

## RESPONSE TO PRE-BID QUERIES

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
1	Phase I: Evaluation of Technical Bid:	44 of 149	2. * Minimum project value considered for evaluation should be more than 9.6 crores.	Please clarify: 9.6Cr is the cumulative value or each project should have this value or single project value only be considered for qualification.	Single project value should be equal to or more than 9.6cr
2	Phase I: Evaluation of Technical Bid:	44 of 149	3. Experience of Setting Up big Campus Network/ Educational Institution/ University* project in the last Seven financial years with minimum project value of 6 crores. * Note 1: Setting up of Campus area Networking (Active components) and related security (NGFW/ equivalent) & monitoring system software (NMS, WLC)	We request you to allow the Past Experience from Public Limited Companies/Large Enterprises also for fair competition.	No change
			Core Switch		

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3	1.2.2	103	Atleast 4 x 40/100G ports populated with required 40G transceivers/DAC cables.	As per network design 04 x 40G ports are already utilized to create 40G Ring. There will be no 40/100G ports are left for any new connectivity which may come up in future. Therefore it is requested to make it "atleast 8 x 40/100G ports, populated with 4 x 40G transceivers/DAC cables"	As per corrigendum-1
4	1.2.2	104	Switch shall have 16GB RAM & 16 GB Flash/SSD	Every OEM have differnet Network Switch Architecture, Operating System which may have their own requirement to run the hardware & Operarting System. Restricting the RAM size to 16GB may favor to specific OEM therefore it is requested to please modify the clause as "Switch shall have at least 4GB RAM & 16GB Flash/SSD"	No change
5	1.2.2	104	Switch should support min. 100GB SSD to host 3rd party container based application	This is a Data Center Switch specific feature as Container based application are hosted on Servers at Data Center only. This feature can be OEM specific therefore for Multi-OEM participation, it is requested to delete this clause.	As per corrigendum-1

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6	1.2.2	104	Must support BGP, IS-IS, VRF, EVPN, VXLAN, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP) from Day 1	IS-IS, EVPN protocols are required in Internet Service Provider network due to large scale of Routing Table & VPN Instances of multiple customers. These features have no application/usage in Campus networks therefore it is requested to modify the clause as " Must support BGP, VRF, VXLAN, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP) from Day 1"	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
7	1.2.2	104	Switch should support management features like SSHv2, SNMPv2c,SNMPv3, IGMP, and routing protocols such as BGPv4,IS-IS v4 or equivalent & RESTCONF from day one.	<p>1) ISIS is a ISP Network specific protocol not required in Campus Network therefore this clause shall be modified as "Switch should support management features like SSHv2, SNMPv2c,SNMPv3, IGMP, and routing protocols such as BGPv4 &amp; RESTCONF from day one."</p> <p>2)Netconf/Yang support has been asked in the distribution switch specs but not in Core Switch. Therefore Netconf/Yang model support must be added in Core Switch also to make it work.</p> <p>3) It is suggested to add the support for Openflow 1.3 protocol which vendor agnostic/ open protocol supported by all leading OEMs for Software Defined Network</p>	No change
8	1.2.2	104	System's software signatures / authentication should be checked for integrity. System or process should capable to understand that system OS are authentic and unmodified.		As per corrigendum-1
			Distribution Switch		

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
9	1.2.2	106	Must support BGP, MPLS, IS-IS, VRF, EVPN, OSPF, PIM SM and VRRP/HSRP, must have RIP, OSPF routed access, PBR, VXLAN.	IS-IS, EVPN protocols are required in Internet Service Provider network due to large scale of Routing Table & VPN Instances of multiple customers. These features have no application/ usage in Campus networks therefore it is requested to modify the clause as " Must support BGP, MPLS, VRF, OSPF, PIM SM and VRRP/HSRP, must have RIP, OSPF routed access, PBR, VXLAN."	No change
			Layer 2, 24 Port PoE Access Switch		
10		107	Switch should have dedicated slot or ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.	Can this be changed to state "Switch should have slot or ports for modular stacking.. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack." Having dedicated access ports and accessories will increase the cost of the access switch. Hence requesting to change this clause as many vendors offer flexible uplinks that can also be stacked.	No change
11		107	The switch shall have minimum 250Gbps of switching fabric or higher and 150 mbps or higher of forwarding rate.	The requested switching fabric is very high for an access 24 port switch can this be reduced to 230Gbps switching fabric.	No change

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12		108	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.	MAC would not be required in a campus solution. Hence can this feature be removed. It will make the access switch solution cost to be higher than required.	No change
13	1.2.1. IP-PBX System	99	SIP phone should be from the same OEM of IP telephony system	Request to relax this clause from same OEM to different	No change
14	1.2.2. Local Area Network (LAN) including management	105	Switches, trans receivers, wireless controllers and access points should be from the same OEM for better integration.	Request to relax this clause from same OEM to different	No change

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15	1.2.2 (Core Switch)	104	<p>Switch should have</p> <ol style="list-style-type: none"> <li>1) 48 x 1/10/25G ports</li> <li>2) Atleast 4 x 40/100G ports populated with required 40G transceivers/DAC cables.</li> <li>3) Atleast 1 No of 100 G ports with required transceivers to connect Core to Core switch</li> </ol>	<p>Based on high level diagram available in tender Page No 29.Core to Distribution switch will connect over 40G and There are total five distribution switch so At core switch must have 5 nos. of 40/100G Ports to connect all 5 Distributions switch over 40Gbps.</p> <p>The connectivity between core to core switch to create High availability/Stack/Virtual Stack/Physically connected to two different switch required atleast 2 nos. of 100G additional port per core switch. Hence Kindly the clausud should be amend as--</p> <p><b>Switch should have</b></p> <ol style="list-style-type: none"> <li><b>1) 48 x 1/10/25G ports</b></li> <li><b>2) Atleast 5 x 40/100G ports populated with required 40G transceivers/DAC cables.</b></li> <li><b>3) Atleast 2 No of 100 G ports with required transceivers to connect Core to Core switch</b></li> </ol>	As per corrigendum-1

