

**EXPRESSION OF INTEREST (EOI) FOR
ESTABLISHMENT OF WI-FI NETWORK IN
Institute of Mathematics and Applications
CAMPUS**

Letter No: IMA/11/77/2018

Date: -- 13-03-2018

Institute of Mathematics and Applications

Andharua, Bhubaneswar, Odisha. 751029.

1. INTRODUCTION

About

The Institute of Mathematics and Applications was established by the Government of Orissa in the year 1999, vide the Resolution of the Government of Orissa, Science and Technology Department letter no. 368-ST-I (SC) - 159/98 dated 31st May 1999 with wide ranging aims and objectives as notified in the Gazette No. 18, July 23, 1999 / SRAVANA, 1, 1921. The Institute has been registered on 28th March 2000 under provision of Registration of Societies Act 1860 with Registration No. 20851 /187 of 1999-2000. In the last several years since its inception, consistent with its aims and objectives, it has been active in searching and nurturing talents in mathematics by organizing training and interactive camps for successful students in various mathematical Olympiad tests. It has engaged itself in exploring the applicability of mathematical ideas in exotic areas of studies such as studies on heat wave, cyclone, wetland management etc., besides its engagement in traditional research in various disciplines of mathematics. It has become a centre where local mathematicians avail the opportunity to interact with the mathematicians from within the country and abroad. Impressive activities of the Institute and its potential have persuaded the State Government to graciously lease to the Institute a piece of land measuring about twenty one acres on which the TATA Steel Ltd. is constructing a campus for the Institute.

Location

<http://iomaorissa.ac.in/location.php>

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 Institute of Mathematics and Applications 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.

2. SCOPE OF WORK

The scope of the proposed Wi-Fi Network is to provide secure wireless LAN access at various locations in the Institute of Mathematics and Applications Campus. The solution must have adequate Wi-Fi infrastructure to cover about 1000 users among which 800 are from student community. It should be designed and implemented in such a way that the entire users get 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 Institute's existing network.
- 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.

5. TECHNICAL SPECIFICATIONS OF WIRELESS COMPONENTS

A. Wireless Controller

- Support up to 10,000 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 - WPA Enterprise, Both (WPA-2 & WPA), 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

- Sealed bids are hereby invited for the work of “ESTABLISHMENT OF WI-FI NETWORK in Institute of Mathematics and Applications CAMPUS.”, from Contractors, those who have worked in any Govt./Semi Govt. organizations and have successfully carried out minimum one/two/three similar work during the last five years. The eligible contractors may submit their bid along with supporting documents of fulfilling the above conditions otherwise their bids bear the risk of not being considered. The eligible contractors are also required to submit the self-attested copies of PAN card, registration and GST certificate. In support of fulfilling all the essential conditions mentioned, the contractor shall submit the details of the past work, mentioning the name of work, estimated cost, tendered amount, gross value of work done, date of commencement as per agreement & actual date of completion as per agreement along with schedule of quantities executed and any penalty levied due to delay in executing the work.
- 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 centre in the Bhubaneswar (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 (Preferably in Bhubaneswar) 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.
- 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.
- The Bidder should have a track record of executing at least two Wi-Fi projects of value not less than Rs. 10 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, tc., Erection of mast/ towers, Supply & fixing of mountings,
 - ✓ Supply and installations of Copper & Fibre Optic Media,
 - ✓ Provision of power backup using online UPS as per requirement, etc.
- **Before bidding, the bidder shall inspect the site to fully acquaint himself about the condition in regard to accessibility to site, nature and extent of ground, working condition of site and locality including stacking of materials, conditions affecting accommodations and movement of labour, etc., which are required for satisfactory execution of the work. No ignorance of the same, whatsoever shall be entertained under any circumstances.**
- Director of IMA, Bhubaneswar does not bind himself to accept the lowest or any tender and reserves the right to accept the tender either in whole or in part. The decision of the Director shall be final in this regard.
- Bid documents are to be submitted in a sealed cover. The documents in support of eligibility criteria along with the bid should be covered in a single envelope super scribing the name of work, address of contractor and date of opening. **Bids complete in all respects, will be accepted up to 3.30 PM on 03-03-2018. The bid shall be opened at 4.00 PM on 03-03-2018.**
- Bid applications should reach by regd. /speed post to **“The Director, Institute of Mathematics and Applications, Andharua, Bhubaneswar, Odisha, PIN: 751029”**. To ensure that the same reaches before the date and time indicated above. Late or delayed tenders are liable for rejection.
- Canvassing in any manner or form will lead to rejection of the Bid.
- The Bid shall remain valid for a minimum period of 90 days from the date of opening of the tender for the purpose of acceptance and award of work. Validity beyond 90 days from the date of opening shall be by mutual consent.
- Stores to be issued: - No material shall be issued by the Institute.
- The successful bidder will be required to submit the names, qualifications and experiences of the supervising staff to be deployed for execution of the work. In case of any changes occurring during the course of execution of the said work, the same shall also be intimated by the bidder to the institute.
- The Contractor shall have to make his own arrangements for storage of materials required for execution of the work at IMA, Bhubaneswar.
- All the mandatory testing charges will be borne by the contractor
- Last date of submission of EoI 03/03/2018

**DIRECTOR
IMA, Bhubaneswar**