



IISER Mohali

भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

मानव संसाधन विकास मंत्रालय, भारत सरकार द्वारा स्थापित
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CPPP/Institute Website/Newspaper

E-TENDER NOTICE

Tender Ref.- IISERM(145)16/17Pur/03

Dated :- 27th February 2017

Critical Date Sections

Sr. No.	Description	Date	Time
1.	Tender Publishing Date and time	27 th February 2017	5pm
2.	Tender Document download start Date &	27 th February 2017	5pm
3.	Bid Submission start Date &Time	27 th February 2017	5pm
4.	Bid Submission End date and Time	20 th March 2017	Up to 2pm
5.	Tender opening Date and Time	21 st March 2017	At 3pm

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** {Technical and Commercial separate} for following item(s) from the original manufacturer/supplier at CPPP i.e. **https://eprocure.gov.in/eprocure/app**. Tender documents may please be downloaded from the E-procurement portal website **https://eprocure.gov.in/eprocure/app** & Institute website **http://www.iisermohali.ac.in**. Tender fee in shape of DD/Banker Cheque of Rs 1000/- (Non-refundable) and EMD of Rs 1,00,000/- should be submitted by DD /Banker Cheque/FDR/ Bank Guarantee in favour of the Registrar, IISER Mohali payable at Mohali. However, scanned copy of the both tender fee and EMD should be upload on website along with technical bid part. The hard copy of the same in original to be send to the address mentioned below duly superscribing the supply/work name and reference/ tender ID on the envelope and same must reach before opening the bid and if not received within due date the bid will be rejected summerly.

The Original EMD and tender fee should be sent to

Assistant Registrar (S&P)
Indian Institute of Science Education and Research,
Mohali Sector 81, SAS Nagar, Mohali, Punjab,
India, Pin: 140306

Non-receipt of original EMD and tender fee will lead to rejection of tender.

Item Details: -**BOQ****Table: Bill of Material for campus Wi-Fi expansion to AB-2 building and augmentation in hostels .**

S. No	Description	Qty.	Unit
Ruckus Wi-Fi			
1.	ZoneFlex R600 dual-band 802.11abgn/ac Wireless Access Point, 3x3:3 streams, BeamFlex+, dual ports, 802.3af PoE support. Does not include power adapter or PoE injector. Includes Limited Lifetime Warranty. Part Code : 901-R600-XX00	70	Nos.
2.	Mounting Bracket for ZoneFlex 7352/7372, R600, R500, R510. Mounts to hard wall/ceiling, outlet box, pole, truss. Includes Security Torx screw . Supports padlock. Part Code : 902-0108-0000	70	Nos.
3.	ZoneFlex T301s, 120x30 deg, Outdoor 802.11ac 2x2:2, 120 degree sector, dual band concurrent access point, one ethernet port, PoE input includes adjustable mounting bracket and one year warranty. , Does not include PoE injector . Part Code : 901-T301-xx51	10	Nos.
4.	ZoneDirector 3000 License Upgrade supporting an additional 100 ZoneFlex Access Points. Part Code : 909-0100-ZD00	1	Nos.
5.	Partner WatchDog Support for ZoneDirector 3000, 100 AP License Upgrade, 1 Year . Part Code : 802-3100-1L00	1	Nos.
6.	ZoneDirector 3000, licensed for up to 25 ZoneFlex Access Points. ZD3000 can be upgraded to support up to 500 APs with AP license upgrades. Part Code : 901-3025-XX00	1	Nos.
7.	WatchDog ZD3000 series Redundant Controller Support, 1 Year. Includes Support & license upgrades to bring redundant ZD to the same level as the primary ZD. Must purchase with a ZD3025 (PN # 901-3025-XX00) or use with existing redundant ZD3000. Part Code : 803-3000-1RDY	1	Nos.
8.	POE Injector for Indian 230V AC Supply Part No. : 902-0180-XX00	10	Nos.
9.	POE Injector for Indian 230V AC Supply Part No. : 902-0162-IN10	10	Nos.
Brocade 24 POE port managed switch (Compatible with Brocade Network Advisor)			
S. No.	Description of Material		
1.	ICX6430-24P : 24-Port 1G Switch POE+ 390W, 4x1G SFP Uplink/Stacking Ports	10	Nos.
2.	Fiber Transceiver for Single mode fiber (1000 Base LX)	4	Nos.
Copper Components (Cat-6 – Data)			
S. No.	Description of Material		
1.	Cat 6, Power Cat Plus ,UTP Cable, 4 pair, 305 mtrs, Blue	30	Nos.
2.	24 port Un-loaded cat-6 Jack Panel	10	Nos.
3.	PowerCat6 Data Gate Jack, Shuttered WHITE	160	Nos.
4.	Face Plate (1 Port - 86mmx86mm- White)	80	Nos.
5.	SMB	80	Nos.
6.	CAT 6 Patch cord, 1 Mtr, Blue -LSZH	160	Nos.