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16		104	The device should be IPv6 ready logo certified from day one.	Most of the OEM have their Product OS(Operating System) IPv6 ready and provide the Technical Compliance for the same along with the Data Sheet of the Product Operating System mentioning the Readiness of the OS for IPV6. Kindly amend this clause to increase the participation of reputed OEM as - <b>The device or supported OS should be IPv6 ready from day one</b>	As per corrigendum-1
17	1.2.2 (Distribution Switch)	105	Switch shall support dedicated stacking ports with the min. stacking bandwidth of 200Gbps or higher.	Based on high level diagram of tender, Distribution switch is configured as standalone not in stacking mode, hence do not require dedicated stacking port which will unnecerialy only add cost to the Department . Please remove the dedicated stacking port word and amend as for more participation - <b>Switch shall support min. stacking bandwidth of 200Gbps or higher.</b>	As per corrigendum-1
18			Additional Important IEEE features/Protocol must have for education campus environment.	<b>Switch should support IEEE 802.1ba protocol for better synchronization, low latency for audio video traffic running in the campus network (ex. For time sensitive applications/ video streaming / online classes etc.)</b>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
19	Chapter VIII	93	The HCI solution should provide Inline de-duplication & compression for entire data stored in HCI. Any required resources and licenses required for this functionality should be included with the solution from day 1.	<p>Change Request: The HCI solution should provide Inline de-duplication &amp; compression for entire data stored in HCI and should be available across all the supported storage tier. Any required resources and licenses required for this functionality should be included with the solution from day 1.</p> <p>Justification: De-duplication and compression are the mandatory features for any HCI solution to save the cost on storage footprints. Hence requesting department to consider the suggested changes.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
20	Chapter VIII	94	<p>The HCI software should pool all HDDs from all the nodes in the cluster to present a single storage resource pool to all server nodes in the cluster.</p> <p>There should not be any dependence on data locality.</p>	<p>Change Request: The HCI software should pool all HDDs from all the nodes in the cluster to present a single storage resource pool to all server nodes in the cluster. Offered system must support data locality in order to enhance the system performance by avoiding extra hops in reading and writing the data to the HCI storage.</p> <p>Justification: Data Locality is the must to have feature for any HCI solution, in absence of data locality your application latency will increase and department may not be able to take full advantage of HCI solution.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
21	Chapter VIII	94	The HCI should provide connectivity to external 3rd party SAN storage	<p>Change Request: The HCI should provide integration to external 3rd party SAN storage and must support all the storage protocols ISCSI, SMB, NFS and S3 protocols .</p> <p>Justification: HCI solution comes as an alternative to costly traditional storage infrastructure and doesn't need the storage as HCI solution is capable of providing support for all the storage protocols ISCSI, SMB, NFS and S3 protocols . Hence request you to consider the suggested changes.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
22	Chapter VIII	94	<p>15TB usable capacity to be configured with minimum data protection of RF2 or higher. The capacity should be absolute capacity without considering any data efficiency techniques as Data Deduplication, compression, erasure coding etc. Each node shall also be provided with 1.9 TB dedicated SSD drive as caching capacity. Bidder should not use dry sizing of 1.9 TB.</p>	<p>Change Request:  15TB usable capacity to be configured with minimum data protection of RF2 or higher. The capacity should be absolute capacity without considering any data efficiency techniques as Data Deduplication, compression, erasure coding etc. Each node shall also be provided with cache capacity in redundant mode to provide resiliency for the critical caching system for any HCI solution.</p> <p>Justification:  Cache disk should be in redundant mode to take full advantage of HCI solution to increase the performance and having the resiliency across critical caching system.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
23	Chapter VIII	94	Proposed Hypervisor should be general available to work on all architectures such as Rack, Blade and HCI Infrastructures.	<p>Change Request: Proposed Hypervisor should be available to work on all architectures of HCI Infrastructures and should not have separate cost to the department.</p> <p>Justification: Tender clause is very restricted and making it proprietary to one OEM. Kindly consider the suggested change so that larger industry participation can be increased as directed by Government of India GFR Guideliance.</p>	No change
24	Chapter VIII	94	HCI Node and SDS layer should be from same OEM to avoid any compatibility issues.	<p>Change Request: HCI Node and SDS layer should be fully compatible to avoid any compatibility issues.</p> <p>Justification: Tender clause is very restricted and making it proprietary to one OEM. Kindly consider the suggested change so that larger industry participation can be increased as directed by Government of India GFR Guideliance.</p>	No change

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25	Local Area Network (LAN) including management	109	Switches must support switch virtualization/stacking feature to extend the control plane across multiple active switches forming a single virtual switching fabric. Any modules/cables required for the same shall be provided from Day 1	Need to remove this as stacking is generally not used in the 12 port switches.	As per corrigendum-1
26	WI-FI Systems	128	The WLC shall be scalable with respect to addition of users, AP's, Bandwidth.	Scalability of Bandwidth is mapped with hardware, hence request you to please change this to "The WLC shall be scalable with respect to addition of users and AP's.	No change
27	WI-FI Systems	131	Should not require any calibration for configuration of BLE location based messaging	Request you to please change this to "Should support location based Analytics" for wider participation.	As per corrigendum-1
28	WI-FI Systems	131	Should support virtual BLE technology	Request you to please change this to "Should support BLE technology" for wider participation.	As per corrigendum-1
29	WI-FI Systems	131	Should have Antenna Options - Internal and External	Request you to please change this to "Should have Antenna Options - Internal or External" for wider participation.	As per corrigendum-1

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30	WI-FI Systems	132	Should support Artificial Intelligence (AI) Driven and Dynamic debugging with automatic RF Optimization feature	Request you to please change this to "Should support Dynamic debugging with automatic RF Optimization feature!" for wider participation.	As per corrigendum-1
31	WI-FI Systems	114	Must provide centralized management that should be able to manage wired, wireless & security components of 3rd party OEM's.	Request you to please change this to "Must provide centralized management that should be able to manage wired and wireless components for the solution provided" for wider participation.	As per corrigendum-1
32	Interfaces and Modules	116	Should have minimum 6 SFP ports	Request you to please change this to "Should have minimum 4 SFP ports" for wider Participation	As per corrigendum-1
33	Interfaces and Modules	116	Should have minimum 4 expansion slots for additional port requirement	Request you to please change this to "Should have minimum 2 expansion slots for additional port requirement" for wider participation.	As per corrigendum-1
34	Interfaces and Modules	116	Should have Out-of-Band (OOB) management port	Request you to please change this to "Should support Out-of-Band (OOB) management port" for wider participation.	As per corrigendum-1

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35	Management and Reporting	117	Should support cloud-based network management solution with central dashboard to deploy, configure, and manage proposed devices. Cloud management solution should work on subscription-based model	Request you to please change this to "Should support cloud-based/on-prem network management solution with central dashboard to deploy, configure, and manage proposed devices. Cloud management solution should work on subscription-based model" for wider participation.	As per corrigendum-1
36	Management and Reporting	117	Should support Cloud management solution should support Zero Touch Provisioning (ZTP) for fast, simple deployment. The solution should Centralize the distribution and deployment of device OS	Request you to please change this to "Should support Cloud/on-prem management solution should support Zero Touch Provisioning (ZTP) for fast, simple deployment. The solution should Centralize the distribution and deployment of device OS" for wider participation.	As per corrigendum-1
37	Management and Reporting	117	Should support Cloud management solution should support real-time visibility into the threats and risks the device has detected and mitigated	Request you to please change this to "Should support Cloud/on-prem management solution should support real-time visibility into the threats and risks the device has detected and mitigated" for wider participation.	As per corrigendum-1

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38	Management and Reporting	117	Should support Cloud management solution should be able to perform bulk updates to a range of devices and track the changes across the network. Track device inventory and schedule routine configuration backups across your devices.	Request you to please change this to "Should support Cloud/on-prem management solution should be able to perform bulk updates to a range of devices and track the changes across the network. Track device inventory and schedule routine configuration backups across your devices." for wider participation.	As per corrigendum-1
39	Routing Features	118	Should support next-generation multicast VPN	Request you to please remove this for wider participation as dedicated NGFW is already asked in the tender.	As per corrigendum-1
40	Device Security Features/Services	118	Should support Protection from protocol and traffic anomalies	Request you to please remove this for wider participation as dedicated NGFW is already asked in the tender.	As per corrigendum-1
41	Device Security Features/Services	118	Should support User-based firewall	Request you to please remove this for wider participation as dedicated NGFW is already asked in the tender.	As per corrigendum-1
42	Device Security Features/Services	119	Should support integration with cloud and on-prem ATP solutions.	Request you to please remove this for wider participation.	As per corrigendum-1

