EXPRESSION OF INTEREST (EOI)
FOR ESTABLISHMENT OF WI-FI NETWORK IN
TEZPUR UNIVERSITY CAMPUS

EoI No: TU/11-24/Pur/Qtn/2015/2023
Date: 28/08/2015

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1. INTRODUCTION

About

Tezpur University was established on January 21, 1994 as per the Tezpur University Act, 1993 enacted by the Parliament. Currently, the University offers 63 carefully chosen academic programmes through 19 departments under the Schools of Engineering, Humanities & Social Sciences, Management, and Sciences. The University also offers 11 programmes under its open and distance mode. With 3300 students, 240 faculty members and 270 administrative and technical personnel, the University today is a hub of quality activities in higher education and research.

Location

The 262-acre sprawling campus of the University sits amidst serene surroundings at Napaam, about 15 km east of Tezpur town in the Sonitpur District of Assam.

How to reach

Tezpur is connected by air, rail and road. It is about 3.5 Hrs. drive from Guwahati, the capital city of Assam. While air connectivity is available from Kolkata and Guwahati, deluxe bus services (both day and night) are available from Guwahati and other important cities and towns of the region.

2. OBJECTIVE OF THE PROPOSED WI-FI NETWORK

The objective of this Expression of Interest (EoI) is to set up a modern state-of-the-art Wi-Fi Network Facility in the Tezpur University Campus with IEEE 802.11n & IEEE 802.11ac standard based Wireless Routers/ Access Points(APs)/ Controllers, etc. The Wi-Fi solution may be proposed with either Outdoor or Indoor type Wi-Fi devices or with a combination of both to get optimum coverage area with minimum devices and must support secure and reliable network access to data, voice and video applications for students, faculty, staff and visitors as well.

- The proposed Wi-Fi Network solution should support different type of user devices and gadgets ranging from Desktops, Laptops, Tabs, Smartphones, etc.
- There should have a provision of Centralized Management, Control, Configuration of proposed devices like Switches, Controllers, APs, Routers, etc.
- The Wi-Fi Network should be seamlessly integrated with the existing Campus LAN and all services thereof.
- The solution should also be scalable for future demands for high bandwidth networks.
- The solution should effectively load balance traffic during peak usage period.
- There should be a suitable security mechanism to detect / protect un-authorized access to the network.
- There should be a mechanism to log and report activities performed by Wi-Fi clients over certain period of time.

3. SCOPE OF WORK

The scope of the proposed Wi-Fi Network is to provide secure wireless LAN access at various locations (see Annexure—A for Wi-Fi coverage requirement map) in the Tezpur University Campus. The solution
must have adequate Wi-Fi infrastructure to cover about 4100 users among which 3500 are from student community. It should be designed and implemented in such a way that all of the user gets reliable Wi-Fi signal strength and there should not be any shadow zones in the campus. There should be easy seamless roaming facility available amongst different Wi-Fi hotspots in the campus and all user terminals/gadgets must be configurable on the go by use of captive portals.

The Proposed Wi-Fi Network should include but not limited to;

- Supply, configuration and installation of the state of the art Wi-Fi Network.
- Seamless integration with the University’s existing LAN.
- Provisioning the access control and audit trail mechanism as per industry standard and security norms defined by various regulatory bodies.
- Provide the web based management capability to monitor and manage the Wi-Fi Network.
- Facility to define rule/role based access depending on group, usage, time duration, etc.
- Filter/Restrict Wi-Fi access based on URL, application, category, content, signature, etc.
- Provision for customizable reports for Wi-Fi Access based on IP Address, MAC Address, User Login-ID, etc.
- Facility to blacklist specific user/system from Wi-Fi Access in case of violation of any security policy.