7.	SC-LC Style LSZH Single mode 9/125 micron Duplex Patch Cord (3 meter length)	4	Nos.
Accessories			
S. No.	Description of Material		
1.	25MM PVC Pipe (with required saddle,screws and gutties for surface wiring)	1600	meter
2.	Flexible Conduit (size : 25 mm)	100	meter
3.	Flexible Conduit (size : 40 mm)	100	meter
Services			
S. No.	Description of Services		
1.	Laying of UTP cable	9150	meter
2.	Laying of PVC Pipe	1600	meter
3.	Termination of IO	80	Nos.
4.	Jack-Panel Termination	10	Nos.
5.	Installation & Dressing of Rack and labeling	10	Nos.
6.	Installation and mounting of APs	80	Nos.
7.	Project Implementation	1	Nos.

Specifications Sheet

Ruckus Wi-Fi

A. Indoor WIRELESS ACCESS POINT Ruckus R600

S. No	Specification / Requirement
1	The APs should support the 802.11a, 802.11b, 802.11g and 11n and ac standards. It should also support 802.11ac standard in the 5 GHz band.
2	Simultaneous client support on both dual band radio is essential.
3	Shall provide Min 22 dBm Radio output power for both Radio's.
4	Should support minimum 3x3 or higher MIMO on all radio bands for an aggregate capacity of 1.170Gbps
5	The access points should be centrally managed but In some small isolated environments the AP should be able to function as a full-fledged stand-alone access point without the requirement of a controller.
7	Security mechanisms should be in place to protect the communication between the Access Point controller and the Access Points.
8	Since most radio interference come from the WLAN network itself the vendor should specify what mechanisms such as beam steering/ adaptive antenna technology/ beamforming are available in combination to focus the energy on the destination STA and minimize radio interference with the surrounding of the AP. The vendor should specify if the activation of such feature is still compatible with 802.11n spatial multiplexing.
9	Since the WLAN network will be using an unlicensed band the solution should have mechanisms that reduce the impact of interference generated by other radio equipment operating in the same band. Describe techniques supported.
10	The access point should be able to detect clients that have dual band capability and automatically steer those client to use the 5GHz band instead of the 2.4GHz band.
11	The antennas to be dual polarised and should be integrated inside the access point enclosure to minimize damage and create a low profile unit that does not stand out visually.

12	The access point should have at least 1 10/100/1000Mbps Ethernet ports with POE support for 802.11af standard.
13	The access point should support 802.1q VLAN tagging
14	The access point should support WPA2 enterprise authentication and AES/CCMP encryption. AP should support Authentication via 802.1X and Active Directory.
15	Implement Wi-Fi alliance standards WMM, 802.11d, 802.11h and 802.11e
16	The Access Point should provide for concurrent support for high definition IP Video, Voice and Data application without needing any configuration. This feature should be demonstrable.
18	Channel selection based on measuring throughput capacity in real time and switching to another channel should the capacity fall below the statistical average of all channels without using background scanning as a method.
19	Should support Transmit power tuning in 1dB increments in order to reduce interference and RF hazards
20	Device antenna gain (integrated) must be at least 3dBi and should provide automatic interference rejection of about 10dB.
21	Should support up to 200 clients per AP
22	Should support DHCP Option 82 in standalone mode (without Controller) as well as in Managed mode (with Controller)
23	For troubleshooting purposes, the administrator should have the ability to remotely capture 802.11 and / or 802.3 frames from an access point without disrupting client access.
24	Operating Temperature: 0°C - 45°C
25	Operating Humidity: 10 % - 95% non-condensing.
26	Should be plenum rated and comply to RoHS
27	Should be WiFi certified; WiFi certificate to be enclosed
28	Should be WPC approved; ETA certificate to be enclosed
29	Device should be UL 2043 Plenum Rated.