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43	Device Security Features/Services	119	Should support to work as security enforcement domain with help of policy orchestrator enforcing threat remediation policies.	Request you to please remove this for wider participation.	As per corrigendum-1
44	Device Security Features/Services	119	Solution should support flexibility wherein Policies can be orchestrated as solution detects sophisticated zero-day and unknown threats.	Request you to please remove this for wider participation.	As per corrigendum-1
45	Device Security Features/Services	119	Policy orchestration solution should support to extend the enforcement domain from firewall to network devices like Switches etc.	Request you to please remove this for wider participation.	As per corrigendum-1
46	Device Security Features/Services	119	Should support working as L3 enforcement while integrating with End Point Security (NAC) solution	Request you to please remove this for wider participation.	As per corrigendum-1

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47	Technical specifications for Firewall: A1	120	The appliance-based security platform should provide firewall and VPN from day one and should be able to support WEB Filtering ,IPS,Anti Virus Anti bot functionality from Day 1.	<p>The appliance-based security platform should provide firewall and VPN from day one and should be able to support WEB Filtering ,IPS,Anti Virus/Anti bot/Anti-malware functionality from Day 1.The appliance hardware should be a multicore CPU architecture with a hardened operating system to support higher memory and should support minimum of 64 GB of RAM</p> <p>Justification: Since Threat Prevention solution has already been asked which help organisation protect against unknown different OEM use different approach like AV or Anti-malware and hence requesting change. Also NGFW support various functions like, FW, AVC, APT, etc higher memory mean no impact on performance</p>	No change

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48	Technical specifications for Firewall : A2	120	Failover/Failback: Stateful Active/Passive and Active/Active with NGFW Features enabled	<p>Failover/Failback: Stateful Active/Passive and Active/Active Clustering with NGFW Features enabled</p> <p>Justification : This point push Certain OEM to quote bigger box. A/A is used on firewalls when a single firewall is not able to cater to the throughput requirements of the appliance,</p>	As per corrigendum-1
49	Technical specifications for Firewall : C8	120	Should support more than 15,000 IPS and 3000 application layer and risk-based controls that can invoke tailored intrusion prevention system (IPS) threat detection policies to optimize security effectiveness.	<p>Should support more than 25,000 IPS and 3000 application layer and risk-based controls that can invoke tailored intrusion prevention system (IPS) threat detection policies to optimize security effectiveness.</p> <p>Justification : Since IPS leverages signature to match against pattern, hence it is critical that solution should have high number of signature or extreme database</p>	No change

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50	Technical specifications for Firewall : E5	121	<p>The Firewall should support for TWO modes of SSL VPN.</p> <ul style="list-style-type: none"> <li>• Web-only mode: for thin remote clients equipped with a web browser only.</li> <li>• Tunnel mode, for remote computers using client.</li> </ul>	<p>The Firewall should support for SSL VPN Tunnel mode, for remote computers using client.</p> <p>Justification :A clientless vpn has multiple install dependency like java version , OS, browser etc. Controlling all of above dependencies is tedious task . Wheares client based doesn't require any these dependencies</p>	As per corrigendum-1
51	Technical specifications for Firewall : F5	122	OEM EMS/NMS application to configure & manage the firewall/IPS, Analyze the Traffic & security threats and generate periodical reports.	<p>Please remove the clause.</p> <p>Justification : This clause limit the participation as for the above point EMS/NMS application should be from same OEM</p>	As per corrigendum-1
52	1.2. Communication Backbone	94	system should support CSTA phase III Protocol	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
53	1.2. Communication Backbone	95	RFC 1890	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1

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54	1.2. Communication Backbone	95	The system must be scalable to at least 25,000 endpoints in a single cluster architecture.	We request to consider 10,000 endpoints in a single cluster and 40000 in Mega Cluster.	As per corrigendum-1
55	1.2. Communication Backbone	96	The server should have AC power supply.	We request to consider Redundant AC Power Supply on each server provided for more reliability	As per corrigendum-1
56	1.2. Communication Backbone	96	Cordless (DECT) Extension	Request to remove DECT as the same is restricted for import in India	As per corrigendum-1
57	1.2. Communication Backbone	98	Call Forward for Undefined Stations	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
58	1.2. Communication Backbone	98	Digit Train Conversion	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
59	1.2. Communication Backbone	98	Look Ahead Routing (LAR)	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1

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60	1.2. Communication Backbone	98	Night Answer Central Bell / UNA Pickup	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
61	1.2. Communication Backbone	98	Second Ring back Tone	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
62	1.2. Communication Backbone	98	Wake up	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
63	1.2. Communication Backbone	98	Barge In	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
64	1.2. Communication Backbone	98	Caller ID Control	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
65	1.2. Communication Backbone	99	Privacy – ANI Restriction	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1

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66	1.2. Communication Backbone	99	Reminder/wake up Call	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
67	1.2. Communication Backbone	99	Restrictions – Station	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
68	1.2. Communication Backbone	99	System Non-Exclusive Hold	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
69	1.2. Communication Backbone	99	ULA - User Line Appearance (ULA)	Request to please remove this clause as the same is not supported and specific to One OEM	As per corrigendum-1
70	1.2. Communication Backbone	100	Atleast 1xRJ45 10/100M Ethernet ports and 1 No. of 1 Gig port	We request to consider 2 x RJ45 10.100M Ethernet Ports for Main Network and PC Port	No change

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71	1.2. Communication Backbone	100	Narrowband codec: G.711, G.723.1, G.726, G.729AB	We request to remove G.723.1 and G.726 as these are not supported and specific to one OEM. Additionally we suggest to consider iLBC and OPUS, which are the latest advance protocols for IP Telephony.	As per corrigendum-1
72	1.2. Communication Backbone	101	1.1.1 The proposed solution must be embedded within the platform, not installed on a separate server and should be from the same OEM of the telephony system.	This is specific to one OEM.  Helpdesk solution is a separate solution integrated with IP Telephony.  Please update the clause as "The proposed solution must be integrated with IP Telephony and should be from the same OEM of the telephony system."	As per corrigendum-1
73	1.2. Communication Backbone	101	1.1.5 The same set of business and routing rules can be applied to voice / chat calls, emails, and faxes if required.	Faxes are no more in use these days and is not supported. Please amend the clause as  "The same set of business and routing rules can be applied to voice / chat calls, emails, if required."	As per corrigendum-1
74	1.2. Communication Backbone	101	1.1.10 Customer must have the ability to define/change routing rules by himself based on customer's profile.	Please clarify the requirement here	RFP is self explanatory

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75	1.2. Communication Backbone	102	1.2.1 Real-time Monitoring – must provide supervisors with statistical information about the current status of the help desk with on line refresh (1sec). The application must include pre-defined list of reports and the customer (end user) should be able to choose reports as needed.	This is specific to one OEM.  Request you to consider Line refresh Time to 3-5 secs, instead of 1 sec	As per corrigendum-1
76	Network Protocols	110	IEEE802.3 10BASE-T; IEEE802.3i 10Base-T; IEEE802.3u;100Base-TX/FX; IEEE802.3ab 1000Base-T; IEEE802.3z 1000Base-X; IEEE802.3x;IEEE802.3af, IEEE802.3at	Request you to please remove IEEE802.3i 10Base-T as this covered under IEEE802.3 10BASE-T	As per corrigendum-1
77	Forwarding Mode	110	Store-and-Forward	Request you to please remove this for wider participation.	As per corrigendum-1
78	Ring Management	110	Rapid Ring, Self recover time in < 20ms/ITU G.8032	Request you to please change this to Rapid Ring, Self recover time in < 100ms/ITU G.8032	As per corrigendum-1
79	VLAN	111	VLAN Entries - 4K	Request you to please change this to VLAN Entries - 256 for Wider participation.	As per corrigendum-1