4. WI-FI COVERAGE PLAN

A. Areas to be covered (See Annexure –A for Wi-Fi coverage map)

Following areas are currently devoid of or have poor Wi-Fi connectivity:

<table>
<thead>
<tr>
<th>Area</th>
<th>Zone</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Academic</td>
<td>School of Engineering Complex [Departments: Civil, FET, Workshop, ME, Dean SoE Office &amp; Lect. Hall, CSE, ECE, SoE Canteen]</td>
</tr>
<tr>
<td>2</td>
<td>Academic</td>
<td>HSS Academic Complex (Departments: Education, Social Works, Cultural Studies, Sociology, Hindi, EFL)</td>
</tr>
<tr>
<td>3</td>
<td>Academic</td>
<td>School of Management Sciences Complex (Departments: Business Administration, Commerce)</td>
</tr>
<tr>
<td>4</td>
<td>Academic</td>
<td>Proposed Academic Complex Plot to be ready by 2016</td>
</tr>
<tr>
<td>5</td>
<td>Academic + Other</td>
<td>Administrative &amp; Academic Complexes (Departments: MCJ, MBBT, Env. Science, Energy, Chemical Sciences, Mathematical Sciences, Physics), Computer Centre1, Central Library, SAIC, Student Activity Centre, Community Hall, Cafeteria, Auditorium, Shopping Complex</td>
</tr>
<tr>
<td>6</td>
<td>Academic + Other</td>
<td>Acad-I Complex &amp; CP Saikiani Hall</td>
</tr>
<tr>
<td>7</td>
<td>Hostels</td>
<td>Hostels 8 Nos. (NWH, CMH, NMH, KMH, DWH, PWH BWH, SWH) + Warden Qtrs.</td>
</tr>
<tr>
<td>8</td>
<td>Hostels</td>
<td>Proposed Hostel Plot to be ready by 2016</td>
</tr>
</tbody>
</table>
### Residential + Hostels

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Residential Colony including Transit Hostels</td>
</tr>
<tr>
<td>C</td>
<td>Residential Colony including Transit Hostels</td>
</tr>
<tr>
<td>D &amp; E</td>
<td>Residential Colony + Research Hostel</td>
</tr>
<tr>
<td>B AT</td>
<td>Residential Colony</td>
</tr>
<tr>
<td>Other</td>
<td>Residential + Other</td>
</tr>
<tr>
<td>VC</td>
<td>Bungalow &amp; VVIP Guest Room</td>
</tr>
</tbody>
</table>

### Areas not to be covered

*See Annexure –A for Wi-Fi coverage map*

Following areas are currently de-void of or have poor of Wi-Fi connectivity

<table>
<thead>
<tr>
<th>Area</th>
<th>Zone</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Visitor</td>
<td>Guest House</td>
</tr>
<tr>
<td>16</td>
<td>Hostels</td>
<td>Hostels (2 Nos.) – PMH &amp; KWH</td>
</tr>
<tr>
<td>17</td>
<td>Hostels</td>
<td>Hostels (2 Nos.) – CVRMH &amp; PMCWH</td>
</tr>
</tbody>
</table>

### 5. TECHNICAL SPECIFICATIONS OF WIRELESS COMPONENTS

#### A. Wireless Controller

- Support up to 20,000 concurrent devices
- 10 Gbps (upgradable to 40Gbps) uplink to the Core Network
- Four 10Gbps SFP+ Ports
- One Console Port
- One USB 2.0 Port
- Support authentication, encryption, Firewall, L3 Services, wireless intrusion protection
- Multicore CPU with Solid State Drives
- RF Spectrum analysis and management
- Support up to 1000 Access Points
- 4094 VLANS
- Must be IPv4 and IPv6 ready
- Redundant Power Supplies

#### B. Wireless Access Point

- Must be Indoor or Outdoor type depending on deployment scenario.
- Must have dual band single/ dual radio and must able to operate in 2.4GHz and 5GHz frequency band so as to provide effective throughput and scalability in high density environment.
- Should support Data Rates of up to 300 Mbps or more per Radio.
- The Access Point should ensure simple, secure interoperability with other 802.11 devices and should be Wi-Fi 802.11n/ac certified.
• The AP should have enterprise-grade capabilities such as AP auto discovery, 802.1X authentication, role- and device-based policy enforcement, rogue AP detection and RF Management and Failover.

• The AP Should Support WPA-2 Enterprise class security interoperable with devices supporting -
  o WPA Enterprise
  o Both (WPA-2 & WPA)
  o Dynamic WEP with 802.1x

• APs should support IPv4 and IPv6 protocols.

• Supports up to 12/24 non-Overlapping Channels for Single/Dual radio.

• Should have provision for external antenna connectors supporting MIMO Technology.

