

16x2



INVITATION TO BID

For the Supply of Centralized Wifi Network, including Branded cat 6 cable etc and KVM Switches and Ethernet POE+ LAN Switches

Pakistan Telecom Authority, (a telecommunication regulator in Pakistan) invites sealed bids from the original manufacturers / authorized distributors / suppliers / resellers Contractors etc. having three years of experience and registered with Income Tax and Sales Tax Departments and who are on Active Taxpayers List of the Federal Board of Revenue for supply of following IT Equipment:

S.No.	Description	Quantity
A	Branded Centralized Wireless Network (IEEE 802.11a/b/g/n/ac Wave 2 Standard PoE+) with complete mounting kit same brand	
	Access Points with power adopter	18
	Centralized Controller Hardware	1
	Branded Base-T Ethernet copper cable Cat 6, 3000 feet (2 Nos). RJ 45 Connectors (2 Boxes)	2X Cat 6 Cable Boxes 2 X RJ 45 Connectors Boxes
	Cable Steel Duct 70 Feet Galvanized, 12 X 6, 18" gage , purported, with cover	1
	PVC Pipe 2 inch white color with acc	600 Feet (As per actual)
	Branded patch cord 1 meter	36
	Steel Flexible Bundle	3
	Cable installation and laying charges	1 job
B	IP BASED KVM SWITCHES (SEPARATE HARDWARE REQUIRED)	
	Branded 6 port IP based KVM Console Switch with KMM LED display (complete Solution) with 18.5 inch LED screen with Rack mountable-Sliding-Folding-tray, with all required cables for server connectivity, upgradable to Digital switch (2 IP KVM Switches with 2 KMM Integrated LED consoles) with 16 USB SIP module (cables) for server , switch and KMM connectivity.	2 KVM switch 2 LED Screen 16 Cables
C	ETHERNET POE+ LAN SWITCHES (SEPARATE HARDWARE REQUIRED)	
	24 port POE+ Branded Switches, 2X10G uplinks or above	5
	10G SFP + (Transceivers)	12
	Single mode Fiber patch cords LC/LC (Duplex)30 meter or above.	12

Bidding documents, containing detailed terms and conditions, method of procurement, procedure for submission of bids, bid security, bid validity, opening of bid, evaluation criteria, clarification / rejection of bids, performance guarantee etc. are available at the office of the undersigned. Price of the bidding documents is Rs. 500/- (in shape of pay order / bank draft, in favor of PTA). Bidding documents can be downloaded from (www.pta.gov.pk) free of cost.

The bids, prepared in accordance with the instructions in the bidding documents, must reach at PTA Headquarters F-5/1, Islamabad on or before **3rd October, 2018 by 10:30 AM**. Technical Bids will be opened the same day at **(11:00 AM)**. This advertisement is also available on PPRa website at www.ppra.org.pk.

Muhammad Salman Zafar, Director (ICT)
PTA Headquarters, F-5/1, Islamabad.
Phone: 051-2878134, Fax Number: 051-9225368

PTA (I)



BIDDING DOCUMENTS

Sealed bids are invited from well reputed and authorized dealers having Tier-1 / Tier -2 level dealership, registered with Sales Tax and Income Tax Department, having at least 3 years of relevant business experience for the procurement of following items,

S.No.	Description	Quantity
A	Branded Centralized Wireless Network (IEEE 802.11 a/b/g/n/ ac Wave 2 Standard PoE+) with complete mounting kit same brand	
	Access Points with power adopter	18
	Centralized Controller Hardware	1
	Branded Base-T Ethernet copper cable Cat 6, 3000 feet and (2 Nos). RJ 45 Connectors (2 Boxes)	2X Cat 6 Cable Boxes 2 X RJ 45 Connectors Boxes
	Cable Steel Duct 70 Feet Galvanized, 12 X 6, 18” gage , purported, with cover	1
	PVC Pipe 2 inch white color with acc	600 Feet (As per actual)
	Branded patch cord 1 meter	36
	Steel Flexible Bundle	3
	Cable installation and laying charges	1 job
B	IP BASED KVM SWITCHES (SEPARATE HARDWARE)	
	Branded 8 port IP based KVM Console Switch with KMM LED display (complete Solution) with 18.5 inch LED screen with Rack mountable-Sliding-Folding-tray, with all required cables for server connectivity, upgradable to Digital switch (2 IP KVM Switches with 2 KMM Integrated LED consoles) with 16 USB SIP module (cables) for server , switch and KMM connectivity.	2 KVM switch 2 LED Screen 16 Cables
C	Ethernet POE+ LAN Switches (SEPARATE HARDWARE REQUIRED)	
	24 port POE+ Branded Switches, 2X10G uplinks or above	5
	10G SFP + (Transceivers)	12
	Single mode Fiber patch cords LC/LC (Duplex)30 meter or above.	12

Detailed specifications of above-mentioned items are provided at Annex-C of this document. Notice of the bids issued on PTA’s/PPRA’s websites is part of the bidding document.

