with EIA/TIA 568-C.2 Should be 4 pair, 23 AWG Cable should be CM rated Jacket: FRPVC Conductor: Solid Copper	

**Face plate and gang box for wifi end**

S. No.	Technical Specification	Compliance (Y/N)
1	Single Gang square shuttered faceplate, 3X3 Plug in Icons – Icon tree – to be supplied with plate Write on labels in transparent plastic window – supplied with plate	

**Cat 6 I/O for wifi and rack end**

S. No.	Technical Specification	Compliance (Y/N)
1	Category 6, EIA/TIA 568-C.2 Use insulation displacement connectors having bend limiting mechanism All information outlets should be compatible with 22-24 AWG copper The Jack should support at least 750 mating cycles Should have Plastic Housing: Polycarbonate, UL94V-0 rated or equivalent Contact Plating: 50 μinches gold over 100 μinches nickel Operating Life: Minimum 200 Re-terminations	

**24 Port Jack Panel**

S. No.	Technical Specification	Compliance (Y/N)
1	Should be made of cold rolled steel Should conform to TIA / EIA 568-C.2 Component Compliant Should terminate 24 UTP CAT 6 (4 pair) Cables Ports should be with individual dust cover shuttered spring loaded Should confirm to EIA/TIA 568A wiring Pattern Should have labeling strips for identification. Should have integral cable management shelf. Should be IEC-603-7 Compliant Should be ISO 11801 Class E Compliant	

**Cat 6 Patch Cord( 3 Feet and 7 Feet)**

S. No.	Technical Specification	Compliance (Y/N)
1	Should be 4 Pairs 24 AWG copper cable. The Outer Jacket should be Low Smoke Zero Halogen/FRPVC 24 AWG stranded bare copper Should minimum comply with proposed ANSI/TIA/EIA-568-C.2 Should Have cross separator	

**15 U Rack & 6 Socket PDU**

S. No.	Technical Specification	Compliance (Y/N)
1	15 U wall mount rack, Front glass door with lock & key	
2	Accessories – Cooling Fan, Power strip (6 x 5A), Cable manger 1u 19" Cantilever Shelf 1U 19" mtg, CKD type completely knock down condition	

**12 & 6 Core Single Mode Fiber Cable**

S. No.	Technical Specification	Compliance (Y/N)
1	Should be ISO.IEC 11801 - 2nd Edition, type OS2; IEC 794-1; Tube Identification : Single tube/multi tube Fiber protection(Tube) : Polybutylene Terephthalate (PBT) Water Blocking :Thixotropic Gel (Tube) and Petroleum Jelly (Interstices) Core Wrapping : Polyethylene Terephthalate Armoring : Corrugated Steel Tape Armor (ECCS Tape) Peripheral Strength Member: Two Steel wires Sheath : UV Stabilized Polyethylene (HDPE) Max. Tensile Strength-Short Term : 2500N-3000N+5% Max. Crush Resistance-Short Term : 3000N/10 cm + 5%	

**24 and 12 port Fiber LC-Style, Single Mode Loaded LIU including pigtails**

S. No.	Technical Specification	Compliance (Y/N)
1	Connector Type- LC-Style, Simplex Operating temperature -40 Degree C to +85 Degree C MM connectors-500 cycles, Beige Ferrules- Pre-radiused Ceramic Ferrules Attenuation- Not more than 0.75 dB per mated pair FMS- Front Patching- a. 1U · 19” / ETSI versions available b. The FMS fiber management shelf series is ideal for high density front patching applications, c. Its compact design and high density capacity allows it to deliver carrier class fiber management to central offices, POPs, FTTx, mobile systems and LANs. d. High Density e. Mounting brackets can be placed in different positions.	

#### SC-LC Single Mode Duplex Patch Cord, 3 Meter

S. No.	Technical Specification	Compliance (Y/N)
1	All optical fiber patch leads shall comprise of Single mode 9/125µm fiber SC -LC , Jacket should be LSZH sheath Connector: Zirconia ceramic ferrule Cable: 9/125, SM Strength member: aramid yarn 900µm tight buffer diameter	

#### LC-LC Single Mode Duplex Patch Cord, 3 Meter

S. No.	Technical Specification	Compliance (Y/N)
1	All optical fiber patch leads shall comprise of Single mode 9/125µm fiber LC -LC Jacket should be LSZH sheath Connector: Zirconia ceramic ferrule Cable: 9/125, SM Strength member: aramid yarn 900µm tight buffer diameter	

