NATIONAL INSTITUTE OF BIOMEDICAL GENOMICS

P.O.: N.S.S., Kalyani 741251, West Bengal, INDIA

(An autonomous institute of Government of India Department of Biotechnology)

Telephone: +91-33-25892151 Website: https://www.nibmg.ac.in

NIT No.: NIBMG/Campus Network 2nd Phase/2019-20/71 **Date: 6th March 2020**

TENDER NOTICE

Sealed tenders in duplicate under two cover system are invited from experienced and resourceful bidders who fulfill the eligibility criteria for participation in the tender process for setting up campus network (2nd phase) in the campus of National Institute of Biomedical Genomics, Kalyani, West Bengal. The job includes supply, installation, testing, commissioning and warranty of the items mentioned in the price bid: Part C section of the tender document.

SL. No.	Name of the work	Estimated Cost (₹) (*including GST)*	Completion time in days	Earnest Money (₹)
1.	Setting up campus network (2nd phase) in the campus of National Institute of Biomedical Genomics, Kalyani, West Bengal.	45 Lakhs	60 days	90,000/-

Earnest Money will be accepted in the form of Bank Draft drawn in favour of the 'NATIONAL INSTITUTE OF BIOMEDICAL GENOMICS', payable at Kolkata from any Nationalized Bank. EMD of the unsuccessful bidders will be released after issuing the work order against their written request.

Intending Bidders may kindly visit the Institute website www.nibmg.ac.in for downloading the tender documents and for other details.

Manager (Administration)

Instructions for Bidders: Part A

NIT No.: NIBMG/Campus Network 2nd Phase/2019-20/71, dated: 6th March 2020

A) Terms and Conditions:

Price

i) Rate should be inclusive of all other taxes, duties as on date, levies, insurance, transport cost etc. except GST. GST will be paid extra as actuals at the rate prevailing at the time of invoicing. Prices quoted should be on turnkey basis inclusive of all supplies, installation & commissioning, testing at site & site handover. All quoted prices should be valid till 60 days after the date of tender opening. Quantities in BOQ are tentative. Payments will be made on basis of actual measurements.

ii) New imposition of taxes and variations, if any, will be borne by the Contractor, except GST, which will be paid as per actual.

iii) **Performance Bank Guarantee:** Performance Guarantee amounting to 10% (Ten per cent) of the Contract value is to be submitted within 10 (Ten) days in terms of Bank Guarantee from the date of issue of the valid and acceptable work order. It will remain valid up to 62 months from the date of issuing of work word.

v) **Certificate of Completion:**

a) On successful completion of the job, the contractor should issue a "Completion Certificate" to NIBMG and competent authority of NIBMG will give his written acceptance after due inspection of the job vis-à-vis the work order.

b) The contractor before submitting the completion certificate will make sure that the site is clear of all debris/scrap, excess materials, scaffolding etc. He should make good of any damage caused to any NIBMG asset during his execution of the work order failing which NIBMG may get it done at the cost and risk of the contractor.

vi) **Testing and Handing over / Taking over (HOTO):**

a) The Contractor shall carry out test functioning of equipment supplied by them after obtaining clearance of statutory authorities' for powering up of installations, in the presence of representatives of NIBMG to establish satisfactory functioning of equipment.

b) The equipment shall be handed over to the representatives of NIBMG after satisfactory commissioning, duly permitted by the statutory authorities, along with 4 (four) sets of completion documents each consisting of:

i) Detailed equipment data and catalogues with all Test Reports.

ii) Manufacturer's maintenance manual including trouble shooting & preventive maintenance chart.

iii) Warranty Certificates from both the Active and Passive OEMs.

iv) Certificate from the Engineer that the Contractor has cleared the site of all debris and litter caused by them during the construction.

c) Submission of the above documents shall form a precondition for the final acceptance of the system. Final acceptance will be recorded in the HOTO document and signed by the Systems Analyst of NIBMG and the vendor. Final payment will be released only after signing of the HOTO document.

B) **Payment Terms:**

i) No mobilization Advance will be paid.
ii) 70% payment will be made upon successful completion of delivery of the hardware.

ii) Remain 30% payment will be made on the basis of actual execution after submission of RA bill, not less than 50% of the remaining work order value for the first bill on the corresponding item. The final payment of last 15% shall be made after successful execution and handing over of the completed work to the Institute Authority.