Key Terms and Conditions

1. GENERAL INFORMATION:

- a. Bidding documents duly completed in all respect will be received on or before 3rd October 2018 up to 1030 AM. The submission and evaluation of bids will be carried out under the “*Single Stage Two Envelop Procedure*”. Technical bids will be opened by Technical Evaluation Committee, at PTA HQs on the same day at 1100 AM, in presence of bidder’s representative, who may choose to attend.
- b. Bid will comprise of single package containing two separate sealed envelopes. One envelop will contain the “Technical Proposal” and the second envelop will contain the “**Financial Proposal**”. Technically qualified bidders will be informed the date, time and venue for the opening of financial bids. Financial bids of technically disqualified bidders will be returned un-opened.
- c. Bids should be sent at the address of Director (ICT) Pakistan Telecommunication Authority (PTA), Headquarters F-5/1, Islamabad.
- d. Bidder can quote for any one, or all of the IT equipment mentioned above, depending on relevant dealership in each IT equipment. i.e. a vendor can participate for Wireless Network or for IP KVM Console Switches or for 24 port POE + Switches or a Vendor can participate for all items, Wireless Network with IP KVM Console Switches and Ethernet POE+ Switches.
- e. Annex-A, Annex-B, Annex-C and Annex-D are integral part of technical and financial proposals, which may be read/filled carefully, signed and stamped by the bidders. Further, details of the annexures are mentioned below:
 - i. Annex-A consists of mandatory requirements for bidder(s)
 - ii. Annex-B consists of technical capabilities of bidder(s), which has total 100 marks, whereas minimum qualifying marks are 70%
 - iii. Annex-C consists of technical evaluation of the product and bidder(s) may quote higher specs, however, quoting lower specs shall disqualify the bidder
 - iv. Annex-D, comprises of financial bid format, to be followed by all bidders, The bidder should quote its rates clearly for each item, in the financial proposal in both figures and words without any ambiguity and evaluation will be completed separately for each item.

2. **BIDDER's INFORMATION**

- a. Name of Firm _____
- b. Date of establishment of business
(documentary proof of registration etc.) _____
- c. Address _____
- d. Telephone No _____ Fax No. _____
- e. GST Reg. No _____
- f. National Tax No _____

3. **EVALUATION CRITERIA**

- a. Technical bids shall be opened and evaluated by technical evaluation committee in view of Annex-A, Annex- B and Annex-C. Bidder, obtaining at least 70% out of 100 marks, shall be eligible for the participation in financial bid opening.
- b. Financial bids shall be opened and evaluated by procurement committee of PTA i.e. PC-I as the case may be, on the basis of criteria given in Annex-D.
- c. Work will be awarded to **financially lowest bidder against each item.**
- d. If two or more bidders quote equal lowest price in financial proposals, then the work will be awarded to the one having higher technical marks, in technical evaluation.
- e. The bidder should quote its rates clearly against **each item**, in the financial proposal in both figures and words.
- f. Item A, B and C are completely independent of each other and the bidder should quote its rates clearly in the financial proposal both in figures and words against **each item separately**. Technical and Financial evaluation of the items will be independent of each other.

4. **EARNEST MONEY**

- g. Earnest money will be 3% of the bid amount and will be in the shape of pay order / demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad Earnest money **shall be attached with the financial proposals otherwise proposal** will not be accepted.
- h. **Bids without earnest money will be rejected without any right of appeal.**
- i. **Earnest money of successful bidder will be retained till the warranty / support period.** However, earnest money of unsuccessful bidders will be returned after award of supply order to successful bidder.

- j. In case of cancelation of Supply Order due to default of the supplier, the earnest money shall be forfeited in favor of PTA.

5. PRICES:

- a. **The bidder should quote its rates clearly in Pak Rupees** inclusive of all applicable taxes i.e. GST etc. **in the financial proposal and amount in both figures and words as per format attached at Annex-D**
- b. The rates quoted shall remain valid for 90 days from the date of opening of Technical Proposal, and, any raise in dollar/foreign currency against Pakistani rupees should not be applicable, and, any increase in price shall be borne by the Bidder.
- c. PTA will not bear transportation/carriage charges.

6. PAYMENT PROCEDURE

- a. No advance payment shall be made against the supply of equipment /Hardware/ mentioned in the bidding document.
- b. Payment shall be made on provision of invoice/bill, after delivery of the equipment /software at PTA Headquarters and issuance of satisfactory completion/stock verification/physical inspection certificate by PC-I.
- c. Payment shall be subject to withholding of applicable taxes as per government rules.

7. EQUIPMENT / Hardware

- a. IT equipment should be new, not used or refurbished. The components of the equipment should be assembled by the manufacturer and shall be verifiable by manufacturer.
- b. IT equipment / software should be arranged through the legal channels by clearing all customs/duties/taxes (if any) levied by Government.

8. DELIVERY PERIOD

- a. Delivery of items shall be made within eight (8) weeks' time after issuance of supply order.
- b. Vendor will be responsible for the safe supply of equipment / software at PTA H/Qs Islamabad with the provision of warranty / support as mentioned in the bidding agreement.

9. **AUTHORIZED DEALERPARTNER**

Bidder shall be an authorized dealer//partner, having Tier 1 or Tier 2 partnership / dealership of the quoted brand. Certificate of dealership / partnership from principle manufacturer is required in the name of the authorized dealer / partner of the manufacturer with Authorization letter.

10. **WARRANTY/SUPPORT/INSTALLATION**

- a. Vendor will be responsible for the provision of **free onsite warranty / support / free Software** updates with labor and parts as per detail below;
 - i. Centralized Wireless Network with central controller: **Three years or manufacturer warranty period whichever is higher**, with Three years free software updates including firmware and signatures updates, and **three years free support**.
 - ii. IP KVM Console switches: **One Year or manufacturer warranty period** whichever is higher, with one-year free support/software updates.
 - iii. