



भारतीय
प्रौद्योगिकी
संस्थान
काशी हिन्दू विश्वविद्यालय



INDIAN
INSTITUTE OF
TECHNOLOGY
BANARAS HINDU UNIVERSITY

IIT(BHU)/IPCell/2016-17/Networking/EoI/141

**EXPRESSION OF INTEREST (EOI)
FOR
SUPPLY, INSTALLATION, INTEGRATION, COMMISSIONING AND
MANAGING OF IIT (BHU), VARANASI CAMPUS WIDE LOCAL
AREA NETWORK (WIRED AND WI-FI)**

The Indian Institute of Technology (Banaras Hindu University) [IIT(BHU)] is interested in setting/ upgrading its Local Area Network (LAN). A brief description of the existing and proposed network is given in Annexure-I.

Expression of Interest (EOI) proposal is invited in sealed envelope from the Original Equipment Manufacturer (OEM) for the above campus LAN. The EoI alongwith relevant documents must be submitted to **The Registrar, IIT (BHU), Varanasi (U.P.) – 221 005, U.P.** latest by **11.06.2016 (upto 2:00 pm)** by mentioning *Expression of Interest (EoI) for Supply, Installation, Integration, Commissioning and Managing of IIT (BHU), Varanasi Campus Wide Local Area Network (Wired and Wi-Fi)* on envelop.

The EOI document can be downloaded free of cost from IIT (BHU) website: www.iitbhu.ac.in.

(A) Terms & Conditions:

1. The OEM of the network product should have well established manufacturing plant/ Research & Development Lab in India or abroad.
2. The bidder should submit the single proposal for supply, installation, integration, commissioning and management of the Institute campus LAN consisting of active and passive network component.
3. The bidder (if not OEM) should have valid authorization certificate for this specific EOI from OEMs of both active and passive components of the LAN to submit the proposal. [The authorization letter must clearly mention that the bidder is authorized to respond in reference to this EoI no. IIT(BHU)/IPCell/2016-17/Networking/EoI/141 dated 19.05.2016 for (name of active/passive components)].
4. The bidder should have at least 3 years of experience for supply, installation, integration, commissioning and management of single campus LAN of minimum 7000 Nodes.

5. The bidder should have executed a single order of 7000 nodes or two orders of 5000 nodes in last three years.
6. The bidder should be ISO certified.
7. All active network devices (Wired, Wireless) and Network Management System (NMS) quoted by the bidder should be from a single OEM only and it should be supported by Single NMS. The NMS should have the capabilities to support the existing Network.
8. The OEM of Active Network Devices to be quoted by the bidder should have deployed in one of the IITs or equivalent educational Institution/ University for LAN with minimum 500 fully managed switches or 7000 Nodes.
9. The OEM of active network devices to be quoted by the bidder should have local Technical Assistance Centre (TAC) support in India through a toll free number and Returned Materials Authorization (RMA) depot in India.
10. The OEM of active network devices to be quoted by the bidder should be present in the country from at least past 10 years.
11. All passive network components quoted by the bidder should be from a single OEM only. The OEM of passive components should provide UL/ETL certification for the full channel link. The Bidder should submit all the required standard reports and certificates of the passive materials failing which the bid will be disqualified. The OEM of passive components should have an experience in supply and execution of minimum 7000 Nodes in one of the IITs or equivalent educational Institution/ University. The supplied passive products should be upgradable to the intelligent cabling system and should have their own solution of Intelligent. The OEM of passive component is required to provide the performance warranty of minimum 25 years from the date of commissioning the LAN.
12. The OEM of passive network components to be quoted by the bidder should be present in the country from at least past 10 years.
13. EOI proposal should have point-wise response to the eligibility criteria along with supporting documents design of proposed LAN and details of proposed product.
14. After evaluation of the EOI proposals, short listed bidder will be called for presentation of proposed network design. They will be asked to do PoC of proposed

NMS with existing network. The tender document for submitting the final technical & commercial bids will be issued to only those short listed bidders who complete the PoC successfully. Decision of the appointed committee in this regard would be final and binding to all concerned.

15. The EOI submitted shall remain valid for acceptance for a period of 150 days from the date of opening of the EOI.

16. IIT BHU, Varanasi reserves the right to cancel this call for EOI at its sole discretion, at any point of time during the purchase process.