C) **Other Terms and Conditions**

i) **Site visit** – Bidder may visit the Institute on or before 20th March 2020 to know about the existing network setup, hardware, software and their connectivity.

ii) **Storing of materials** –NIBMG will provide covered space only for storing of all materials awaiting installation. Safety (from moisture and other physical damage) and security from theft etc. will be sole responsibility of the contractor.

iii) **Warranty** – 5 Years onsite comprehensive warranty for Active hardware and 25 years onsite comprehensive warranty for passive hardware.

iv) **Delivery, Installation and Commissioning** – within 60 days from the date of order (with accepted commercial terms), Delivery, Installation and Commissioning should be completed in all respect.

v) The contractor shall take necessary action to fulfill all applicable statutory obligations as required to execute the work.

vi) The work order can be terminated if any of the contract terms are violated, by giving 7 (Seven) days' notice from the competent authority of NIBMG at any stage of work.

vii) All disputes arising out of or in any way connected with this work order shall be deemed to have been arisen in Kolkata and only the Court in Kolkata shall have jurisdiction to determine the same.

ix) Insurance**:** Valid insurance papers for the site engineers and workers covering accident related expenditures/claims should be submitted at the time of deployment at site.

x) It may please be noted that this Institute is exempted from paying of customs duty (as per custom rule, only concessional custom duty will be charged), excise duty and reduced rate of GST by **DSIR**, Govt. of India.

xi) Tender will have to be submitted in two parts – Cover-I Technical Bid & Cover- II Price Bid separately sealed and superscripted with the name of work.

Cover-I: Cover-I (Technical Bid) shall contain Earnest Money, all documents supporting fulfillment of eligibility criteria & commercial & general stipulations mentioned in the Tender Documents.

Cover-II: Cover-II (Price Bid) shall contain the complete tender documents duly filled. No condition stipulated in Cover-II other than general rebates shall be accepted. The Price Offer of the prospective tenderer/bidder will be considered only if the Technical Bid of the tenderer is found qualified by the 'Tender Evaluation Committee' of NIBMG. The decision of the 'Tender Evaluation Committee' will be final and absolute in this respect.

xii) **Tenders (Cover-I & Cover-II put in a separate sealed cover) will be received up to 2:00 PM on 27th March 2020 and will be opened on the same day at 3-00 PM** in the office of the Manager (Finance), National Institute of Biomedical Genomics, P.O. N.S.S, Kalyani 741 251, West Bengal in presence of the contractors or their authorized representatives who may like to be present. **Cover-II** (Price Bid) of the bidders who qualify in Technical Bid evaluation will be opened on the same day in presence of bidders, as finalized by NIBMG and displayed in website. The Institute reserves the right to reject any or all of the tenders received without assigning any reason thereof.

	BIDDER INFORMATION:		
1	Name of Firm		
2	Address of Organization in Kolkata		
3	Established on		
4	Statutory Registration Nos.		
	a) GST Registration No.		
	b) Professional Tax Registration certificate		
	c) Income Tax PAN Card No.		
	d) Valid Trade License Certificate		
	Any other No., Please specify		
5	Name of the authorized signatory		
6	Specimen Signature of the Authorized signatory.		
7	Telephone Number of the authorized signatory and other Telephone Number of the firm.		
8	Details of the works executed during the last 3 years. Copies of work orders may be enclosed.	Year	Rs.
9	Whether proof/copies of work order on items at Sl. No. 8 enclose (Yes/No)		
10	List of copies of documents enclosed.		

DECLARATION BY VENDOR/SERVICE PROVIDER

(To accompany the Technical Bid)

I confirm that:-

1) I, _____ Son / Daughter / Wife of Shri ___ Proprietor/Director/Partner/Manager Resident of _____, authorized signatory of the Agency/Firm, _____, am competent to sign this Declaration and execute this application document.

2) No employee or direct relation of any employee of NIBMG is in way connected as Partner /Shareholder/Director/Advisor/Consultant/Employee etc. with the Company.

3) The information furnished is correct to the best of my knowledge and belief.

4) I have read and understood the general instructions to vendors and undertake to abide by the same.

. …….. (Signature of Proprietor/Partner/Chief Executive) Name …….
(In Capital Letters)

Place: …… (Seal of Service Provider)

Date: ……

PROFORMA FOR AGREEMENT BETWEEN THE NIBMG AND CONTRACTOR
(On Non-Judicial Stamp Paper of Rs.100.00)

ARTICLES OF AGREEMENT made this …… day of ……Two Thousand Eighteen between the National Institute of Biomedical Genomics, an Autonomous Institution of Govt. of India at Gayeshpur, Kalyani, West Bengal (hereinafter referred to as "the OWNER") which expression shall include its successor or successors and assigns) of the ONE PART through the authorized officer.

AND

M/S. …… having its registered office at ……. (there in after referred to as the 'CONTRACTOR') of the OTHER PART.

WHEREAS the Owner is desirous of ……(here in after called the 'Works').

AND WHEREAS the Owner has cause the plans, drawings and specification, priced schedule of quantities of work to be executed at the New campus of National Institute of Biomedical Genomics at Kalyani, West Bengal as per conditions of the contract and special conditions prepared subject to which the offer of the Contractor shall be accepted.

AND WHEREAS the tender of the Contractor for the said ……..has been accepted.

WHEREAS the contractor has deposited with the Owner Rupees …… (Rupees ……..) as Performance Guarantee for the due performance of agreement. AND WHEREAS the Owner has issued work order there for to the contractor.

AND WHEREAS said drawings ……(here in after collectively referred to as the said condition) have been signed by the parties here to and the contractor has agreed to execute the works upon and subject to the said conditions.