#### 25mm PVC Pipe with Accessories

S. No.	Technical Specification	Compliance (Y/N)
1	25mm PVC pipe with accessories	



**40mm HDPE Pipe with Accessories**

<b>S. No.</b>	<b>Technical Specification</b>	<b>Compliance (Y/N)</b>
1	SIZE : 40/33 MM Should be as per TEC Spec. No. GR/CDS-08/02 Nov. 2004 Should be permanently Lubricated (PLB) Colors Orange Yellow Blue	

**25mm PVC Reinforced Flexible**

<b>S. No.</b>	<b>Technical Specification</b>	<b>Compliance (Y/N)</b>
1	25mm PVC Reinforced Flexible	

# PEC UNIVERSITY OF TECHNOLOGY, CHANDIGARH

## SECTION V

### FINANCIAL BID

#### For Turnkey Project of Wireless Network

SECOND COVER TITLED AS “**FINANCIAL BID**” CONSIST OF

Financial (Price) Bid for Turnkey Project of Wireless Network to be installed by the bidder in the PEC University of Technology, Sector 12, Chandigarh is as follows:

Tender Inviting Authority: Director, PEC University of Technology, Chandigarh 160012

Nature of Work: Turnkey Project of Wireless Network

Contract No: PEC/

Bidder Name:

Schedule of requirement for campus wireless network					
S/NO	Description	UOM	Qty	Unit Price in Rs.	Total in Rs.
<b>Active Component</b>					
1	Wireless LAN Controller 300 AP License (Configured in high availability)	Nos.	2		
2	Indoor Wireless Access Point	Nos.	198		
3	24 Port PoE Switch	Nos.	15		
<b>Passive Component</b>					
1	UTP Cat 6 Cable	Box	38		
2	STP Cat 6 Cable	Box	2		
3	Cat 6 I/O ( Wifi end )	Nos	198		
4	Cat 6 I/O ( Rack end )	Nos	198		
5	1 Port Face Plate 3x3	Nos	198		
6	Gang Box 3X3 for face plate	Nos	198		
7	24 Port Jack Panel unloaded	Nos	31		
8	Cat 6 Patch Cord 3 Feet ( Wifi end )	Nos	198		
9	Cat 6 Patch Cord 7 Feet ( Rack end )	Nos	198		
10	15 U Rack & 6 Socket PDU	Nos	13		
11	6 Core Single Mode Fiber Cable	Mtrs	150		
12	24 Fiber LC-Style, Single Mode Loaded LIU (Including pigtails)	Nos	2		
13	12 Fiber LC-Style, Single Mode Loaded LIU (including pigtails)	Nos	28		
14	LC-LC Single Mode Duplex Patch Cord, 3 Meter	Nos	35		
15	SC-LC Single Mode Duplex Patch Cord, 3 Meter	Nos	15		
16	25mm PVC Pipe with Accessories	Mtrs	4000		
17	40mm HDPE Pipe with Accessories	Mtrs	150		
18	25mm PVC Reinforced Flexible	Mtrs	255		
<b>Services</b>					
1	Cat 6 Cable Laying	Mtrs	12200		
2	Identification and Ferruling of Cables	Nos	198		
3	Installation of Face Plate	Nos	198		
4	Termination of Cable in Information Outlet	Nos	198		
5	Termination of 24 Port Jack Panel	Nos	31		
6	Fixing of Jackpanel /Cable Managers	Nos	31		
7	Installation and Dressing of Patch Cords	Nos	198		
8	Labelling of I/O	Nos	198		
9	Labelling of Jack Panels with labels	Nos	31		
10	Labelling of Patch Cords	Nos	198		
11	25mm PVC Pipe & Casing Capping Fixing Charges	Mtrs	4255		
12	40mm HDPE Pipe Laying Charges	Mtrs	150		
13	Fiber Cable Laying	Mtrs	150		
14	Fiber Cable Splicing	Nos	204		
15	Soft Soil Digging and Refilling	Mtrs	70		
16	Hard Soil Digging and Refilling	Mtrs	30		

17	Testing of Cables as per Standards with Power Meter	Nos	198		
18	Certification & Documentation Charges	Nos	198		
19	Project Implementation Charges	Lumpsom	1		
20	Any other item required to complete the project	Lumpsom	1		
21	Installation and commissioning of Wireless Controller	Nos	2		
22	Installation and commissioning of 24 Port PoE Switch	Nos	15		
23	Installation and commissioning of Indoor Wireless Access Point	Nos	198		
All Passive components and Services quantity is approximate only. Payment for the same will be done as per actual only.					