(C) Important dates:

1. For any clarification: Please contact Prof. S. Jit (Mob. No. +91-9453364250 and E-mail : sjit.ece@iitbhu.ac.in) on all working days during **3 pm – 5 pm**.
2. Last date for clarification : **06.06.2016**
3. Last date of submission of EOI bid: **11.06.2016 (upto 2:00 pm)**
4. Opening of EOI bids: **11.06.2016 at 3:30 pm** in Ground floor Committee Room, Admin. Building, IIT (BHU), Varanasi. Representatives of EOI bidders can be present during opening of the EOI bids. No further notice will be sent to this effect.

(B) Disqualifier:

1. Non-compliance with any eligibility criteria listed in terms & conditions.
2. Any falsification of supporting data/ claim /proofs /documents provided in the EOI proposal.

Date: 19.05.2016

REGISTRAR

Annexure-I

Existing Network:

IIT BHU has a LAN setup of more than 8000 nodes in academic area and hostels on a gigabit fiber optic backbone as per following:

- Network Cabling: Building to building is fiber optic and within the building is copper (mostly UTP cat6 cable).
- All buildings in academic area and hostels are connected through a fiber optic backbone which is terminated at a core switch in Computer Centre, BHU University.
- I/O nodes in the buildings and hostel are connected to switch. Most of the switches are unmanaged except in 9 hostels which are managed layer2 switch.
- 9 hostels have controller based Access Points (AP) for Wi-Fi connectivity.
- Most of the buildings have un-structured cabling.
- Fiber optic cabling is in ring topology.
- Core switch to access switch connectivity is 4 Tier structure

Proposed Network:

Institute is interested in creating its own fiber optic backbone of minimum 40 Gbps speed and core switch to provide network and internet services to faculty, students and staff. Institute is also interested to upgrade the existing network to state of the art enterprise grade network.

The bidder should design the network as per following requirement:

- The network should be able to provide network and internet services to more than 10,000 users of the Institute without performance degradation.
- The fiber optic backbone should be minimum 40 Gbps speed.
- The backbone fiber optic cable should be terminated at a core switch. The core switch should be chassis based layer 3 with high bandwidth capacity.
- All buildings in academic area and hostels should be connected through a fiber optic backbone in a ring topology.
- Core switch to access switch connectivity should be 3/ 4 Tier structure.
- Distribution/ aggregation switches in the buildings and hostel should be replaced by modular layer3 switches.
- All unmanaged access switches in the departments, hostels and other buildings should be replaced by fully managed layer2 switch.

- All departments, hostels and other buildings should be provided with a high speed Wi-Fi connectivity. The access points (AP) should be controller based meeting IEEE 802.11 ac/Wave2 standards.
- All buildings and hostels should have structured cabling up to node. Best effort should be made to maximize the use of existing cabling.
- Network Management system (NMS) should be provided to manage the whole network.
- Network security system should be provided.
- We also require a network-based intelligent solution to capture and analyse context-based application traffic to deliver meaningful intelligence about applications, users, locations and devices for providing IT with the context to make faster and more effective decisions. The solution should be able to categorize usage pattern for individual network locations (e.g. storage/DMZ/Data Centre//Department/ Hostels etc.) in terms of Bandwidth, types and names of applications used, network and application latency in real time as well as the history of past outputs. It should also be capable to categorise the impact of a new application introduced in the network and its usage. The solution should be natively able to understand all known applications and at the same time it should have options for customization to add internal in-campus applications. The solution is preferable have integration with the NMS where the application usage data can be correlated to the Network devices.
- The proposed solution should provide an authenticator for all AP and clients. It may have built in authentication server. It should be able to interact / authenticate with all types of proxy / authentication server. The Authentication system should support user validation, device / OS fingerprinting and provisioning of network resource (VLAN / Rate limit / ACL) regardless of the make of Network Devices. The authentication mechanism should also support Guest Management system with Captive portals. It should be possible to use a single SSID to bifurcate between valid users with valid device / guest / mobile devices and redirect them to their individual portals.
- The bidder has to provide network management services on 24x7, 365 days basis by professionally qualified persons.
- The proposed solution should provide unified threat management (UTM) system which should be capable of supporting at least 3 Internet links of 1.0 Gbps or more with high throughput and high availability.