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of payments to be made to the contractor as hereinafter provided the contractor shall upon and subject to the said conditions execute and complete the works shown upon the said drawings etc. and such further detailed drawings as may be furnished to the contractor by the said owner as described in the said specifications and the said priced schedule of quantities.
2. The Owner will pay to the Contractor the sum of Rs. …….. (Rupees……) (hereinafter called the contract sum) or such other sum as shall become payable hereunder at the times and in the manner specified in

the said conditions. However, the actual sum will be paid on the actual value of work done, irrespective of the contract sum.

3. The plans, agreement and documents above mentioned shall from the basis of this contract and dispute, if any to be decided in the manner prescribed in the conditions attached hereto.
4. The said contract comprises the ……..in the upcoming campus of National Institute of Biomedical Genomics at Kalyani works as above mentioned, and all subsidiary works connected therewith within the same site as may be ordered to be done from time to time by the said Owner even though said works may not be shown on the drawings or described in the said specifications or the priced schedule of quantities.
5. Notwithstanding what are stated in the special condition, conditions of contract and hereinbefore stated the owner reserves to himself the right to alter the drawings and nature of the work and of adding to or omitting any items of works from or of having portions of the same carried out departmentally or otherwise and such alternations or variations shall be carried out without prejudice to this contract.
6. The said conditions in the Agreement tender documents, work order and other related documents shall be read and be treated as forming part of this agreement and the parties hereto will respectively be bound thereby and to abide by and submit themselves to the conditions and stipulations and perform the same on their to be respectively observed and preferred.
7. Any dispute arising under this agreement shall be referred to the arbitration of a sole arbitrator appointed with consent of the Owner and the contractor as indicated in the Article of the general conditions. The award of the arbitrator shall be final and binding on both parties.

   IN WITNESS WHEREOF, the parties hereto have executed these presents the day and year first hereinabove written.

WITNESS	**EXECUTANTS**
1.	1. OWNER
2.	2. CONTRACTOR

* Common Seal

*In case of the company, the common seal be affixed pursuant to resolution of Board of Directors in accordance with Articles of Association of the Company the directors etc. as the case may be affixing common seal may be initial in token thereof and also by putting their names.

Manufacturer's Authorization Form (MAP)

No. _____ Dated_____

The Director
NIBMG
Kalyani

Dear Sir,

Tender Reference_____

We _____ who are established and reputable manufacturers of _____ having factories at _____ and _____ do hereby authorize M/s _____ (Name and address of Agent/Dealer) to offer their quotation, negotiate and conclude the contract with you against the above invitation for tender offer.

We hereby extend our full guarantee and warranty as per terms and conditions of the tender and the contract for the equipment and services offered against this invitation for tender offer by the above firm.

Yours faithfully,

Authorised Signatories

(Name & Designation)

Date:

for and on behalf of M/s_____

(Name of manufacturer)

(Company Seal)

Note: This letter of authority should be on the letterhead of the manufacturing concern and should be signed by a competent person of the manufacturer.

Technical Bid: Part B

NIT No.: NIBMG/Campus Network 2nd Phase/2019-20/71, dated: 6th March 2020

Eligibility Criteria for the Bidders:

Sr #	Eligibility Criteria	Compliance with Document
1	Bidders must have registered office and service center in Kolkata at least for last 3 years.	
2	Must have 24x7 call registering portal/Phone no.	
3	Manufacturer Authorisation Form/certificate for this particular tender from both the Active OEM	
4	Manufacturer Authorisation Form/certificate for this particular tender from Passive OEM	
5	Yearly Turnover of Bidder for FY: 2016-17, 2017-18 and 2018-19	
6	Credentials: One work order for similar kind of job of value 36 lakhs or above in last 3 years. OR Two work orders for similar kind of job of value 27 lakhs or above in last 5 years	
7	EMD details. Must attached a Photostat copy of the Demand draft	
8	Self-attested copies of the following documents must be enclosed with the application: Sales Tax Registration No, Service Tax Registration No., Permanent Account No, valid Trade License, Professional Tax certificate and GST registration No.	

Eligibility Criteria for Active OEM:

1	All the proposed active networking product mentioned in ANNEXURE - 2 must be from the same OEM	
2	OEM needs to be a part of Gartner Leaders Quadrant for the relevant area for last 3 consecutive years.	
3	All the proposed items must support the existing active hardware and software listed in Annexure -1	
4	Offered products must include 5 years of onsite comprehensive warranty support.	
5	All the above points must be ensured by the OEM and need to submit an original certificate as a supporting document.	