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
80	VLAN	111	802.1v Protocol VLAN	Please remove this, lagacy protocol 802.1v is incorporated into 802.1Q-2003 and 802.1Q-2003 superseded by 802.1Q-2005	As per corrigendum-1
81	IGMP v1/v2 snooping	111	Supports IGMP Snooping, MLD Snooping, Multicast VLAN Registration (MVR)	Request you to please change this to "Supports IGMP Snooping or MLD Snooping, Multicast VLAN Registration (MVR) or equivalent. For wider participation.	As per corrigendum-1
82	Priority Queue Scheduling	111	WRR	Reqeust you to please change this to "WRR/WTC or Equivalent featuret" for wider particiaption.	As per corrigendum-1
83	PoE management	112	Sflow	Reqeust you to please change this to "sFlow/Netflow or equivalent" for wider particiaption.	As per corrigendum-1
84	Chapter-IV	91	Technical Specification for Motorized Independent Vertical Sliding Board	kindly help to share any picture or video of the product. As it will be easy for us to design the solution accordingly	RFP is self explanatory
85	H WI-FI SYSTEMS	142	Indoor AP = 363; Outdoor AP = 7	Quantities considered for outdoor and indoor access points are final or there QTY needs to be determined through heatmapping/simulation. If yes, is it in the scope of bidder/SI ?	Quantities are final. Further, RFP terms and conditions shall prevail.

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
86	5.6 Passive Networking	31	2) The structured Cabling components shall be certified for 25 years from the OEM.	As an industry practice, OEM allows certification only in case all components of the segment are of from same OEM to complete the channel. If bidder is supplying passive components from different OEM, then 25Y OEM certification warranty is not possible.	No change
87	D Access - Control Biometric Attendance system	139	Supply , Installation , Testing and commissioning of CAT 6 UTP cable 23 AWG solid copper conductors.	Please provide detailed specification	RFP is self explanatory
88	7.1 Payment Terms:	49	Milestone based Payment X=75, Y=15, Z=10 % of the Contract Value (including all taxes, duties and levies, as applicable)	We humbly request to amend payment terms - 80% on delivery and balance 20% against completion in lieu of Milestone based payment terms as bidder is also supposed to submit PBG for 5 years for 5% of contract value.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
89	iv. Delivery Schedule	38	Penalty Liquidated damages will be applicable at the rate of zeropoint five percent (0.5%) of the contract value per week or part thereof for final commissioning of ICT components subject to a maximum of 10%	Penalty should be capped maximum up to 5% of Contract value to make it more viable for competitive bidding.	No change
90	iv. Delivery Schedule	38	1. Start of shipment of Hardware/ equipment Within 4 Weeks of issuance of Work Order.  2. Delivery of Hardware/equipment at IIM Sirmaur Within 17 Weeks of issuance of Work Order.	Request to ammend Delivery timelines - upto 24 weeks from date of PO/LOA.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
91	Phase I: Evaluation of Technical Bid: Marking Matrix	44	3. Experience of Setting Up big Campus Network/Educational Institution/ University* project in the last Seven financial years with minimum project value of 6 crores. * Note 1: Setting up of Campus area Networking (Active components) and related security (NGFW/equivalent) & monitoring system software (NMS,WLC)	Request to ammend as below -  Experience of Setting Up big Campus Network of Research/Medical/Educational Institution or University* project in the last Seven financial years with minimum project value of 6 crores. * Note 1: Setting up of Campus area should include Networking (Active components) and related security, monitoring system software/controller.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
92	Phase I: Evaluation of Technical Bid: Marking Matrix	44	<p>5. Bidder shall have an average minimum annual turnover of Rs. 12 Crore in the areas specified in all the items specified above put together, in the last three (3) financial years ending March 31, 2023. * In case audited results are not available for Fy 2022-23 then the bidders can submit audited results for 2019-2020.</p> <p>Only completed projects shall be considered for marking criteria. Documents required are: Copy of work order + Completion certificates</p>	<p>Request to ammend as below -</p> <p>Bidder shall have an average minimum annual turnover of Rs. 12 Crore in the areas IT/Telecom/VoIP/Unified Communication put together in the last three (3) financial years ending March 31, 2023.</p> <p>Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be enclosed. OR Statutory auditor/CA certificate mentioning turnover of the bidder should be enclosed.</p>	No change
<b>Core Switch</b>					

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
93	Local Area Network (LAN) including management	105	Switch should have 1) 48 x 1/10/25G ports 2) Atleast 4 x 40/100G ports populated with required 40G transceivers/DAC cables. 3) Atleast 1 No of 100 G ports with required transceivers to connect Core to Core switch	For better understanding and clarity request you to please change this to Switch should have 1) 48 x 1/10/25G ports 2) Atleast 4 x 40/100G ports populated with required 40G transceivers/DAC cables. 3) Out of 4x40/100G UL ports 1 No of 100 G ports with required transceivers to connect Core to Core switch	As per corrigendum-1
<b>Technical Specification for HCI</b>					

