National Institute of Technology Sikkim

Ravangla Campus, Barfung Block, South Sikkim 737139

Tender No: 06/NITS/Works/ICTI-WiFi/15-16/10

Tender Floating Date: 30/05/2016

Pre Bid Meeting Date: 16/06/2016 from 2:30 PM to 5:00 PM

Last Date of submission: 25/06/2016 till 5:00 PM

Date of opening: 26/06/2016, 11:30 AM

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National Institute of Technology (NIT) Sikkim, Ravangla, South Sikkim – 737 139, invites tender for supply and Installation of extension of Wi-Fi & LAN Setup at NIT Sikkim as per specifications given in the "Annexure – A" attached to this Tender document annexed here to. All offers should be made in English and should be written in both figures and words. The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions here in. Non- compliance with specifications/ instructions in this document may disqualify the bidders from the tender process.

The Institute reserves the right to accept or reject any quotations or to select the item (in single or multiple units) or to reject the bidding process or any quotation wholly or partly without assigning any reason.

Instructions to Bidders:

1. All the offered Active & Passive components mentioned in the BOQ should be of reputed make.
2. All the Access Points should be compatible with the NIT Sikkim existing setup.
3. Seamless integration with the NIT Sikkim's existing components and present Wi-Fi structure should be done by the successful bidder. It should be an extension of existing Wi-Fi & LAN setup only and should be controlled & managed by the existing central devices.
4. Digging, Cutting, Filling, Laying (including PVC conduit / HDPE pipe/ GI Pipe wherever required), Fixing and installation of the entire equipment will be the responsibility of the successful bidder.
5. 3 years' Product & Service support for the entire setup is to be given at the Ravangla Campus.
6. The bidder/OEM should have a proper support infrastructure (with trained engineers) to handle the implementation and support of the system at NIT Sikkim, Campus.

   The Passive Products of OEMs with minimum 5 years of Indian operation will only be considered for Technical evaluation. The OEM of Active components (Wireless & Switching) should be an established vendor with presence in India at least for the last 5 years; proof for the same should be submitted by the bidder. OEM is preferred to have support center / replacement support in the North East India.
7. Active components (Wireless Controller, AP's) and Switch and SFP modules proposed by the bidder should be compatible with existing setup of NIT Sikkim.
8. The Bidder should have valid "Certified Installer Certificate" from the Cabling O.E.M.
9. The Cabling Products are preferred to carry 5 years Warranty Certification.
10. The bidder should have adequate experience in Network Integration in large projects with 20 or more AP particularly in PSU/ Defense PSU ' s in India /Government institutions. References in this respect should be given along with the credentials. The reference projects PO's / Completion certificates from end customers.
11. The bidder should have experience for at least 3 years and should have executed projects on latest technologies. They would provide E2E services (A Single point of Contact for Passive components, Active components, Security etc.).

General Terms and conditions:

1. Order will be placed as per the Turnkey basis. If any extra components / items required to complete the job should be include into the offer by the bidder and this shall be valid only for this particular contract.
2. No extra/additional cost, apart from offered value, will be given to the successful bidder to complete the entire job in all aspect in any situation without approval from the competent authority.
3. Material delivery, Execution of work and Service Support to be done at NIT, Ravangla Campus.
4. Transportation, Staying & fooding facility will be the Bidder's responsibility.
5. ISO certified bidder may be preferred.
6. BID format must be as per "Annexure-B".
7. Photocopy of Company/firm registration, PAN Card, CST / VAT registration Certificate, Service, Tax Registration Certificate etc. are to be enclosed.
8. Solvency Certificate of min Rs 2 Lakhs or more from the Supplier's Banker to be given.
9. The bidder must have the capability to execute, operate and manage a large network of similar size; reference in this respect should be provided in the form of purchase orders and/or performance / completion certificate from end customer.
10. The quotations shall be submitted in a sealed envelope duly marked **"Quotation against Tender enquiry No.: 06/NITS/Works/ICTI-WiFi/15-16/10 dated 30/05/2016 Closing Date on 25/06/2016"** on the corner of the envelope. Quotation received after closing date / time will not be considered.

    All tender documents should have to be sent through courier, speed post or registered post only or may be dropped in the tender box at NIT Sikkim. Since, NIT Sikkim is located in a

remote location, even through speed post it may take seven days. Therefore, bidders are suggested to send the quotation well in advance or by hand.

11. The printed literature and catalogue / brochure giving full technical details may be included with the technical bid to verify the specifications quoted in the tender. The bidders may submit copies of suitable documents in support of their reputation, credentials and past performance. The rates should be quoted in figures (typed or printed) and cutting should be avoided. The final amount should be in figures as well as in words.