Eligibility Criteria for Passive OEM (excluding Network RACK):

Sr #	Eligibility Criteria	Compliance with Document
1	Passive OEM offered must be in steady profitable business in India for more than at-least 15 years.	
2	OEM should be a member of Telecommunications Industry Association (TIA) committee. Membership shall be available for verification at 0	
3	All components shall be ROHS compliant. Declaration of ROHS shall be available in product datasheets.	
4	OEM shall have RCDD certified technical manpower in India and local technical manpower in the region of project implementation.	
5	OEM shall have ISO 9001:2008 and 14001 certified copper and fiber components manufacturing facility in India.	
6	Offered products must support 25 years of application warranty for end to end channel.	
7	All the proposed items must support the existing passive networking hardware listed in Annexure -1	

Annexure - 1

Details of existing networking hardware & Software - Active

TYPE	**Make & Model**
Core Switch	HP 5900AF-48XG-4QSFP+ Switch
Distribution Switch for Main Building	HP 5800-24G-SFP Switch w 1 Intf Slt
Distribution Switch for other Buildings	HP 5800-24G-PoE+ Switch
24 Port Access Switch Type	HP 5130-24G-PoE+-4SFP+ EI Switch
48 Port Access Switch Type	HP 5130-48G-PoE+-4SFP+ EI Switch
Data Network & Server Farm Switch	HP FF 5700-32XGT-8XG-2QSFP+ Switch
Wireless Controller (WLC)	HP 870 Unified Wired-WLAN Appliance
Wireless Access Points	HP 560 Wireless 802.11ac (WW) AP
HPE Intelligent Management Center, (IMC) [Intelligent Management Platform (JG747AAE)]	JG747AAE (iMC PLAT 7.3)

Details of existing networking hardware - Passive

24 Port Fiber Optic LIU	TE connectivity 3-2122145-3
12 Port Fiber Optic LIU	TE connectivity 3-2122145-2
CAT 6A UTP Information Outlet	TE connectivity 2225212-1 (faceplate), TE connectivity 13757224 (cat 6a jack)

24 Port CAT 6A UTP Patch Panel	TE connectivity 1467291
Single Mode Fiber Optic Patch Cords	TE connectivity 6536508-3
Single Mode Fiber Optic Patch Cords	TE connectivity 6348260-3

ANNEXURE - 2

TECHNICAL SPECIFICATIONS OF PROPOSED SOLUTION

I 48 port L2 PoE Ethernet Switch

Sl. No.		Compliance Yes / No	Cross reference (Name of the document with page number)
1	48 x 10/100/1000 Mbps PoE + ports (RJ-45 autosensing)		
2	Shall have minimum 4* SFP slot in addition to above ports		
3	1 RJ-45 (serial RS-232C) or USB console port		
4	switching capacity of 104 Gbps for providing non-blocking performance on all Gigabit ports		
5	77 million pps switching throughput to achieve wire-speed forwarding on all Gigabit ports		
6	Minimum POE budget 380W		
7	IEEE 802.1D Spanning Tree Protocol, IEEE 802.1w Rapid Spanning Tree Protocol and IEEE 802.1s Multiple Spanning Tree Protocol		
8	IEEE 802.3ad Link Aggregation Control Protocol (LACP) up to four links (ports) per group		
9	Shall support Virtual stacking to provides single IP address management for up to 8 switches		
10	MAC address table size of minimum 16000 entries		
11	Support up to IEEE 802.1Q (4,000 VLAN IDs) and 512 VLANs simultaneously		
12	Support GARP VLAN Registration Protocol or equivalent feature to allow automatic learning and dynamic assignment of VLANs		
13	Internet Group Management Protocol (IGMP)		
14	Multicast Listener Discovery (MLD) snooping		
15	IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and LLDP-MED (Media Endpoint Discovery)		
16	Should support dual stack(Ipv4 and Ipv6)		
17	Access Control Lists for traffic filtering, should support minimum 1K access control entries		
18	Source-port filtering or equivalent feature to allow only specified ports to communicate with each other		

19	Should support Traffic prioritization		
20	Shall support traffic rate-limiting per port		
21	IEEE 802.1x to provide port-based user authentication with multiple 802.1x authentication sessions per port		
22	Media access control (MAC) authentication to provide simple authentication based on a user's MAC address		
23	Port security to allow access only to specified MAC addresses		
24	STP BPDU port protection to prevent forged BPDU attacks		
25	Configuration through the CLI, console, Telnet, SSH and browser-based management GUI (SSL)		
26	SNMPv1, v2, and v3 and Remote monitoring (RMON) support		
27	TFTP and Secure FTP support		
28	RADIUS/TACACS + for switch security access administration		
29	Simple Network Time Protocol (SNTP) or equivalent support		
30	Shall support IEEE 802.3az Energy- efficient Ethernet (EEE) to reduce power consumption		
31	Operating temperature of 0°C to 45°C		
32	Safety and Emission standards including EN 60950; IEC 60950; VCCI Class A; FCC part 15 Class A		
33	OEM should be leaders in Gartner magic quadrant report since last three years (wired and wireless)		

II	**Wireless Controller**		
Sr. No	**Specifications**	**Compliance Yes / No**	**Cross reference (Name of the document with page number)**
1	WLC must be compliant with IEEE CAPWAP or equivalent for controller-based Wireless LANs(WLANs)		
2	WLC should be dedicated appliance with support for upto 250 Access points. Should have minimum 2 nos. 10 Gig SFP+ ports and 2x dual SFP ports to connect to LAN.		
3	WLC should support minimum 8000 concurrent devices.		
4	WLC should support min 10 Gbps of throughput		
5	Should support redundancy model like 1+1		
6	Radio coverage algorithm must allow adjacent WAPs to operate on different channels, in order to maximize available bandwidth and avoid interference		