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
94	Data Center Technical Specification for Hyperconverged infrastructure (HCI)	93	The Solution should support compute only nodes to add virtual compute capacity to the cluster which can access storage from converged nodes, without incurring any HCI software license cost	<p>Request you to please change this to "The Solution should support compute only nodes to add virtual compute capacity to the cluster, without incurring any HCI software license cost". If the "which can access storage from converged nodes", then we can achieve the additional requirement of "CPU, Memory &amp; Storage Capacity" by adding additional HCI Node to the HCI Infra.</p> <p>We read the requirement is to add the additional "Compute - CPU &amp; Memory" by adding only the Compute Node to the HCI Infra and the license required for the same to be included.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
95	Data Center Technical Specification for Hyperconverged infrastructure (HCI)	94	HCI solution should include min. 2 Qty of interconnect switches, each supporting 42*10/25G, 6x 40/100G ports per switch with redundant power supplies and cooling fans. Each Switch shall provide 4*10G, 2*40G and 4*16G FC for external Ethernet and SAN connectivity.	Request you to please change this to "HCI solution should include min. 2 Qty of interconnect switches, each supporting 42* 25G, 6x 40G ports per switch with redundant power supplies and cooling fans. Each Switch shall provide 4*10G and 2*40G for external Ethernet", should be inline with the connectivity of the interconnect switches with the Core / Distribution layer switches as per the Architecture requirement. As per the Point No. 12 clause the HCI Node is configured with "Min. 2* 25Gbps network ports per server node to connect with HCI switch and there is no FC HBA is requested in the HCI Node".	No change
96	Data Center Technical Specification for Hyperconverged infrastructure (HCI)	93	HCI Node and SDS layer should be from same OEM to avoid any compatibility issues.	Please remove this clause .....as Its propoaitery to one OEM and In industry most of the SDS softwares are indepent of the underlying Server HW and also helps to avoid vendor locking	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
97	Chapter -II, 2. Term of Reference & Definitions,	13	<b>Similar type of work</b> means supplying, installation, testing & commissioning of ip-pbx, lan, wi-fi, ip cctv, biometric attendance system, server & storage as mentioned in the tender document elsewhere.	<b>Similar type of work</b> means supplying, installation, testing & commissioning of ip-pbx, lan, wi-fi, ip cctv, server & storage as mentioned in the tender document elsewhere. <b>As biometric attendance system is not generally the part ICT projects. So we request you to remove it.</b>	No change
98	Chapter-VII 7. Timeline & Payment terms,	40	(a) Payment of "X" % of charges for the comprehensive project work, towards supply of complete material any, against documentary evidence, shall be released only after receipt of material at IIM Sirmaur on receipt of the following documents: - <ul style="list-style-type: none"> <li>· Invoice.</li> <li>· Warranty Certificate.</li> <li>· Delivery Challan (duly signed &amp; stamped by authorized officials of consignee).</li> <li>· PDI report</li> <li>. E-way bills for delivery of the material and equipment at site</li> </ul>	(a) Payment of "X" % of charges for the comprehensive project work, towards supply of complete material any, against documentary evidence, shall be released only after receipt of material at IIM Sirmaur on receipt of the following documents: - <ul style="list-style-type: none"> <li>· Invoice.</li> <li>· Warranty Certificate.</li> <li>· Delivery Challan (duly signed &amp; stamped by authorized officials of consignee).</li> <li>· PDI report</li> <li>. E-way bills for delivery of the material and equipment at site</li> </ul> <b>Please allow the Pro-Rata basis payment terms.</b>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
99	Chapter-VII 7. Timeline & Payment terms,	50	Payments will be done only on the back-to-back basis on receipt of the related payment/funds from the end client, subject to satisfactory acceptance of the deliverables from the end client as per the submission of the required document.	Payments will be done only on the back-to-back basis on receipt of the related payment/funds from the end client, subject to satisfactory acceptance of the deliverables from the end client as per the submission of the required document. <b>Please define the days to receive the payment for proper bid clarity.</b>	As per corrigendum-1
<b>Technical Specification of 04 Port industrial Grade Switch</b>					
100	CHAPTER-V	29	5.2.3 Local Area Network (LAN) including management (Picture - Network Architecture Approach)	This design has single point of failure at multiple instances like Router and Firewall, , also the distribution switch is single which is again an issue.	No change
101		29	5.2.4 WI-FI Systems Point b) Reliability: The on-premises controller provides industry leading IPv6 roaming with secure access.	Can this be elaborated.? "Industry leading IPv6 Roaming with secure access is not clear."	RFP is self explanatory
102		29	5.2.4 WI-FI Systems Poin f) Enterprise Wireless Mesh solutions allow access points to dynamically establish wireless connections in hard-to-connect locations.	Kindly remove as it is not used anymore	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
103	Annexure XVIII	103-104	1.2.2. Local Area Network (LAN) including management - Technical Specification of Core Switch -		
104			Sl.No. 1 - Switch should have 1) 48 x 1/10/25G ports 2) Atleast 4 x 40/100G ports populated with required 40G transceivers/DAC cables. 3) Atleast 1 No of 100 G ports with required transceivers to connect Core to Core switch	Should be 6X40G/100G ports as there are 5 distribution switches in total.	As per corrigendum-1
105		104	Sl.No.9 - Switching system shall have minimum 70K MAC Addresses and 1K VLANs.	MAC and VLANs are lower on scale for a core switch MAC should be 256K and VLAN should be 4K	No change
106		104	Sl. No.10 - Switch should support minimum 18K ACLs, 16K Multicast and 32K IPv4, 16K IPv6 Routes..	Kindly change to “ Switch should support minimum 1K ACLs, 100K IPv4 Multicast and 200K IPv4, 100K IPv6 Routes	No change
107		104	Sl.No.11 - Switch shall support application visibility and traffic monitoring with sflow/jflow/netFlow support.	Kindly change to “ Switch should support sflow/jflow/netFlow entries”	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
108		104	Sl.No. 14 - Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES), 802.3x, 802.1p, 802.1Q, 1588v2/NTP.	Kindly change as "Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 1588v2 "	No change
109		104	Sl.No. 15 - Should support AES-256 support with MACSEC-256 encryption algorithm on hardware.	Kindly Remove the point	No change
110		104	Sl.No.16 -Must support BGP, IS-IS, VRF, EVPN, VXLAN, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP) from Day 1	Kindly change as "Must support BGP, MPLS, IS-IS, VRF, VXLAN, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP) from Day 1 ."	No change
111		104	Sl.No.18 - Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, and routing protocols such as BGPv4,IS-IS v4 or equivalent & RESTCONF from day one.	Kindly change as " Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, and routing protocols such as BGPv4, IS-ISv4 or equivalent & Open flow 1.3/NETCONF/ RESTCONF, YANG from day one.	No change
112		104	Sl.No.19 - Switch should support port security, DHCP snooping, Spanning tree root guard, First Hop Security.	Kindly change as "Switch should support Dynamic ARP Inspection, DHCP snooping, Spanning tree root guard, IPv6 Security.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
113		105	Technical Specification of Distribution Switch -		
114		105	Sl.No. -2 Switch should have min. 24no. 1/10G ports and 2 no of 40/100G ports for Uplink/ Stacking connectivity	Kindly change as “ Switch should have min. 24no. 1/10G ports scalable to 28 no. in future without any change in the hardware.	No change
115		105	Sl.No. 3 - Switch shall have 2 GB RAM and 2 GB Flash	Kindly Change as “ Switch shall have 4 GB RAM and 16 GB Flash”	No change
116			Performance :		
117		105	Sl.No. 8 -Switching system shall have minimum 30K MAC Addresses and 1K VLANs.	MAC and VLANs are lower on scale for a Distribution switch MAC should be 100K and VLAN should be 4K	No change
118		106	Sl.No. 9 -Switch should support minimum 5K ACLs, 8K Multicast and 32K IPv4, 16K IPv6 Routes..	Kindly change as “Switch should support minimum 1K ACLs, 36K IPv4 Multicast and 72K IPv4, 36K IPv6 Routes..	No change
119		106	Functionality -		
120		106	Sl.No.13- Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES), 802.3x, 802.1p, 802.1Q, 1588v2/NTP	Kindly change as “Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q “	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
121		106	Sl.No.14- Should support AES-128/256 support with MACSEC encryption algorithm on hardware	Kindly Remove the point	No change
122		106	Sl.No.15- Must support BGP, MPLS, IS-IS, VRF, EVPN, OSPF, PIM SM and VRRP/HSRP, must have RIP, OSPF routed access, PBR, VXLAN.	Kindly change to “Must support BGP, IS-IS, VRF, VXLAN, OSPF, PIM SM, and VRRP/HSRP, must have RIP, OSPF routed access, PBR /Equivalent .”	No change
123		107	Technical Specification of Layer 2, 24 Port PoE Access Switch -		
124		107	Sl.No.3 - All 24 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 370 W day-1 and scalable to 740W.	Kindly Change as “ All 24 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 360 W day-1 and scalable to 720W.”	No change
125		107	Sl.No.5 - Switch should have minimum 1 GB RAM and 1 GB Flash.	Kindly change it as “ Switch should have minimum 2 GB RAM and 2 GB Flash.”	No change
126		107	Sl.No.6 - Switch should have dedicated slot or ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.	Kindly change it as “ Switch should have dedicated slot/Port for modular stacking, in addition to asked uplink ports. Should support for minimum 160 Gbps of stacking throughput with 8 switch in single stack.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
127		107	Performance :		
128		107	Sl.No.9- Switch shall have minimum 16K MAC Addresses and 250 active VLAN.	Kindly change as "Switch shall have minimum 16K MAC Addresses and 2K active VLAN.	No change
129		107	Sl.No.14 - Switch should have 4 MB or more packet buffer	Kindly Change as "Switch should have 3 MB or more packet buffer."	No change
130		107	Functionality :		
131		107	Sl.No.17 -Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.	Kindly remove as VXLAN is not needed on edge switches	No change
132		107	Sl.No.20 -Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbour Discovery Inspection and IPv6 Source Guard.	Kindly Remove this as this is specific to FHS and to a particular OEM	No change
133		108	Sl.No.21 - Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.	Kindly change it as "Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment."	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
134		108	SI.No.22- Switch or solutions must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.	Kindly remove	No change
135		108	SI.No.26- Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.	Kindly remove	No change
136		108	SI.No.27- The switch should be IPv6 ready logo certified day1	Kindly remove	As per corrigendum-1
137			1.2.3. WI-FI Systems		
138		127	Technical Specifications of Wireless Controller		
139		127	SI.1 - The network solution shall include Wireless LAN (WLAN) based on a centralized WLAN architecture, in which a central on premises controller (deployed in redundancy), makes all the decisions for on the wireless network and is in control of all the Access Points.	Kindly Change to" The network solution shall include Wireless LAN (WLAN) based on a centralized /Cloud Managed WLAN architecture, in which a controller /Management Platform (deployed in redundancy), makes all the decisions for the wireless network and is in control of all the Access Points.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
140		127	SI.5 - The WLC shall be manageable through SNMP.	Kindly change to "The Controller shall be manageable through SNMP/APIs/SDKs/Https."	No change
141		127	SI.10 - Must be compliant with IEEE CAPWAP or equivalent for controllerbased WLANs.	Kindly change to " The communication between the AP and the controller must be secured by CAPWAP tunnel/equivalent/Encryption.	No change
142		127	SI.11 -Should have at least 4 x 1/10G Copper or Fibre or combination interface. In case of fibre ports, appropriate 10G transceivers or 10G Direct attached cables of minimum 3 meters must be provided for connectivity with Core switch.	Kindly Change to " In case of Appliance based Controller, Should have at least 4 x 1/10G Copper or Fibre interface. In case of fibre ports, appropriate 10G transceivers or 10G Direct attached cables of minimum 3 meters must be provided for connectivity with Core switch. WLC should have 40Gbps of throughput	No change
143		128	SI.14 - Should support minimum 4000 VLAN ID or WLAN.	Kindly change to "Should support minimum 1000 VLAN and 15 WLAN per AP	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
144		128	Sl.22 - Should support dynamic bandwidth selection among 20MHz, 40MHz, 80MHz & 160MHz channels, ensuring one access point on 20Hz and another on 160 MHz channel connected on the same controller at same WLAN group.	Kindly change as "Should support dynamic bandwidth selection among 20MHz, 40MHz & 80MHz channels, ensuring one access point on 20Hz and another on 80 MHz channel connected on the same controller at same WLAN group." 160 Mhz channel is available but not recommended for 802.11ax.	No change
145		128	Sl. 24- Must support RF Management with 40 MHz and 160 MHz channels with 802.11n & 802.11ac wave 2 & 802.11ax	Kindly change as "Must support RF Management with 40 MHz and 80 MHz channels with 802.11n & 802.11ac wave 2 & 802.11ax." 160 Mhz channel is available but not recommended.	No change
146		129	Sl.36- Should support SNMPv3, SSHv2 / SSL for secure management.	Kindly remove as now a days it is not needed.	No change
147		Firewall Section A point 4	Interfaces required: 8 x 1GBASE-T Ethernet interfaces (RJ- 45), 8 x 10 Gigabit (SFP+) Ethernet interfaces.	Interfaces required: 8 x 1GBASE-T Ethernet interfaces (RJ- 45),8x 1 Gigabit (SFP) Interface, 8 x 10 Gigabit (SFP+) Ethernet interfaces with fully loaded Transceivers.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
148		Firewall Section B point 1	4.5 Gbps of threat prevention with App Control, Anti Virus, Anti Bot, IPS, File blocking and logging enabled.	Firewall Throughput should be at least 150 Gbps on IPV6/IPV4 or higher from day one. and at least 10 Gbps of threat prevention throughput (Firewall+IPS+Application Control +Antivirus/Antimalware enabled) with real world/enterprise/Production mix throughput from day one and scalable to 15 Gbps of Threat prevention without changing the hardware.	No change
149		Firewall Section B point 2	Firewall should support at least 1,000,000 concurrent sessions	Firewall should support at least 8,000,000 concurrent sessions and scalable to 14 million without changing the hardware.	No change
150		Firewall Section B point 3	Firewall should support at least 100,000 connections per second	Firewall should support at least 400,000 new sessions per second and scalable to 700000 without changing the hardware	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
151		Firewall Section C point 6	Firewall should support Nat66 (IPv6-to-IPv6) or equivalent, dual stack, Nat 64 (IPv6-to-IPv4) functionality	Firewall should support Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), NAT46 (IPv4 to IPv6) functionality	No change
152			Additional Point	Firewall should support minimum 5 Virtual Firewalls license from day one with different policies for each Virtual Firewall and can be independently managed in single appliance	No change
153			Additional Point	Solution must have dedicated reporting hardware appliance with minimum 4 x RJ45 GE and 8TB storage from day one and complete Solution must be from same OEM	No change
154			Additional Point	3 year license of Firewall, VPN (Ipsec), SSL VPN, IPS, Application Control, Web/URL filtering, Anti-Bot, APT, Gateway Antivirus etc, Antispam, Sandboxing, 24*7 Support, RMA & Advance hardware Replacement should be quoted with the solution	No change
			Core Switch		