    The bids should be addressed to **"The FIICTI, National Institute of Technology Sikkim, Ravangla Campus, Barfung Block, South Sikkim 737139"**.

12. The bid will be opened on 27.06.2016, 3:00PM. The bidders or their authorized representative may also be present during the opening of the Bid, if they desire so, at their own expenses. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before awarding the contract.

13. The quantity shown against the items in Annexure –B, is tentative and may vary as per dynamic requirement of the Institute.

14. In the event of any dispute or difference(s) between the vendee Institute (NIT Sikkim) and the vendor(s) arising out of non-supply of material or supplies not found according to specifications or any other cause whatsoever relating to the supply or purchase order before or after the supply has been executed, shall be referred to "The Director, NIT Sikkim", who may decide the matter himself.

15. The cost of the tender document is Rs. 800/-. The bidders who are downloading the document from the website should send demand draft of Rs. 800/- drawn in favour of **"The Director, NIT Sikkim"** payable at SBI Ravangla.

    The EMD of 30,000/- (Thirty Thousand only) should be enclosed along with the technical bid. The EMD should be drawn in favour of **"The Director, NIT Sikkim"** in the form of demand draft payable at SBI Ravangla. If the successful bidder fails to supply the goods/equipments within stipulated time, then the EMD may be forfeited.

16. **Clarifications**: Normally, pre-bid enquiries will not be entertained. However, in case the bidder requires any clarification regarding the tender documents, they are requested to contact Mr. Pankaj Kumar Keserwani, Assistant Professor, NIT Sikkim (e-mail: pankajkeserwani.cse@nitsikkim.ac.in) on or before 20.06.2016.

17. **Pre – Qualification Criteria:** Bidders are expected to be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender may be enclosed.

18. **Prices:** The Prices quoted should be inclusive of all taxes or duties, packing, forwarding, freight, insurance, delivery and commissioning etc. at destination site (NIT Sikkim, Ravangla, Sikkim). The rates shall be firm and final. Nothing extra shall be paid on any account. Way bill provided by Institute but vender must add 1% of the material cost as ECESS payable to Govt. of Sikkim.

19. **Validity:** The bid should be valid for acceptance for a period of at least sixty (60) days. The Bidders should be ready to extend the validity, if required.

20. **Delivery:** The Equipment should be delivered and installed within the period as specified in the purchase order and be ready for use within Four (04) weeks of the issue of purchase order unless otherwise prescribed.

21. **Liquidated Damage:** If the bidder fails to deliver and place any or all the Equipment or perform the service by the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 10% of total order value will be deducted.

22. **Warranty:** Bidders must give the comprehensive onsite warranty as required from the date of successful installation of Equipment against any manufacturing defects and also give the warranty declaration that "*everything to be supplied by us hereunder shall be free from all defects and faults in material, workmanship and shall be of the highest quality and material of the type ordered, shall be in full conformity with the specification and shall be complete enough to carry out the experiments, as specified in the tender document.*"Any deviation in the material, and the specifications from the accepted terms may liable to be

rejected and the bidders need to supply all the goods in the specified form to the satisfaction /specifications specified in the order / contract and demonstrate at the their own cost. An amount equal to 10% of the total cost of instruments shall be kept as "performance guarantee" three months beyond warranty period in the form of FD/PBG.

23. **Cancellation of Tender:** The NIT Sikkim reserves the right to cancel this tender partly or fully any time without assigning any reason, thereof. This tender document is being issued by the undersigned with the approval of the competent authority of the NIT Sikkim.

FIICTI
National Institute of Technology Sikkim
Ravangla Campus, Barfung Block, South Sikkim 737139