B. ZoneFlex T301 Series Outdoor AP (Dual-Band 2x2:2 802.11ac AP) with three year warranty and with fixing accessories.

1. Access Points proposed must include radios for both 2.4 GHz and 5 GHz.
2. Must have a robust design for durability
3. AP Must be IP 67 Certified and outdoor rated (datasheet of the Access Point Should have IP- 67 mentioned)
4. Operating temperature: -10 degree to 55 degree
5. Should be able to handle up to 250 Concurrent users.
6. Must support 2X2 multiple-input multiple-output(MIMO).
7. Must support simultaneous 802.11a/b/g/n/ac
8. For better performance on Smart devices like phones and tablets, the access point should support diverse multiple polarization of integrated antennas.
9. Must support data rates up to 300Mbps on 2.4GHz Radio and 867 Mbps on 5GHz.
10. AP should provide minimum 26dBm transmission power for 2.4Ghz and 25dBm for 5Ghz. (EIRP should limited as per govt regulation for indoor AP's).
11. The Wireless AP should have the technology to improve downlink performance to all mobile devices including one and two spatial stream devices on 802.11n. The technology should use advanced signal processing techniques and multiple transmit paths to optimize the signal received by 802.11 clients in the downlink direction without requiring feedback and should work with all existing 802.11 clients.
12. Must support AP enforce load-balance between 2.4Ghz and 5Ghz band.

13. Must have Channel selection based on measuring throughput capacity in real time and switching to another channel should the capacity fall below the statistical average of all channels without using background scanning as a method. Should also support coverage hole detection and performance optimization.
14. Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.
15. Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI).
16. Must support IDS/IPS.
17. Access Points must support a distributed encryption/decryption model.
18. Access Points must support encryption on CAPWAP/LWAPP Standard. Monitoring
19. Mesh support should support QoS for voice over wireless.
20. Must support 16 WLANs per AP for SSID deployment flexibility.
21. Must support HTTP/S, telnet and/or SSH login to APs directly for troubleshooting flexibility.
22. Must support Power over Ethernet 802.3af.
23. 802.11e and WMM
24. Must support QoS and Call Admission Control capabilities.

C. Wireless Controller and Upgrade License for Ruckus Zone Director 3000

Technical Specification
Wireless Controller:-
Essential Features
General Feature
50 Access Point Upgrade License for Existing Zone Director 3000
System should provide real-time charts showing interference for access point, on a per-radio, per channel basis thru existing controller
Ability to map SSID to VLAN and dynamic VLAN support for same SSID thru existing controller
Support automatic channel selection for interference avoidance thru existing controller
Access points can discover controllers on the same L2 domain without requiring any configuration on the access point thru existing controller
Access points can discover controllers across Layer-3 network through DHCP or DNS option thru existing controller
Security & Monitoring
WIRELESS SECURITY: WEP, WPA-TKIP, WPA2-AES, 802.11i
AUTHENTICATION : 802.1X, local database External AAA servers : Active Directory, RADIUS, LDAP thru existing controller
System should provide DOS attacks and Intrusion Detection & Prevention and Control for any Rogue Access Points. thru existing controller
The AP should be able to scan for rogue access points and the controller should be able to locate them on a floor map. The controller should be able to send a notification to the administrator when a rogue AP has been detected. thru existing controller
Controller should support CAPWAP/LWAPP protocol. thru existing controller
System must be able to provide L2/L3/L4 Access Control. thru existing controller
Controller should support L2 Client Isolation so User cannot access each other's devices. Isolation should have option to apply on AP or SSID's thru existing controller

Controller should support Access Control based on Identity/Role/ Device/Time or Application. thru existing controller

IPv4 & IPv6 support from Day 1 thru existing controller

Should support onboard and external DHCP server thru existing controller

Controller should support integrated or External AAA server including Microsoft AD and Linux based open source AAA servers. thru existing controller

The proposed architecture should be based on controller based Architecture with thick AP deployment. While encryption / decryption of 802.11 packets should be able to perform at the AP. thru existing controller

The Controller should support OS/Device finger printing and device type based policies i.e allow or deny, Bandwidth rate limit, VLAN mapping thru existing controller

The controller shall be manageable using CLI, Telnet/SSH, HTTP based GUI and SNMPv2/v3.

The controller should be able to present a customizable dashboard with information on the status of the WLAN network. thru existing controller

The controller should be able to raise critical alarms by sending an email. The email client on the controller should support SMTP outbound authentication and TLS encryption. thru existing controller

The vendor should specify if all features are available with the basic access controller pricing or if the support of some features require the acquisition of some licenses. The vendor should specify which feature requires which type of licensing including its cost.

Self-healing (on detection of RF interference or loss of RF coverage) and vendor should provide their Interference mitigation techniques for same Domain interference (interference from AP's connected to same Controller) and from other AP's and 2.4Ghz devices (Microwave's, Radio's etc.) thru existing controller

Regulatory

Wi-Fi Alliance certified.

