FINAL AND FROZEN TECHNICAL SPECIFICATION AND OTHER TERMS & CONDITIONS OF

"Network Switch PoE+, 48 Port, Layer 3, Gigabit Managed – 01 No. (as per Annexure – A) and Network Switch PoE+, 48 Port, Layer 2, Gigabit Managed – 06 Nos. (as per Annexure – B)" and "Wireless Access points – 35 Nos. (as per Annexure – C)"

ENQUIRY NO. & DATE	**IICB/PUR/504&599/569/71/20-21 DATED 19.02.2021**
ONLINE PRE-BID CONFERENCE HELD ON	**01.03.2021 AT 03:00PM (IST)**
LAST DATE OF SUBMISSION OF BID (Hard copy to be submitted to the SPO, IICB, Kolkata) :	**23.03.2021 upto 05:00 PM (IST)**

Annexure – A

Network Switch 48 Port Layer 3 POE+ Distribution Switch
With minimum of 6 No. of 10G SFP Slots/Ports
& 6 No. of 10G SFP compatible MM Transceiver populated

1. Technical Specifications and Other Terms & Conditions:

1.1 Technical Specifications:

Sr. No	Specifications
1	Architecture
	The switch should have at least 48 RJ-45 autosensing 10/100/1000 PoE+ ports, minimum 6x SFP+ 10GbE ports and The Switch should support minimum of 1 RJ-45 serial console port,1 RJ-45 out-of-band management port and 1 USB port
	The Switch with minimum of 6 10G SFP Ports and 6 no. of 10G SFP compatible MM Transceiver must be populated
	The switch should have 512MB or Above flash, 2 GB or Above SDRAM
	The switch should have 216 Gbps or Above switching capacity
	The switch shall have switching throughput of 190 million pps or Above
	The switch should have MAC Address table size of 16,000 entries or Above
2	Quality of Service (QoS)
	The Switch should support Advanced classifier-based QoS to classifies traffic using multiple match criteria based on Layers 2, 3, and 4 information and apply QoS policies such as setting priority level and rate limit to selected traffic on a port, VLAN, or entire switch
3	Management
	The Switch should support configuration and management through a secure Web browser or a CLI located on a remote device
	The Switch should support RADIUS/TACACS to link a custom list of CLI commands to an individual network administrator's login and also provides an audit trail
	The Switch should support Device Link Detection Protocol (DLDP)
4	IPv6 management
	The Switch should capable of being managed whether the attached network is running IPv4 or IPv6. The Switch should supports pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6, syslogv6, FTPv6 or SCP, SNMPv6, DHCPv6, and RADIUS for IPv6
5	Resiliency and high availability
	The Switch shall have the capability to extend the control plane across multiple active switches making it a virtual switching fabric, enabling interconnected switches to perform as single Layer-2 switch, The switch should support up to minimum of nine switches can be combined to deliver unmatched scalability of virtualized access layer switches and flatter two-tier networks and switch should support single IP management up to minimum of nine Switches
	The Switch should support Internal Dual Redundant Power Supply
6	Manageability
	The Switch should provide independent primary and secondary operating system files for backup while upgrading
	The Switch should support Multiple configuration files
	The Switch should support pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6, and ARPv6
7	Layer 2 switching
	The Switch should have minimum of 16K MAC address table
	The Switch should support IEEE 802.1Q with minimum of 4K simultaneous VLAN IDs
8	Layer 3 routing
	The Switch should support Static IP routing
	The Switch should support Routing Information Protocol (RIP)v1 and RIPv2 routing
9	Security
	Access control lists (ACLs)

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	The Switch should provide IP Layer 2 to Layer 4 traffic filtering and support global ACL, VLAN ACL, port ACL, and IPv6 ACL
	The Switch should support secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, HTTPS and/or SNMPv3
	The Switch should provide security policies to users accessing a network
	The Switch should support IPv6 source guard
10	Environmental Features
	The Switch should reduces power consumption in accordance with IEEE standard
	Operating temperature of 0°C to 45°C
	Safety and Emission standards like UL 60950-1; IEC 60950-1; VCCI Class A; EN 55022 Class A etc.
11	Warranty: The Switch must support minimum Three Years NBD Support

1.2 Other Terms & Conditions:

a. Installation, Configuration, Service, Network Management, Integration, any other accessories or any labor cost etc. must be included along with the bid.

b. Supply and Installation must be at CSIR-IICB, Salt Lake IICB TRUE Campus, Kolkata, India.

c. OEM of the proposed Wireless Access Points must be from the Gartner Magic Quadrant [Leaders / Visionaries / Challengers / Niche Players] for Wired and Wireless Products from last 3 years preferred and this is applicable only for imported Products.

d. All Supplied Switches mentioned in Annexure A must be from the same OEM and must be compatible with Annexure B & Annexure C Products.