7	Should support coverage hole detection and correction that can be adjusted on a per WLAN basis.		
8	Should support RF Management with 40, 80 & 160 MHz channels		
9	Should support Access Control Lists (ACLs).		
10	Should support built-in web authentication		
11	Should be able to set a maximum per-user bandwidth limit on a per-SSID basis.		
12	Should provide Mesh capability for Mesh supported AP		
13	Must support client roaming across controllers separated by a layer 3 routed boundaries.		
14	Must support AP over-the-air packet capture for export to a tool such as Wireshark/equivalent		
15	Should support spectrum analysis and able to classify different types of interference.		
16	Should provide multiple real-time charts/log showing interferers per access point, on a per- radio, per-channel basis.		
17	System should provide fast Fourier transform (FFT) displays and spectrograms for real-time troubleshooting and visualization. Any specialized hardware and software required for the same should be provide by the vendor.		
18	Support for configuring media streams with different priority to identify specific video streams for preferential quality-of-service treatment.		
19	To deliver optimal bandwidth usage, reliable multicast must use single session between AP and Wireless Controller.		
20	Should support IPv4 & IPv6.		
21	For smooth, seamless and easy manageability, operation, interoperability and maintenance, the bidder should offer/quote WLC & WAPs of the same make (OEM).		
22	Controller should support deep packet inspection for all user traffic across Layer 4-7 network to analyses information about applications usage, peak network usage times for all access points from day one		
23	Solution should support advance WIPS with the following features(integrated/external from same OEM)- Should support for future requirement.		

24	WIPS solution should be capable of wireless intrusion detection & prevention .The WLAN should be able to detect Rogue AP and take corrective action to prevent the rogue AP. The system should detect and prevent an organization's wireless client connecting to rogue AP and also prevent an outside client trying to connect to organizational WLAN.		
25	WIPS solution should detect & prevent an Ad-hoc connection (i.e. clients forming a network amongst themselves without an AP) as well as windows bridge (client that is associated to AP is also connected to wired network and enabled bridging between two interfaces)		
26	The system should detect an invalid AP broadcasting valid SSID and should prevent valid clients getting connected from these AP's.		
27	The WIPS solution should able to detect and prevent if a client use FATA-Jack 802.11 DoS tool (Available free on internet) and tries to disconnect other stations using spoofed authentication frames that contain an invalid authentication algorithm number.		
28	The WIPS solution should detect and protect if a client/tool try to flood an AP with 802.11 management frames like authenticate/associate frames which are designed to fill up the association table of an AP.		
29	The WIPS solution should detect and protect if somebody try to spoof mac address of client or AP for unauthorized authentication.		
30	The WIPS solution should detect and protect if an attacker attempts to lure a client to a malicious AP using SSID on fake AP in close proximity of the premises.It should detect When the Valid Client probes for Valid SSID and these malicious APs respond and invite the client to connect to them.		
31	WIPS solution should detect and protect if intruder try sending spoofed frames to the AP on behalf of the original client to trick the AP into believing the client is asleep to buffer the AP beyond limit.		
32	The OEM should be in Gartner's Leader quadrant in wired and wireless since last consecutive 3 years		

III	Indoor Access Point		
Sr. No	**Specifications**	**Compliance Yes / No**	**Cross reference (Name of the document with page number)**
	Description		
1	Access Point should be 802.11ac Wave 2		
2	Access Point radio should be minimum 3x3 MU-MIMO with 3 spatial streams on 5ghz.		
3	AP should have 1x10/100/1000 Ge LAN port.		
4	802.11 a/b/g/n/ac functionality certified by the Wi-Fi alliance.		
5	Access Point can have dual-band Omni-directional integrated or external Antenna.		
6	Access point should have integrated Bluetooth Low energy beacon to support advance location based services for Mobile engagement.		
7	Should support 16x BSSID per AP radio.		
8	The access point should be capable of performing security scanning and serving clients on the same radio. It should be also capable of performing spectrum analysis and security scanning using same radio.		
9	Should support BPSK, QPSK, 16-QAM, 64-QAM and 256 QAM (256 QAM for 802.11ac only) modulation types		
10	Access point should support 802.3af/at POE standard.		
11	Access point should have console management port.		
12	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.		
13	Must support wireless IDS for Air monitor, rogue detection and containment		
14	Access Point must support Spectrum analyzer with dedicated or hybrid mode of operation		
15	Access Point must support application level visibility and control		
16	AP model proposed must be able to be both a client-serving AP and a monitor AP for Intrusion Prevention and spectrum analysis services		
17	Access point must incorporate radio resource management for power, channel, coverage hole detection and performance optimization		