• Should have 1000BASE-T autosensing (RJ-45) Ethernet Port and Management console port

• The Access Points should be powered using PoE 802.3af standard over Cat 6 cable.

• Should have in-built surge & lightning protection.

C. Network Management System

There should be a comprehensive Network Management System (NMS) to monitor and manage Wi-Fi devices. The NMS must be easily accessible via web based terminal and manageable from anywhere in the campus. It should carry full production license for all deployed active Wi-Fi devices.

6. TERMS & CONDITIONS

• The Bidder should be Proprietary Firm or Partnership Firm or Pvt. Limited or Limited Company (Deed of Constitution/ Registration Certificate to be enclosed) and should have a local support center in the Guwahati/ Tezpur(Documentary evidence must be provided).

• Only the Original Equipment Manufacturer (OEM), Authorized System Integrators/ Authorized Partners either directly or through their System Integrator operating in India (Prerably in Guwahati) are eligible to participate. In case of bidding through system integrator, the OEM must give a “Letter of Authorization” against this EoI.

• Bidder should have ISO 9001:2008 Certificate.

• An Annual Turnover of Rs. 3 Crores and above must be shown for last 3(three) financial years (Documentary evidence must be provided).

• All Software, Hardware and Network components must be preferably from single OEM however bidder can choose different OEM for non-Wi-Fi components provided it meet the standard specifications.

• A “Product No Obsolescence Certificate” from OEM must be provided against all the products quoted in the solution.

• The Bidder should have a track record of executing at least two Wi-Fi projects of value not less than Rs. 50 Lakhs each. (Copies of Work Orders along with satisfactorily competition reports shall have to be submitted in this regard).

• Bidder should have the experience of minimum 5 years in the field of establishment of Networking & Wi-Fi. (Work Orders copy in support to be enclosed indicating experience of at least five years in similar line)
• The Bidder should not be Blacklisted or involved in any Corrupt & Fraudulent Practices by any Central/State Govt./Ministry/Affiliate or Public sector undertaking/University.

• All active hardware equipment must carry **comprehensive warranty of one year** from the date of installation. **Extended warranty for 2nd and 3rd year** must be quoted separately.

• **Post warranty Annual Maintenance Contract (AMC)** must be quoted as a percentage of equipment costs.

• All other jobs required for successful commissioning of the project must be included in the EoI; like -
  - Supply of passive components like cables, racks, panels, etc.,
  - Erection of mast/towers,
  - Supply & fixing of mountings,
  - Supply and installations of Copper & Fiber Optic Media,
  - Provision of power backup using online UPS as per requirement, etc.

• The EoI has to be submitted along with a **non-refundable Participation Fee of Rs. 5000/-** and **fundable amount of Rs. 50,000/-** through DD drawn in favour of Registrar, Tezpur University - as **EMD**. EoI without participation fee and EMD would be summarily rejected.

• **Last date of submission of EoI 03/09/2015**

  Dy. Registrar,
  Tezpur University
1. School of Engineering Complex [Civil, FET, Workshop, ME, LectHall, CSE, ECE, Canteen]

2. HSS Academic Complex (Education, SocWorks, CulSt, Socio, Hindi, EFL)

3. School of Management Sciences

4. Proposed Academic Complex Plot to be ready by 2016

5. Administrative & Academic Complexes (MCJ, MBBT, EnvSc, Energy, ChemSc, MathSc, Physi cs), Computer Centre1, Central Library, SAIC, Student Activity Centre, Community Hall, Cafeteria, Auditorium, Shopping Complex)

6. Acad-I Complex & CPS Hall

7. Hostels (8 Nos.) + Warden Qtrs.

8. Proposed Hostel Plot to be ready by 2016

9. Type-B Residential Colony + Transit Hostels

10. Type-C Residential Colony + Transit Hostels

11. Type-D & E Residential Colony + RS Hostel

12. Type-B AT Residential Colony

13. HC, Residential Complex, Main Gate Reception

14. VC Bunglow & VVIP Guest Room

15. WiFi Covered Guest House

16. WiFi Covered Hostels (2Nos.)

17. WiFi Covered Hostels (2Nos.)

Annexure - A

Wi-Fi Coverage Requirement Map:: Tezpur University