TECHNICAL SPECIFICATION

S/N	Specification / Requirement	Compliance (Yes/No)	Deviation (If Any)
	SL-1. Wireless Outdoor Access Point (Qty-4 nos)		
1	The Access Point should have minimum 1 Port 10/100/1000Mb POE in Ethernet port.		
2	802.11n Access Point should be able to power up using standards 802.3af POE input, and at the same time operate in full MIMO mode. It must have option to power through 12 VDC power Adaptor.		
3	AP is expected to have Dual Radios to support 2.4 GHz & 5Ghz concurrent users with 802.11 a/b/g/n/ac capability. AP Must support 2x2 or better MIMO with 2 Radio Chain		
4	AP is expected to handle up to 200 Concurrent users.		
5	AP should provide minimum 25 dBm transmit power for 2.4Ghz and 5 Ghz. (EIRP should be limited as per govt. regulation for outdoor AP's).		
6	Wireless Interface: Dual radio; 802.11a/b/g/n/ac ; 2.4Ghz and 5Ghz concurrent support.		
7	SSID support : 16 BSSID (8 BSSID per Radio)		
8	AP is expected to support upto 300Mbps data rates in 2.4Ghz 802.11b/g/n and up to 867 Mbps in 5Ghz 802.11/a/n/ac .		
9	The access point should support 802.1q VLAN tagging		
10	Antenna: Integrated/External for Sectorial 120 degree (as specified in BOQ) coverage, with min 4 dB Gain for 2.4Ghz and 5Ghz both.		
11	Should support the operating temp -10° to 55° C and Humidity: 15 to 95% non-condensing.		
12	AP Must be IP67 certified for outdoor deployment. AP must be outdoor rated and no AP will be accepted which is indoor and installed in outdoor casing.		
13	The access point should support following security mechanism: WEP, WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i.		
14	System should support Authentication via 802.1X, Local (controller based) authentication database, support for RADIUS and Active Directory.		
15	Web User Interface (HTTP/S) • CLI (Telnet/SSH), SNMP v1, 2, 3		
	SL-2. Wireless Indoor Access Point (Qty-5 nos)		
S/N	Specification / Requirement	Compliance (Yes/No)	Deviation (If Any)
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 dual band radio is expected.		
3	Shall provide Min 22 dBm Radio output power for both Radio's.		
4	The access point is expected to detect clients that have dual band capability and automatically steer those client to use the 5GHz band instead of the 2.4GHz band.		
5	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.		
6	The access point should have minimum 1 Gigabit Ethernet port.		
7	The access point should support 802.1q VLAN tagging		

Signature (in ink, with date) & Seal of Bidder/Tenderer

S/N	Specification / Requirement	Compliance (Yes/No)	Deviation (If Any)
8	The access point should support WPA2 enterprise authentication and AES/CCMP encryption. AP should support Authentication via 802.1X and Active Directory.		
9	Implement Wi-Fi alliance standards WMM, 802.11d, 802.11h and 802.11e		
10	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.		
11	Support RF auto-channel selection by the following three methods: a) measuring energy levels on the channel; b) monitoring for 802.11 signal structures and; (c) detecting radar pulses. Other similar forms of smart selection shall also be accepted.		
12	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.		
13	Should support up to 200 clients per AP is expected		
14	Should support DHCP Option 82 in standalone mode (without Controller) as well as in Managed mode (with Controller)		
15	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.		

SL-3. Switch (Qty-2 nos) (Preferably **CISCO** make)		

S/N	Specification / Requirement (Preferably **CISCO** make)	Compliance (Yes/No)	Deviation (If Any)
1	L2 Managed Switch having 24x10/100/1000BaseT ports and 4xSFP slots		
2	Switching Capacity should be at least 56Gbps		
3	Packet Forwarding Rate should be at least 41.7Mpps for 64-byte packet size		
4	The switch should have non-blocking architecture & wire-speed performance under fully loaded condition from day-1		
5	It should have hardware reset button & fan-less design.		
6	The Switch should have following L2 features from Day-1		
7	MAC Address Table size: At-least 16000, support at least 256 static MAC		
8	Flow Control: IEEE 802.3x in full duplex, back pressure in half duplex & HoL blocking prevention		
9	IGMP v1 v2 with at least 256 IGMP snooping groups, Per VLAN IGMP Snooping, port based IGMP snooping fast leave.		
10	LLDP, LLDP-MED, IPv6 Neighbor Discovery, L2 multicast filtering,		
11	IEEE802.1D STP, 802.1w RSTP, Root guard or equivalent feature.		
12	The switch should be able to avoid the loop occurring in a single port connected to an unmanaged switch/hub by shutting down the corresponding port or corresponding VLAN		
13	IEEE 802.3ad Link Aggregation with at least 8 ports per groups & 14 groups per switch.		
14	Port mirroring for Tx/Rx/Both. One-to-One mode, Many-to-one mode		
15	IEEE 802.1Q VLAN, at least 256 Static VLANs, Voice-VLAN, asymmetric VLAN, auto surveillance VLAN		
16	The switch should have 802.1p support with 4 queues per port. Support strict & WRR queue handling technique.		
17	The switch should have Port-based ingress & egress bandwidth control with minimum granularity of at least 64kbps		
18	The switch is expected to have standard & extended Access control list		

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19	The switch should have the following security features from Day-1: SSLv3, Broadcast/Multicast & Unicast storm control, port security feature with at least 64 MAC per port, traffic segmentation, ARP spoofing prevention, IEEE 802.1x, DHCP server screening, RADIUS server, Binding of IP address with MAC address & interface.		
20	The switch should have feature to protect the CPU from protocol control packet attack.		
21	The switch should have cable diagnostic feature to check the status of connected RJ45 cables.		