18	Mount Bracket etc should be provided along with the APs and all these accessories make must be from same OEM as that of the Access Point.		
19	Access Point must support Operating Temperature 0° C to +45° C.		
20	Access point should support standalone/autonomous mode for specific requirements		
21	AP should be Wi-Fi Alliance certified,UL2043 plenum rating, Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac, EN 60601-1-1 and EN 60601-1-2		
22	The OEM should be in Gartner's Leader quadrant in wired and wireless since last consecutive 3 years		

IV	**Authentication, Authorization and Accounting (AAA)**		
SL No.	**Specifications**	**Compliance (Yes/No)**	**Cross reference (Name of the document with page number)**
	The proposed solution should be appliance based.		
A	**Device Profiling and Visibility**		
1	Provide automatic detection and categorization of endpoints for security and audit demands, regardless of device type, using contextual data and use this data for optimizing access policies		
2	Stored profiling data should identify device profile changes and dynamically modify authorization privileges. For example, if a printer appears as a Windows laptop, the system can automatically deny access.		
3	Support passive device profiling methods such as DHCP, Span Ports, HTTP User-Agent, MAC OUI and TCP SYN-ACK handshakes		
4	Support active device profiling methods such as SNMP, Subnet Scan, SSH, WMI and NMAP Scan		
5	Internal device fingerprint dictionaries that provide a way to automatically or manually update periodically. Capable to define custom fingerprints for wired and wireless devices		
6	Offer a comprehensive dashboard to see the total number of endpoints, and the number by category, family and device type.		

B	**Authentication, Authorization and Accounting (AAA)**		
1	Integrated scalable AAA services (authentication, authorization, and accounting) including access policy management with a complete understanding of context, such as user's role, device type, location, time of day etc.		
2	User and device authentication based on 802.1X, non-802.1X, and Web Portal access methods across multi-vendor wired networks, wireless networks, and VPNs		
3	Usage of multiple authentication protocols concurrently, such as PEAP, EAP-FAST, EAP-TLS, EAP-TTLS, and EAP-PEAP-Public		
4	Fine-grained control using attributes from multiple identity stores, such as Microsoft Active Directory, Kerberos, LDAP-compliant directory, Open Database Connectivity (ODBC)-compliant SQL database, token servers, and internal databases across domains within a single policy		
5	Non-802.1X devices (such as printers, IP phones, IP cameras and IOT devices) can be identified as known, based on the presence of their MAC addresses in database, or unknown upon connecting to the network.		
6	Integrated TACACS+ server for secure authentication of device administrators, operators etc. with varied privilege levels. It should keep a track of the changes made by the logged-in user.NAC solution shall have inbuilt TACACS+ Server capability to support Device administrator secure authentication, privilege-based access and audit logging		
7	Customizable Reporting with manual or scheduled reports in PDF/CSV/HTML formats, inventory dashboard showing details of learned devices, real-time monitoring of access requests and events, proactive alerts through Email/SMS		
8	HTTP/RESTful API's, syslog messaging and Extensions capability to exchange endpoint attributes with firewalls, SIEM, endpoint compliance suites and other solutions for enhanced policy management		
9	Mobile Device Management Integration to fetch information such as device manufacturer, model, OS Version, MDM Agent installation status etc. and use this information in access policies		
10	API Integration with helpdesk software allowing dynamic creation of problem tickets of any network triggered policy breaches		
11	Inbuilt utilities for interactive policy simulation and monitor mode for assessing the policies before applying to the production network		

12	Process inbound threat-related events (which are Syslog events received from any third-party vendor device, such as Firewall, SIEM) and perform enforcements and actions based on the defined enforcement policies and services.		
13	Solution should support Inbuilt utilities for interactive policy simulation and monitor-only mode for assessing the policies before applying to the production network		
14	The NAC solution shall detect Virtual Machines running on the PC		
C	**Guest Access Management**		
1	Easy-to-use guest management solution for visitors, contractors, partners, etc. on wireless and wired networks using any type of device.		
2	Guest access through captive portal with extensive branding and customization including company logos, visual imagery and optional advertisements with multimedia content to extend organization's messaging		
3	Captive portal should have mobile device awareness to automatically size for smart phones, tablets and laptops		
4	Guest self-registration through the web portal, delivering username and password directly to the visitor's Web browser, or sent via email or SMS.		
5	Sponsor-based approval workflow to enable an internal employee to approve guest account before guest is allowed to access the network		
6	Customize guest access privileges to enforce bandwidth limits, access to specific resources, length of connections and set automatic account expiry after a specified number of hours or days		
7	Guest portal with Sponsor based authentication, OTP-based authentication (SMS and SMTP gateway integration) and social-login authentication		
D	**Endpoint Posture Checking(Solution should support, not required from day-1)**		
1	Perform advanced endpoint posture assessments to ensure organization's compliance is met before devices connect		
2	Support the following operating systems and versions: Microsoft Windows 7 and above, Apple macOS 10.10 and above		
3	Users of unhealthy endpoints that do not meet compliance requirements, should receive a message about the endpoint status and instructions on how to achieve compliance		