Total Quoted Price of All Items

Rs. In figures \_\_\_\_\_

Rs. In words \_\_\_\_\_ only)

**Notes:** In case of equal rates quoted by more than one bidder, priority will be given/awarded to the bidder who has more experience and better performance. In this regard, decision of The Director, PEC will be final.

## **SECTION VI**

### **GENERAL TERMS AND CONDITIONS**

1. Clarification of Bidding Documents; A prospective Bidder requiring any clarification of the bidding documents may notify the Purchaser in writing or by telex or cable or fax at the Purchaser's mailing address indicated in the Invitation for Bids and shall also attend pre-bid meet as detailed in this tender. The Purchaser will respond in writing to any request for clarification of the bidding documents which it receives after pre-bid meeting, but seven days prior to the deadline for submission of bids prescribed by the Purchaser.
2. Amendment of Bidding Documents At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment. In order to allow prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.
3. Language of Bid; The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Bid, the translation shall govern.
4. Period of Validity of Bids; Bids shall remain valid for 90 days after the deadline for submission of bids prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.
5. Opening of Bids by the Purchaser; The Purchaser will open all bids, in the presence of Bidders' representatives who choose to attend, at the time and date as mentioned in *Table 2 – Time Schedule*- in the following location:

Computer Centre,  
PEC University of Technology,  
Sector 12 Chandigarh 160012

The Bidders' representatives/bidders who are present shall sign a register evidencing their attendance.

In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids shall be opened at the same time and location on the next working day.

6. **Warranty:** The Supplier warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and those they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Purchaser's Specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.

- The warranty period shall be 36 months from date of acceptance of equipment(s)/machines, mountings, accessories and fittings and any other related spare/parts and equipments. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract.
- The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. "Upon receipt of such notice, the Supplier shall, within the period of 30 days and with all reasonable efforts, repair or replace the defective goods/equipment(s) or parts thereof, free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter.
- In the event of any correction of defects or replacement of defective material/part(s) during the warranty period, the warranty for the corrected/replaced material shall be extended to a further period of 36 months."

7. **Payment:** Payment for Goods and Services shall be made in Indian Rupees only and in two stages as follows:

- I. 70% upon handing over of totally functional, commissioned wi-fi campus.
  - II. 30% shall be paid after verification of installed equipments, working capability, completion of training etc.
- The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted and upon fulfillment of other obligations stipulated in the contract.

- Payments shall be made promptly by the Purchaser but in no case later than 120 days after submission of the invoice or claim by the Supplier.
  - Payment shall be made in Indian Rupees only.
  - No advance payment will be made. Payment will be released after satisfactory receipt of equipment(s) goods/ material, demonstration/training and installation.
8. Documents comprising the Bids; The Bids prepared by the Tenderers shall comprise of following components:
- Bid to be furnished as per the format for technical specifications.
  - Technical literature for each product/service, covering full technical specifications.
  - Bid prices should be quoted item wise excluding taxes duly signed and complete as per the format.
  - Maximum educational discount as could be offered should be mentioned.
9. Cost of Tender: The tenderer shall bear all costs associated with the preparation and submission of its Bid, including the cost of presentation for the purpose of clarification of the bid, if so desired by the client and the client will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering Process.
10. All active components are of same OEM.
11. All Passive components should have performance warranty of 20/25 years
12. All the hardware/software provided must carry an onsite comprehensive warranty of three years.
13. All Bidders should furnish OEM authorization letter specific to this tender/requirement
14. The system integrator shall carry out a thorough, post-installation testing and provide detailed documentation of the project.
15. The OEM of Network Switches, Wireless Access points and Controller should have a minimum of 10 registered Spares Center or Warehouse based in India. OEM to furnish required documentary proof.
16. Any proprietary terms used in specifications may be quoted with equivalent specifications.
17. The offered products in the solution against the supply order shall be latest version and should not be end of life for next 5 years, however if any product which is declared end of life product by OEM during the supply period of material, in this case the tenderer should supply replaced model or next higher model/version of the product.