ANNEXURE-B

PRICE BID FORMAT FOR WIFI and LAN EXTENSION

SL	Item	Item Description	Make & Model no.	Qty	UOM	UNIT PRICE	TAX %	TAX AMT.	TOTAL WITH TAX
1	Wireless Outdoor Access Point	Wireless Outdoor- 802.11ac Outdoor Wireless Access Point with Sectorial Antenna including PoE injector with its power adapter and 3 year advance replacement Warranty by OEM (SPECIFICATION AS PER ANNEXURE-A, SL-1)		4	NOS				
2	Wireless Indoor Access Point	Dual Band 802.11ac Wireless Access Point, PoE support. Including PoE injector. (SPECIFICATION AS PER ANNEXURE-A, SL-2)		5	NOS				
3	Switches	24 Port Semi/web Managed Gigabit Switch with atleast 4 SFP slots (SPECIFICATION AS PER ANNEXURE-A, SL-3)		1	NO				
4	Racks	6U Wall Mounted Rack with PDU, Screw & Glass Door		1	NO				
5	UPS	Minimum 550VA UPS with built-in Battery		1	NO				
6	STP Cable	STP CAT5 Cable, Roll of 305 Mtr.		1	Box				
7	STP Connectors	STP RJ45 Connectors		15	Pcs				
8	Patch Cord	1Mtr UTP Patch Cord		7	NOS				
9	Pole	GI Pipe /Pole , 6Mtr length (for mounting Aps)		2	Nos				
10	Fiber Optic Cable	6 Core SM Out Door Fiber Cable		300	Mtr				
11	LIU - 12 Port	12 Port Rack Mountable LIU loaded with Adaptors & Pigtails		1	NO				
12	CAT6 Cable	UTP CAT6 Cable Box, Roll of 305Mtr		2	Box				
FOR LAN EXTENSION AT LAB :									
13	Switches	24 Port Semi/web Managed Gigabit Switch with atleast 4 SFP slots (SPECIFICATION AS PER ANNEXURE-A, SL-3)		1	NOS				
14	CAT6 Cable	UTP CAT6 Cable Box, Roll of 305Mtr		1	Box				
15	Patch Panel	CAT6 Patch Panel - 24 Port, Rack Mountable		2	Nos				
16	I/O Box	CAT6 I/O with Single Face Plate & SMB		16	Nos				
17	Patch Cord - 1Mtr	CAT6 1Mtr Length UTP Patch Cord		18	Nos				
18	Patch Cord - 2Mtr	CAT6 2Mtr Length UTP Patch Cord		18	Nos				
19	RACK 6 U	6U Wall Mount Rack with PDU, Screw Pack, Tray etc..		1	Set				
20	Service / Installation charges	One time Installation & configuration charges for all Components including laying, fixing, digging/ cutting and supply of PVC, HDPE & GI conduit as per scope of Work & NIT's requirement WITH 3 years comprehensive Service Support		1	Job				
21	Service	Supply of Manpower for onsite technical support for one year (Accommodation and fooding will not provided by the Institute).		1	Job				
	TOTAL AMOUNT WITH ALL TAXES & DUTIES:								
	TOTAL AMOUNT IN WORDS:								

Signature (in ink, with date) & Seal of Bidder/Tenderer

ANNEXURE-C

PROFORMA FOR DIRECT PAYMENT/TRANSFER TO BANK ACCOUNT BY NIT SIKKIM

Slno	Particula	Informatio
1	Firm (Beneficiary) Name	
2	Please enclose a cancelled cheque and copy of PAN card. Cancelled cheque & PAN card is to be	
3	Complete Bank Account No. of the Firm [beneficiary]. [in case of change in bank account vendor should write	
4	Bank Name	
5	Bank Address	
6	IFSC Code no	
7	Mobile no (for SMS)	
8	Email ID (for information)	

We undertake that all information provided above is correct and NIT Sikkim will not be responsible in case of any error on the part of firm.

Note: This Performa shall be enclosed with price bid

[Seal and Signature of the firm]

Signature (in ink, with date) & Seal of Bidder/Tenderer