4	Endpoint posture and health checks should include Installed Applications, AntiVirus, Firewall, Network Connections, Processes, Patch Management, Peer to Peer applications, Virtual Machines, USB Devices etc.		
5	Provide persistent agent for operating system to provide nonstop monitoring of the end point with automatic remediation and control		
6	Offer web-based dissolvable agent for endpoint compliance check of personal and non IT-issued devices		
E	**Requirement Summary**		
1	Hardware appliance		
2	Licenses supporting minimum 200 concurrent sessions for AAA/Guest access /TACACS+ on Day 1. Upgradeable to 1,000 concurrent sessions without appliance change		
F	**OEM and Product Eligibility/Compliance**		
1	The solution shall be Common Criteria certified for network access control (NAC) solution, under both the Network Device collaborative Protection Profile (NDcPP) and the Extended Package for Authentication Servers modules. The certificate shall be attached as reference. The NAC vendor shall be a leader or challenger in the last Gartner Magic Quadrant for NAC released in 2014		
2	The solution shall be recognized as one of the leaders in network access control (NAC) by 3rd party research firms like Gartner, Frost & Sullivan etc. The report shall be attached as reference		
3	OEM shall furnish at least one purchase order copy or proof of contract for AAA/Network Access Control (NAC) solution in India in last three years with minimum 4000 licenses		
5	Solution should be from same OEM as all the active networking items(Switch, Access Point, Wireless Controller)		

V	**Connectors/Converters**		
	1G SFP LC LX 10km SMF Transceiver		
	Should support existing Networking equipment from day one mentioned in Annexure - 1		
	Should support proposed Networking equipment from day one mentioned in Annexure –2		

VI	Fiber LIU Rack-mountable, 1U fully loaded, SM			
Sr No.	**Specifications**	**Requirement**	**Compliance (Yes/No)**	**Cross reference (Name of the document with page number)**
1	**Fiber Management shelf**	The fiber management shelf shall have compact design and be ideal for high density front patching applications.		
		Should be fully loaded and factory fitted assembly with no assembling required during installation at site		
		• High Density: 1U: 6/12/24 Fiber terminations		
		• Should be supplied loaded with SC adapters, splice trays, SC SM Pigtails and fiber management rings		
		• Min 4 cable entry points on rear of shelf		
		• Mounting brackets can be placed in different positions		
2	**Drawer style shelf**	o Easy access to splicing tray & connectors		
		o Should have front locking latches on both side of shelf		
3	**Accessories**	Fiber management guides, radius controls & secure tie downs provided		
		Pre loaded with labeling strips, 2 grounding lugs		
		Sealed cable inlets for dust and rodent protection		
4	**Material**	Min 16 gauge CRCA Sheet steel with powder coating		
5	**IL @ 1310nm**	<0.3dB		

	RL	>45 dB Factory Test report shall be supplied with each shelf.		
6	**Fiber / buffer tube stora**	Min of 320 mm depth		
7	**Compliance**	ROHS 2011/EU Compliant		

VII	**LC to SC Patch Cord SM / SC to SC Patch Cord SM**			
Sr No.	**Specifications**	**Requirement**	**Compliance (Yes/No)**	**Cross reference (Name of the document with page number)**
1	**Make and Type**	LC/UPC to SC/UPC Duplex tuned Fiber Optic Patch Cord, 9/125 Micron, 3 Mtr SC/UPC to SC/UPC Duplex tuned Fiber Optic Patch Cord, 9/125 Micron, 3 Mtr		
2	**Standard**	ITU-T G.652.D and ITU-T G.657.A1 Bend Insensitive Singlemode OS2 Fiber		
3	**Cable Sheath**	LSZH		
4	**Cable Diameter**	1.6 mm duplex cord		
5	**Flame Test Listing**	NEC OFNR-LS (ETL) and c(ETL)		
6	**Flame test compliance**	IEC 60332-3, IEC 61034-2 and IEC 60754-2		
7	**UL Listings**	Shall be UL 1666 and UL 1685 compliant.		
8	**Insertion Loss**	MAX .3 db		
9	**Return Loss**	> 45 db		
10	**Temperature Range**	-10 Degree C to +60 Degree C		
11	**ROHS**	ROHS 2011 Compliant		

VIII	CAT6A UTP Information Outlets (Outlet Jacks, Dual face plate, Box etc.)		
Standard Compliance		**Compliance (Yes/No)**	**Cross reference (Name of the document with page number)**
The CAT6A UTP 8-pin modular (RJ-45) jacks shall have Electrical performance guaranteed to meet or exceed the channel specifications of ISO/IEC 11801 Class EA and ANSI/TIA-568-C.2 Category 6A.			
Shall support network line speeds up to at least 10 gigabits per second			
Information outlet shall have IDC connector terminations on rear of base allow quick and easy installation of 22 to 24 AWG cable			
The outlet jacks shall have flexibility to be mounted in the same faceplate in either 90^0 (straight) or 45^0 (angled), as per space available at installation.			
Each outlet shall be supplied with rear protective strain relief cap to protect against contamination and securing the termination.			
Electrical properties:			
The information outlet shall have a Current Rating of 1.5 A at 20°C			
Insulation Resistance, minimum: 500 MOhm			
Contact Resistance, maximum: 100 mOhm			
Contact Resistance Variation, maximum: 20 mOhm			
Dielectric Withstand Voltage, RMS, conductive surface: 1,500 Vac @ 60 Hz Dielectric Withstand Voltage, RMS, contact-to-contact : 1,000 Vac @ 60 Hz			
Mechanical performance:			
Material: High-impact, flame retardant, thermoplastic, UL 94V-0 rated			
Shall be IEC 60603-7 compliant			
Plug insertion life, Min: 750 cycles			
Plug retention force, min: 133N			