Brocade 24 POE port managed switch

ICX6430-24P : 24-Port 1G Switch POE+ 390W, 4x1G SFP Uplink/Stacking Ports

S. No.	Description
1	Should be fully managed type
2	Should have 24 x 1G POE ports
3	Should have minimum 4x1GbE SFP unlinK ports
4	Should be 1U rack mountable
5	Should be supplied with complete mounting bracket and screws.
6	Should be compatible with "Brocade Network Advisor" NMS

Fiber Transceiver for Single mode fiber.

1.	Brocade Fiber Transceiver for Single mode fiber (Type :1000 Base LX)
2.	Should be strictly of make : Brocade

Copper Components (Cat-6 – Data).

1. Cat 6, Power Cat Plus ,UTP Cable, 4 pair, 305 mtrs, Blue

A	Category 6 UTP Cable
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A.1	Category 6 Unshielded Twisted Pair 100W cable shall be compliant with EIA/TIA 568-C.2
A.2	Should be 4 pair, 23 AWG
A.3	Cable should be CM rated
A.4	Cable Should Have Internal cross separator
A.5	Jacket: LSZH (Low smoke zero halogen)
A.6	Conductor: Solid Copper
A.7	All the Cat6 cabling components should be tested and verified by ETL with data transmission frequencies min 250 MHz or higher.
A.8	Should have performance warranty for 20/25 years
A.9	Cable roll should be of 305 meter length

2. 24 port Un-loaded cat-6 Jack panel

C	24 PORT CAT6 Jack Panel
C.1	Should Be made of cold rolled steel
C.2	Should conform to TIA / EIA 568-C.2 Component Compliant
C.3	Should terminate 24 UTP CAT 6 (4 pair) Cables
C.4	Should confirm to EIA/TIA 568A wiring Pattern
C.5	Should have labeling strips for identification.

3, 4 & 5. Cat-6 Information Outlet with Face Plate and Gang-Box

B	Cat 6 Information Outlet with Face Plate and Gang Box Complete
B.1	Category 6, EIA/TIA 568-C.2
B.2	Use insulation displacement connectors
B.3	All information outlets for 100 W, 22-24 AWG copper
B.4	Should have shutter on I/O
B.5	Should have Plastic Housing: Polycarbonate, UL94V-0 rated or equivalent
B.6	Contact Plating: 50 μinches gold over 100 μinches nickel
B.7	Operating Life: Minimum 200 Re-terminations
B.8	Single Gang square plate, 86mmx86mm
B.9	Plug in Icons – Icon tree – to be supplied with plate
B.10	Write on labels in transparent plastic window – supplied with plate

6. Cat-6 Patch Chord

D	Patch Chords (1 meter)
D.1	Should be 4 Pairs 24 AWG copper cables.
D.2	The Outer Jacket should be Low Smoke Zero Halogen.
D.3	24 AWG stranded bare copper
D.4	Should minimum comply with proposed ANSI/TIA/EIA-568-C.2
D.5	Should be verified by ETL (ETL certificate to be enclosed with the Bid)
D.6	UL listed (UL certificate to be provided along with the Bid)
D.5	Should Have cross separator

7. SC-LC Style LSZH Single mode 9/125 micron Duplex Patch Cord

Sr. No.	Specifications	Requirement
1	Make and Type	SC to LC Duplex Fiber Optic Patch Cord Single Mode OS2 , 3 Mtr, 9/125 Micron
2	Cable Sheath	LSZH
3	Ferrule	Ceramic
4	Buffer Diameter	900 micron meter
5	ROHS	ROHS/ELV Compliant

Accessories

PVC and Flexible Conduits

Sr. No.	Specification.
1.	PVC and flexible conduits should be of ISI standard mark
2.	Required Fixing accessories like saddle and screws required should be supplied with the conduits

SUBMISSION OF TENDER

- I. All bid/ tender documents are to be uploaded online at Central Public Procurement portal i.e <https://eprocure.gov.in/eprocure/app> only and in the designated cover/part on the website against tender ID. Technical bid and financial bid shall be submitted in the designated online cover/part. Tenders/ bids shall be accepted only through online mode and no manual submission of the same shall be entertained except tender fee and EMD. Late tenders will not be accepted.
- II. The online bids shall be opened at the office of the Assistant Registrar (P&S), IISER Mohali, on above given date. If the tender opening date happens to be on a holiday or non-working day due to any other valid reason, the tender opening process will be attended on the next working day at same time and place. IISER Mohali will not be responsible for any error like missing of schedule data while downloading by the Bidder.
- III. The bidder shall upload the tender documents duly filled in and stamped by the authorized signatory on each and every page. Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.
- IV. The bidder shall upload scanned copy of the TIN number, PAN Card, VAT registration certificate/VAT return, Service tax registration number duly signed and stamped.
- V. E-procurement system ensures locking on the scheduled date and time. The system will not accept any bid after the scheduled date and time of submission of bid.