18. Others Terms and Conditions:

- An EMD/ bid security of equipment should be submitted for each item in form of DD in favour of the Director, PEC University of Technology, Chandigarh. Tender without earnest money shall be considered unresponsive and rejected.
- A Performance security of 10% of the cost of the equipment will have to be deposited by the successful bidder awarded the supply order in form of Demand Draft (DD) or Bank Guarantee from a commercial bank which should be valid for 60 days beyond the completion of warranty. Warranty period shall be 3 years from the date of handing over of commissioned wi-fi campus to the satisfaction of Director PEC.
- Performance Security will be forfeited and credited to the institute (PEC University of Technology, Chandigarh) in the event the supplier does not honors the warranty and other terms and conditions of the tender.
- It must be specified if the packing, insurance and sales Tax/Excise Duty etc. will be inclusive or extra of the prices quoted.
- Period of handling over the commissioned wi-fi campus shall be 90 days the date of supply order.
- Detailed Catalogue should be sent along with supply of equipment(s).
- All legal disputes will be subject to Chandigarh Jurisdiction and will be interpreted under Indian Laws.
- The Director, PEC University of Technology, Chandigarh reserves to himself the right to reject any or all tenders without assigning any reasons.
- The firm who has been blacklisted by Centre/State Govt/UT/Boards/Corporations/any Government authority/PEC University of Technology is not eligible for the Tender.
- The penalty will be charged @ 0.5% of cost of the tender (total cost quoted by tenderer) per week after the expiry of delivery period, mentioned in the purchase order if delivery date is extended by the purchaser.
- All the rates will be FOR, PEC University of Technology, Chandigarh.
- The institute being a premier Education and Research Institute funded by Chandigarh Administration, discounts as applicable to Research Institute/Educational Institutes may be provided in the Tender.
- The bidders shall not be allowed to change, alter or modify the bids after expiry of the



deadlines for the receipts of bids.

- The firm is entirely responsible for any damage or losses occurred to the material in the transit. The firm will lodge all complaints regarding the damage occurred in the transit and shall bear all expenses.
- If an agent bids on behalf of the Principal/OEM, the same agent shall not bid on behalf of another Principal/OEM in the same tender for the same item/ product.
- Situation in which bid security will stand forfeited if a bidder withdraws its bid during the period of bid validity specified by the bidder on the bid form and in case of successful bidder, if the bidder fails to complete the project or to furnish performance security in accordance with the tender.
- Bids received after the due date will be rejected.
- The tenderer is required to bring their own testing and measurement instruments which are required for the installation, commissioning and testing. These can be taken back after completion of the process.
- Form 'D' will not be issued
- In case, any free gift scheme / cash scheme is launched by the company same will be offered by the vender to PEC University of Technology, Chandigarh free of cost.
- Generally the bid offer will be received /opened on the day as specified in the time schedule. If the scheduled date is declared as a holiday, then the tender shall be received / opened on the next working day at the same time.
- The agency/supplier shall arrange to provide demonstration/Training to the concerned lab staff regarding operation / maintenance of equipment(s) free of cost.
- The institute has been exempted from custom duty in terms of Government Notification No. 51/96-Customs Dated 23 July 1996 and Central Excise duty in terms of Government Notification No. 10/97-Customs Dated 01 March 1997 as amended from time to time.
- Warranty period shall be 03 year of the equipment(s) installation /Demonstration to PEC University of Technology.
- A technical compliance chart of the quoted product mentioning technical specifications of quoted product verses asked specifications is compulsory. Attach the compliance chart with technical bid.

- The quoted model must have been supplied to reputed research organizations like IITs, NITs, ISRO, DRDO, CSIR, IISc or other reputed organization/institutes etc. List of users of the quoted model in India along with their names, telephone numbers and email addresses should be sent along with the quotation.
- Tender validity should be 90 days from the opening of tender.

All the terms and Conditions of this tender document are acceptable to me /us.

Signature of Bidder

## SECTION VII

### CONTRACT FORM

(To be executed on Rs 100/- stamp paper)

AGREEMENT FOR the Provision of Wireless Network in PEC University of Technology, Sector – 12, Chandigarh.

This agreement has been made on this \_\_\_\_\_ day of \_\_\_\_\_ 2015 at PEC University of Technology, Chandigarh between Director, PEC University of Technology, Chandigarh, and M/s \_\_\_\_\_ registered under the companies Act-1956 and having it's registered office at \_\_\_\_\_ (hereinafter referred

to the supplier and expression shall include his/their respective heirs, executors, administrators and assignees), represented by Shri \_\_\_\_\_, S/o Sh. \_\_\_\_\_ on the other part. And whereas the Director, PEC University of Technology has empaneled some agencies for providing Equipment(s) to Computer Centre as per the terms and conditions, specifications and general conditions of the Tender, as attached along with this agreement. And whereas the said terms and conditions, specifications as well as the scope of work to be done, as set out in the General Conditions of the Tender, have been accepted and signed by the supplier. And whereas the supplier has agreed to execute, upon and subject to the condition set forth herein, (herein referred to as the said conditions) the work shown in the General Conditions of the supplier.