Should be UL and cUL listed		
ROHS 2011/65/EU compliant		
Faceplates - Dual		
General Specifications a) Color: White b) Width: 86.36 mm (3.4 in) c) Height: 86.36 mm (3.4 in) d) Depth: 13.72 mm (0.54 in)		
Material shall be high impact, flame retardant, UL-rated 94 V-0, thermoplastic.		
Shall have inbuilt shutters to prevent dust to accumulate on the information outlets which are not in use.		

IX	**CAT6A Patch Panel, 24 Port**		
Standard Compliance		**Compliance (Yes/No)**	**Cross reference (Name of the document with page number)**
The ganged adapter style patch panel will utilize increments of six RJ-45 style jacks in a common moulded component.			
The ganged adapters shall have RJ45 jack in the front and Insulation Displacement Connector (IDC) at the rear of the module.			
The panel must be certified under Intertek 4 connector channel performance for ANSI/TIA 568-C.2 CAT6A requirement under 100m long channel as well as 15 mtr short channel. Both test reports must be submitted with bid.			
3rd Party Verification test certificates shall be provided to show compliance to ISO/IEC 11801 Amendment 2 testing for Cat 6A components.			
When configured in worst-case 100 meter channels with full cross-connects and consolidation points with the other products proposed in this tender, the panel shall be capable of delivering the minimum guaranteed channel performance			

The patch panel type shall be a 1U (24 port) panel capable of supporting 24 unshielded modular 8-pin connectors compliant with IEC 60603-7-4 while meeting the Channel Performance as specified in Amendment 1 to ISO/IEC 11801:2002		
The panel shall be available in 24-port and 48-port configurations, both straight and angled, with universal A/B labeling and 110 connector terminations on rear of panel allowing for quick and easy installation of 22 to 24 AWG cable		
The panel shall be equipped with a removable rear mounted cable management bar and front and rear labels		
The panel shall be UL and cUL Listed		
Operating Temperature Range = 14°F to 140°F (-10°C to 60°C)		
Humidity = 95% (noncondensing)		
Insertion Life = 750 minimum insertions of an FCC 8-Position Telecommunications Plug		
ROHS 2011 compliant.		

X	**9U Wall Mount Rack**	
Standard Compliance	**Compliance (Yes/No)**	**Cross reference (Name of the document with page number)**
Supply of 9U with 600mm depth, 19" Wall Mount Networking Rack of reputed brand with minimum two Fans, 6 port Power strip with MCB and equipment mounting hardware and cable managers.		

Price Bid: Part C

NIT No.: NIBMG/Campus Network 2nd Phase/2019-20/71, dated: 6th March 2020					
Setting up campus network 2nd phase in the campus of National Institute of Biomedical Genomics, Kalyani, West Bengal.					
Sl. No.	**Item description**	**Qty.**	**Unit Rate (Rs.)**	**Total Rate (Rs.)**	
1	**Supply installation, testing and commissioning of the following Active hardware and software items as per specifications mentioned in the tender document with 5 years onsite comprehensive warranty:**				
1.01	Appliance based Wireless Controller with required licenses	1			
1.02	Wireless Access Points with required licenses	28			
1.03	48 Ports PoE+ Layer 2 Network Switch with required licenses	10			
1.04	1 Gb SFP Module with required licenses	42			
1.05	Authentication, Authorization and Accounting (AAA) Server with required licenses for minimum 200 concurrent users	1			
2	**Supply installation, testing and commissioning of the following Passive hardware items as per specifications mentioned in the tender document with 25 years onsite comprehensive warranty:**				
2.01	24 Port Fiber LIU Rack-mountable, 1U fully loaded, SM	4			
2.02	12 Port Fiber LIU Rack-mountable, 1U fully loaded, SM	11			
2.03	Supply of Single Mode Duplex SC to LC Patch Cord - 3 Mtr long.	45			
2.04	Supply of Single Mode Duplex SC to SC Patch Cord SM- 3 Mtr long.	12			
2.05	CAT6A UTP Information Outlets (Outlet Jacks, Dual Face plate, Box etc.)	200			
2.06	CAT6A Patch Panel -24 Port	7			
2.07	9U Wall Mount Rack	7			
			Total Cost in Rupees		
			GST		
			All total inclusive of GST		
In words:					