Terms and Conditions:

1. Bidder should have executed orders of similar nature in the past in at least three different Govt./Semi-Govt organizations.
2. The bidder must submit the authorization certificate from the concerned OEM for all active and passive components quoted (with the exclusion of accessories) , otherwise the bid shall be forfeited straightforward .
3. The active components should be from Ruckus and Brocade as per requirement in the BoQ so as to meet the backward compatibility of the existing Wi-Fi system of the Institute.
4. All Passive Networking Components except accessories should be from the same OEM.
5. The bidder should be ISO 9001:2000 & QS: 9000 certified.
6. Technical bid should accompany the Part Number, model number of the quoted items along with data sheets.
7. All active OEM components (Ruckus and Brocade) should be quoted with comprehensive onsite warranty and support of minimum five year period.
8. Before execution of work, bidder will prepare and submit the actual layout detail regarding earmarked AP locations in “AB-2 building” and in “Hostels(6, 7 and 8) Blocks” . The

connectivity work in AB-2 building will be done in the same fashion as in already commissioned AB-1 building and the augmentation work in Hostels(6 , 7 and 8) shall be done similar to Hostel5.

9. 9U / 6U Racks shall be utilized from old stock available with the Institute.
10. Required fixing accessories like saddle and screws should be supplied with the conduits as integrated part.
11. Payment of passive networking services will be made as per actual work done.

INSTRUCTIONS

1. The Online bids should be submitted directly by the original manufacturer/supplier, If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company for quoting the price otherwise such quotation will be rejected.
2. The quantity mentioned in this inquiry is and shall be deemed to be only approximate and will not in any manner be binding on the Institute. Before the deadline for submission of the online bid, IISER Mohali reserves the right to modify the tender document terms and conditions. Such amendment/modification will be notified on website against said tender ID
3. The rates offered should be FOR Chandigarh/Mohali in case of firms situated outside Chandigarh/Mohali, and free delivery at the Institute premises in case of local firms. Supplier from outside India should mention the Ex-works/FOB/FCA/CIF/CIP price clearly. Conditional tenders will be summarily rejected.
4. In case of Ex-godown terms the amount of packaging forwarding freight etc should clearly be indicated by percentage or lump sum amount. Institute has policy not to make any advance payments towards any purchase, Letter of credit can be opened if required.
5. THE INSTITUTE IS EXEMPTED FROM EXCISE AND CUSTOM DUTY under notification no- 51/96 –CUSTOM DATED 23/7/1996 AND DSIR REGISTRATION NO TU/V/RG/- CDE(1062)/2011 DT. 02/09/2011 / EXCISE NOTIFICATION NO. 10/97- CENTRAL EXCISE DT. 01.03.1997. Vendor(s) have to check/verify and then quote the item(s) against the exemption certificate at their own risk. Certificate issued by IISER Mohali will applicable on quoted product or not, IISER Mohali will not responsible and not paid any payment.
6. Tax: This Institute is not exempted from the payment of Sales Tax/Service Tax/VAT. The current rate (i.e. percentage of Sales Tax should be clearly indicated included or excluded) wherever chargeable. Please also provide/upload the copy of PAN card, TIN number, Service tax number, Sales tax number duly self-attested.
7. The delivery period should be specifically stated. Earlier delivery will be preferred
8. The firms are requested to provide/upload detailed description and specifications together with the detailed drawings, printed leaflets and literature of the article quoted. The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars, the quotation is liable for rejection.

9. Validity of offer: 90 days. The warranty period after satisfactory installation should be mentioned and firm should replace all manufacturing defect parts/ whole item under warranty without any extra cost including clearance, freight, taxes. Security deposit/ Bank Performance Guarantee @ 10 % of the value of supply order as per norms may be sought from the firms. No counter condition accepted.
10. The right to reject all or any of the quotation and to split up the requirements or relax any or all the above conditions without assigning any reason is reserved by the IISER Mohali. For any corrigendum and addendum please be checked the website <https://eprocure.gov.in/eprocure/app> and <http://www.iisermohali.ac.in>
11. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

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(Mukesh Kumar)
Assistant Registrar (S&P)