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
155	1.2.2	104	System's software signatures / authentication should be checked for integrity. System or process should be capable to understand that system OS are authentic and unmodified.	Can a CRC check on the OS be enough to meet this criteria	As per corrigendum-1
156		106	Switches, transceivers, wireless controllers and access points should be from the same OEM for better integration.	<b>Request to please rephrase this clause as "Switches(Except industrial grade switches), transceivers, wireless controllers and access points should be from the same OEM for better integration."</b>	No change
157			Layer 2, 24 Port PoE Access Switch		
158		108	Should support minimum 11K IPv4 routes or more	<b>Request to please rephrase this clause as "Should support minimum 1K IPv4 routes or more" for wider participation</b>	No change
159		109	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.	MACSec would not be required in a campus solution hence we request you to kindly remove this feature from this clause.	No change
			Layer 2, 12 Port PoE Access Switch		

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
160		109	Should provide minimum 185 W PoE budget	<u>Request to rephrase this clause as "Should provide minimum 124 W PoE budget."</u> Request you to make this change as this is a standard and is available with all the OEM's. 185W PoE budget in 12Port switch is not a standard and is specific to an OEM.	No change
			<b>Access Point - Indoor AP</b>		
161		131	Should support Way finding within covered areas to start with.	<b>Request to relax this OEM specific clause for wider participation</b>	No change
162		131	Should not require any calibration for configuration of BLE location based messaging	<b>Request to relax this OEM specific clause for wider participation</b>	As per corrigendum-1
163		131	Should support virtual BLE technology	<u>Request to please rephrase this clause as" Should support Zigbee/BLE/virtual BLE technology"</u> for wider participation	As per corrigendum-1
164		131	Should have following compliances:- UL 60950-1 CAN/CSAC22.2 No. 60950-1 FCC Part 15.247, 15.407 / 15.107 / 15.109 RSS247 ICES003	<u>Request to please rephrase this clause as "Should have following compliances:- EN/UL/CAN/CSAC22.2 No. 60950-1 FCC , RSS"</u>	No change
			<b>Access Point - Outdoor AP</b>		