And whereas the supplier had deposited a sum of Rs. \_\_\_\_\_ as security in the form of a Demand Draft or Banker Cheque order No. \_\_\_\_\_ dated \_\_\_\_\_ issued by \_\_\_\_\_ in favor of the Director, PEC University of Technology, Chandigarh as performance security deposit for the said work and has agreed that this be retained by the Director PEC University of Technology, Chandigarh as security deposit.

Now therefore, it is hereby agreed as follows:

(a) In consideration of the payment to be made to the supplier, as hereinafter provided and agreed to by both the parties, the supplier shall upon and subject to the said condition execute and complete the contract.

(b) Director, PEC University of Technology, Chandigarh, shall pay the supplier such sums as shall become payable hereunder at the time and in the manner specified in the said conditions.

(c) The quality of performance related to the work is the essence of the contract and in the event of failure to perform as per term and conditions of the contract and to the satisfaction of the; the supplier shall be penalized as per provisions of the contract.

(d) The scope of work and prices schedule of quantities and conditions of tender shall form the basis of this contract and the decision of the Director, PEC University of Technology or arbitrator, in reference to all matters of dispute shall be final and binding on both parties.

(e) The said conditions of tender document and this agreement thereto shall be read and constructed as forming part of this agreement and the parties hereto will respectively abide by and submit themselves to the conditions and perform the agreement on their parts respectively in such conditions contained.

(f) The several parts of this contract have been read to us and fully understood by us. In witness whereof the parties hereto have set their respective hands the day and the year herein above written.

#### ARIBITRATION

i). Except as otherwise provided elsewhere in the contract, if any dispute, difference, question or disagreement or matter whatsoever, before/after completion or abandonment of work or during extended period, hereafter arises between the parties, as to the meaning, operation or effect of the contract or out of or relating to the contract or breach thereof, shall be referred to a Sole Arbitrator to be appointed by the Director of the Institute (PEC University of Technology) at the time of the dispute. The award given by the arbitrator so appointed shall be binding on the parties. It will not be open to the parties to challenge the jurisdiction of the arbitrator after the award has been made.

ii). If the arbitrator to whom the matter is originally referred dies or refuses to act or resigns/withdraws for any reason from the position of arbitration, it shall be lawful for the Director of the Institute to appoint another to act as arbitrator in the manner aforesaid. Such person shall be entitled to proceed with reference from the stage at which it was left by his predecessor if both the parties consent to this effect failing which the arbitrator shall be entitled to precede de-novo.

iii). It is a term of the contract that the party invoking arbitration shall specify all disputes to be referred to arbitration at the time of invocation of arbitration under the clause.

iv). It is a term of the contract that the cost of arbitration shall be borne by the parties themselves.

v). Subject to the aforesaid provisions, the Conciliation and Arbitration Act, 1996 and the rules made thereunder and any modification thereof from the time being in force shall be deemed to apply to the arbitration proceedings under this clause.

vi). All disputes arising out of or in any way connected with this agreement or arbitration shall be deemed to have arisen in Chandigarh and only courts in Chandigarh shall have jurisdiction to determine the same.

PEC University of Technology,  
Chandigarh

Shri \_\_\_\_\_  
M/S \_\_\_\_\_  
(FOR & ON BEHALF OF THE Contractor)

In the presence of:

1.

2.

(Witness)

(Witness)

**PERFORMANCE SECURITY FORM**

To: (Name of Purchaser)

WHEREAS..... (Name of Supplier)

Herein after called "the Supplier" has under taken, in pursuance of Contract (Notification of Award) No..... dated, .....20.... to supply..... (Description of Goods/equipment and Services) hereinafter called "the Contract". AND WHEREAS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the Contract. AND WHEREAS we have agreed to give the Supplier a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of..... (Amount of the Guarantee in Words and Figures) and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limit of ..... (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or

the sum specified therein. This guarantee is valid until the .....day of.....20.....

Signature and Seal of Guarantors

.....  
.....  
.....

Date.....20....

Address:.....

.....  
.....

## PERFORMANCE STATEMENT

Please attach "Performa for Performance Statement"