Or

All Supplied Switches mentioned in Annexure A must be compatible with existing HP Intelligent Management Center (iMC 5.1)

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Annexure – B

Network Switch 48 Port Layer 2 POE+ Access Switch
With minimum of 2 No. of 10G SFP Slots/Ports
& 1 No. of 10G SFP compatible MM Transceiver populated

2. Technical Specifications and Other Terms & Conditions:

2.1 Technical Specifications:

Sr. No	Specifications
1	Architecture
	The Switch should have minimum of 48 RJ-45 autosensing 10/100/1000 Mbps PoE + ports and Minimum 2 * 10G SFP+ slot; 1 RJ-45 (serial RS-232C) or USB micro-B console port or Standard Console Port
	The Switch must have minimum of 2 No. of 10G SFP Slots/Ports & 1 No. of 10G SFP compatible with MM Transceiver must be populated
	Shall have 1GB DRAM or Above and 512MB or Above Flash
	Packet buffer size of 4 MB or more
	Shall have switching capacity of 176 Gbps or Above for providing non-blocking performance
	Shall have up to 112 million pps or above better switching throughput to achieve wire-speed forwarding
	Shall have POE+ budget of 370W or equivalent or best suitable
2	Layer 2 Features
	MAC address table size of 16000 or more entries
	Shall support up to IEEE 802.1Q (4,094 VLAN IDs or Above) and 512 VLANs or Above simultaneously
	Shall support GARP VLAN Registration Protocol or equivalent feature to allow automatic learning and dynamic assignment of VLANs
	IPv6 host and Dual stack (IPv4/IPv6) support to provide transition mechanism from IPv4 to IPv6
3	Layer 3 Features
	The Switch should support Routing Information Protocol (RIP) v1 and RIP v2 routing and static routing.
4	QoS and Security Features
	Access Control Lists for traffic filtering
	Source-port filtering or equivalent feature to allow only specified ports to communicate with each other
	IEEE 802.1x to provide port-based user authentication with multiple 802.1x authentication sessions per port or any better feature
5	Management Features
	Configuration through the CLI, console, Telnet, SSH and browser-based management GUI (SSL)
	SNMPv1, v2, and v3 and Remote monitoring support etc.
6	Environmental Features
	Operating temperature of 0°C to 45°C
	Safety and Emission standards like EN 60950; IEC 60950; VCCI Class A; FCC part 15 - Class A etc.
7	Warranty: The Switch must support minimum Three Years NBD Support

2.2 Other Terms & Conditions:

a. Installation, Configuration, Service, Network Management, Integration, any other accessories or any labor cost etc. must be included along with the bid.

b. Supply and Installation must be at CSIR-IICB, Salt Lake IICB TRUE Campus, Kolkata, India.

c. OEM of the proposed Wireless Access Points must be from the Gartner Magic Quadrant [Leaders / Visionaries / Challengers / Niche Players] for Wired and Wireless Products from last 3 years preferred and this is applicable only for imported Products.

d. The Supplied all Switches must be from the same OEM and must be compatible with Annexure A & Annexure C Products.

Or

All Supplied Switches mentioned in Annexure A must be compatible with existing HP Intelligent Management Center (iMC 5.1)

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Annexure – C

Wireless Access Points

3. Technical Specifications and Other Terms & Conditions:

3.1 Technical Specifications:

Sr. No	Specifications
1	AP should support standalone mode/ Inbuilt Virtual controller mode
2	Indoor Access Points should support Wi-Fi Standards of 802.11 a/b/g/n/ac,802.11ac Wave 2
3	Access Point radio should be minimum of 2x2 MU-MIMO with 2 spatial streams
4	Access Point should support both Frequency Band 2.4 GHz & 5.0 GHz
5	AP should have at least one 10/100/1000 Ge LAN port
6	Access Point can have integrated Antenna
7	Access Point should support data rate of 800Mbps or above in the 5GHz band and 250Mbps or above in the 2.4GHz band
8	Access point should support and powered by 802.3af PoE , 802.3 at PoE+ and external power adaptor as well
9	Must support IPS & rogue detection etc. features
10	Access Point may support Operating Temperature 0° C to +40° C
11	AP should have Device Management Web-based Configuration Interface (GUI)
12	Access Point should be Wall / Ceiling mountable and kit/ Accessories must be supplied for all access points
13	Warranty: The Access Point must support minimum of Three Years NBD Support

3.2 Other Terms & Conditions:

a. Installation, Configuration, Service, Network Management, Integration, any other accessories or any labor cost etc. must be included along with the bid.

b. Supply and Installation must be at CSIR-IICB, Salt Lake IICB TRUE Campus, Kolkata, India.

c. OEM of the proposed Wireless Access Points must be from the Gartner Magic Quadrant [Leaders / Visionaries / Challengers / Niche Players] for Wired and Wireless Products from last 3 years preferred and this is applicable only for imported Products.

Or

In case the OEM of the proposed Wireless Access Points does not meet the Gartner Magic Quadrant reports as stated above then the OEM of the proposed Wireless Access Points must meet any other globally equivalent performance for last 3 years preferred and this is applicable only for imported Products.

d. The Supplied all Wireless Access points must be from the same OEM and These Access points may run with its own controller based software along with compatible to Annexure A & Annexure B Products.

Or

The Supplied all Wireless Access Points must be compatible with existing HP Intelligent Management Center (iMC 5.1).

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