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
165		131	Should be Outdoor Access Point 4 X 4 MU – MIMO. SU MIMO On both the bands AP should support 802.11ax standards	<b>Request to rephrase this clause as "Should be Outdoor Access Point 2x2 MU – MIMO. SU MIMO On both the bands AP should support 802.11ax standards"</b> Request you to make this change as the density in outdoor areas can be easily sufficed with 2x2 APs . 4x4 AP's are normally required in very very high density areas like auditoriums/stadiums etc.	No change
166		131	Should have Data Rate Support - 2.5 Gbps or higher	<b>Request to rephrase this clause as "Should have Data Rate Support - 1.7 Gbps or higher"</b> Request you to make this change as the density in outdoor areas can be easily sufficed with 2x2 APs . 4x4 AP's are normally required in very very high density areas like auditoriums/stadiums etc.	No change
167		131	Should have Bluetooth support	Request to please relax this clause for wider participation	No change
168		131	Should have 10/100/1000/2500 BaseT RJ45 interface that supports 802.3at PoE	<b>Request to please rephrase this clause as "Should have 10/100/1000 BaseT RJ45 interface that supports 802.3at PoE "</b>	No change
169		132	Should have1 - 10/100/1000/2500 BASE-T auto-sensing RJ-45 with PoE 1	<b>Request to please rephrase this clause as"Should have 1 – 10/100/1000BASE-T auto-sensing RJ-45 with PoE In"</b>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
			– 10/100/1000BASE-T auto-sensing RJ-45		
170		132	Should support Artificial Intelligence (AI) Driven and Dynamic debugging with automatic RF Optimization feature	Request to please rephrase this clause as " <b>Should support Artificial Intelligence (AI) and Machine Learning .</b> " This is again OEM specific clause and should be made generic for wider participation	As per corrigendum-1
171		132	Compliance Standards - UL 60950-1 CAN/CSAC22.2 No. 60950-1, FCC Part 15.247 / 15.407 / 15.107 / 15.109 and RSS247, ICES003 (Canada)	<b><u>Request to please rephrase this clause as "UL/IEC/EN 60950-1 FCC , RSS"</u></b> . OEM Specific certifications , kindly make this standard for wider participation	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
172	5. Scope of Work	Page 19 of 149	IIM Sirmaur wishes to set up LAN for the entire campus and thus providing high connectivity, scalable, reliable, secure and robust network architecture. It is intended to build a new network for IIM Sirmaur that will provide latest technology benefits like data security, guaranteed application response, reliability etc.	<p>IIM SIRMAUR website is <a href="https://www.iimsirmaur.ac.in/">https://www.iimsirmaur.ac.in/</a> need to protect from Malicious internet users, BOT traffic, DDOS traffic, Layer 7 attacks and web based attacks.</p> <p>HPC asked in the RFP and applications run on HPC like student management system, content solution, institute ERP, documentation automation solution etc need to protect from internal as well as external malicious users.</p> <p>Only firewall can't protect from all security threats and education network is more prone to attacks as they carry lot of student data and new innovation data.</p> <p>Kindly refer few year 2022 reports on education vertical.  <a href="https://www.infosecurity-magazine.com/news/education-experienced-44-increase/">https://www.infosecurity-magazine.com/news/education-experienced-44-increase/</a>  <a href="https://www.graphus.ai/blog/education-is-now-the-top-sector-for-ransomware-attacks/">https://www.graphus.ai/blog/education-is-now-the-top-sector-for-ransomware-attacks/</a>  <a href="https://timesofindia.indiatimes.com/india/indian-education-sector-biggest-target-of-cyber-threats-remote-learning-among-key-triggers-report/articleshow/91234420.cms">https://timesofindia.indiatimes.com/india/indian-education-sector-biggest-target-of-cyber-threats-remote-learning-among-key-triggers-report/articleshow/91234420.cms</a></p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
				Kindly asked for Security solution considering Web application firewall, DDOS, ADC. Kindly review Solution specifications attached for kind persual.	

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
173				<b>Technical Specifications for Application Availability, Security and Performance</b>	
174	NA	NA	NA	Proposed Solution shall include Load Balancer, Global Server Load balancer, DNSSEC feature, DNS DDOS and Network DDOS, Web application firewall, SSL VPN, Single-signon functionalities. Bidder can propose these functionalities on a single software solution or multiple software solutions from same OEM.	No change
175	NA	NA	NA	The software solution must support Programmability to support Automation, native integration and orchestration. It should enable declarative provisioning and configuration of the software solution across cloud environments and integration with automation and CI/CD tools including Ansible, Jenkins, and Terraform.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
176	NA	NA	NA	<p>The document/cross reference provided by the OEM for each clause asked in the RFP must be available on a GLOBAL public domain and the proposed solution must support all technical features specified in the RFP from day 1. OEM Simple undertaking without any test results/proofs claiming any performance number will not be accepted.</p>	No change
177	NA	NA	NA	<p>Minimum 4x1/10G Base-T port and 4x10G/25G SFP+/ SFP28 ports with 2 Nos populated SFP+ Module in day-1.  Maximum Concurrent Connections: ≥18 Million  Layer 4 - 250K and Layer 7 - 750K connection/requests per second  The proposed hardware must support minimum 10 Gbps of SSL throughput (bulk encryption)  Should provide at least 15 Gbps of L7 throughput  Appliance must provide minimum SSL TPS of 12K TPS with RSA 2K keys and 10K TPS with ECC ECDSA P-256</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
				<b>Application Availability and performance Functionality</b>	
178	NA	NA	NA	<p>The proposed solution must provide below application optimization features:</p> <p>1) TCP Optimization: Should be able to modify TCP parameters like keep alive interval, maximum RTO, window size, Nagle Algorithm, delay window control, packet loss ignore rate, flow control, congestion control speed etc. on the fly to improve application performance</p> <p>2) Compression: Solution should be able to provide cost-effective offloading of traffic compression processing to improve page load times and reduce bandwidth utilization.</p> <p>3) Caching: Solution should be able to do caching to reduce network traffic and increase application performance</p>	No change
179	NA	NA	NA	<p>The proposed solution must provide Active-Active DC functionality and should provide global server load balancing between DC and DR on-premise/cloud based.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
180	NA	NA	NA	The offered solution should provide Authoritative DNS capability to understand records like A, AAAA,CNAME, DNAME, HINFO, MX, NAPTR, NS, PTR, SOA, SRV, TXT	No change
181	NA	NA	NA	The proposed software solution must be able to load balance both TCP and UDP traffic from L3 to L7. The proposed solution must have the capability to provide SSL offloading using both RSA and ECC based keys	No change
182	NA	NA	NA	Supports DNS SEC eg digitally sign DNS answers. This enables the resolver to determine the authenticity of the response, preventing DNS hijacking and cache poisoning. These signed DNS responses can be used in conjunction with the dynamic DNS system to enable global server load balancing.	No change
183	NA	NA	NA	Server Load Balancer should support SQL-based querying for the following databases for health checks: • Oracle • MSSQL • MySQL • PostgreSQL • DB2	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
184	NA	NA	NA	<p>The proposed solution should provide the application and DNS visibility and reporting with below metrics and entity for each application:</p> <ul style="list-style-type: none"> <li>• Client IP addresses and subnets as well as geographical regions</li> <li>• Total DNS transactions as well as Average and Max Transactions/sec</li> <li>• Most commonly requested domains</li> <li>• Server Latency and Page Load times</li> <li>• Virtual Server and Pool server performance</li> <li>• Page Load Time</li> <li>• Response code</li> <li>• OS and Browser</li> </ul>	No change
185	NA	NA	NA	<p>The proposed solution should support dynamically create L4/L7 services on LB systems and load balance network traffic across the services via Monitoring the orchestration API server, the service should be able to modify the LB system configuration based on changes made to containerized applications. The service should support Kubernetes or Open Shift either CLI/API.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
				<b>Application Security functionality</b>	
186	NA	NA	NA	The solution should provide OWASP Compliance Dashboard which provides holistic and interactive interface that clearly measures app's compliancy against the OWASP Application Security Top 10 and also provide suggestions/shortcuts to address the compliances and configure policies for it.	No change
187	NA	NA	NA	The WAF solution must support Security Policy to be applied per application, rather than one single policy for an entire system.	No change
188	NA	NA	NA	The Solution must protect the Application against credential theft from man-in-the-middle (MITM) and MITM browser attacks by encrypting and obfuscating the form parameters. The Solution must be flexible enough to configure the data encryption level, URL list, parameters, etc., to be protected against such attacks.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
189	NA	NA	NA	<p>The Solution must protect against HTTP, HTTPS and Application layer DOS and DDOS attacks including stress-based DOS and Heavy URL attacks. The solution must support all the common web application vulnerability assessment tools (Web application scanners) including Acunetix, Qualys, Rapid 7, IBM Appscan, etc (or) Equivalent Gartner vulnerability assessment tools to virtually patch web application vulnerabilities. Necessary logs to be generated for audit and compliance.</p>	No change
190	NA	NA	NA	<p>The Solution must detect and mitigate L7 DDoS attacks originating from a bot-net using application based behavioral analysis that learns application level parameters like HTTP request methods, reply types, average object size and more.</p>	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
191	NA	NA	NA	The solution should be able to "clock" error responses to hide sensitive server related information in the response body and response headers. It should also facilitate hiding/masking sensitive parameters in logs policy wise. Solution should support File Upload Violation & scanning for malicious content in Uploads through ICAP integration.	No change
192	NA	NA	NA	System should support inbuilt ability or integration with any 3rd party solution to encrypt the user credentials in real time at the browser level (data at rest) before the traffic hits the network so as to protect the credentials especially password, Aadhar number or any other sensitive parameter to protect from cyber actors, key loggers and credential stealing malware residing in the end user's browsers. Necessary logs to be generated for audit and compliance.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
193	NA	NA	NA	The solution must distinguish between browsers and bots which are able to execute Java script by using advanced techniques such as browser capability challenge and CAPTCHA challenge to do device fingerprinting. Should provide PCIDSS compliance requirements for web application servers. Necessary logs to be generated for audit and compliance.	No change
194	NA	NA	NA	Solution should integrate with BoT prevention solution. All public facing internet-based HTTP (Port 80) and HTTPS (Port 443) applications that are integrated in Antibot Solution shall be routed first to the Anti-bot on the cloud for scanning & only genuine traffic shall be forwarded to the application. Cloud solution should exist in INDIA.	No change
195	NA	NA	NA	Solution should be able to protect specific endpoints across online applications, including websites, mobile apps and APIs.	No change
196	NA	NA	NA	Solution should provide real-time decision engine to detect and mitigate automated transactions aimed at the protected applications.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
197	NA	NA	NA	Solution should provide hundreds of signals to detect automated behavior by integration of the network, browser/device, and user interaction. Solution should leverage threat intelligence across a global customer network and use artificial intelligence (AI) to create new countermeasures and stop the most sophisticated attackers.	No change
				<b>VPN FUNCTIONALITY</b>	
198	NA	NA	NA	Should support minimum 1000 concurrent VPN users from day one and scalable to 2000 users in future. The Solution should support both Split Tunnel and Full Tunnel modes.	No change
199	NA	NA	NA	The Solution must provide both Browser and Client based SSL VPN. Solution must support SSL VPN for Windows, MAC OS, Linux, Ubuntu, CentOS, Android, and IOS based devices. Must be compatible to common Browsers: IE, Firefox, Chrome, Safari etc.	No change
200	NA	NA	NA	The Solution should support IPv4 and IPv6. VPN must support automatic IKE (Internet Key Exchange) and manual key exchange. The Solution should support SSL VPN through DTLS (UDP) for improved performance.	No change

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
201	NA	NA	NA	The Solution should also support site-to-site IPSEC VPN.	No change
202	NA	NA	NA	<p>"The Solution should be able to support robust endpoint posture inspection and deny access for non-compliance endpoints. The Solution must support the following checks:</p> <ul style="list-style-type: none"> <li>* Able to perform Antivirus/Malware software checks, including checks for Enabled State, Engine &amp; Database version, Last Scan, and Last Update of the antivirus software.</li> <li>* Able to perform domain check to auto connect to VPN when outside the office network.</li> <li>* Able to perform IP address / Geolocation check to restrict access from unwanted locations.</li> <li>* Able to perform Operating System, Windows Registry, File or Process checks.</li> <li>* Able to check if mobile devices have been jailbroken."</li> </ul>	No change
				<b>MANAGEMENT</b>	

S.no.	Chapter No.	Page No.	Clause as per RFP	Clarification Sought	Responses to Pre-bid Queries
203	NA	NA	NA	Proposed Solution should be managed from dedicated Central Management solution i.e. Administration /Management /Logging /Reporting, etc.	No change
204	NA	NA	NA	The proposed Management solution should be capable for backup and restoration of configuration, traffic logs, system logs, etc.	No change
205	NA	NA	NA	Proposed Solution and Management solution should be accessible through GUI(including TLS 1.0, TLS 1.1, TLS 1.2 or TLS 1.3) & SSH(including V3)	No change
206	NA	NA	NA	If Central management solution is not available at DC then the WAF software solution should have capability to be managed locally or through secondary management at DR and vice-versa.	No change
207	NA	NA	NA	Should have diagnostics capability support (e.g. logs, core dumps, Syslogs, configurations etc.) which can be used to share with Technical support team in case of any malfunctioning by the instances. Should have online vulnerability and configuration diagnosing tool.	No change
				<b>Certification</b>	

<b>S.no.</b>	<b>Chapter No.</b>	<b>Page No.</b>	<b>Clause as per RFP</b>	<b>Clarification Sought</b>	<b>Responses to Pre-bid Queries</b>
208	NA	NA	NA	Proposed OEM Should have ISO 9001 and ISO 27001 certificate	No change
209	NA	NA	NA	The solution must support IPV6 logo ready, or IPV6 ready.org phase 2 certifications	No change
210	NA	NA	NA	The Software Solution or its Operating system shall be tested and certified for EAL 2 / NDPP (Network Device Protection Profile) / NDcPP (Network Device collaborative Protection Profile) or above under Common Criteria program for security related functions or under Indian Common Criteria certifications scheme (IC3S) by STQC, DEIT, Govt. of India.	No change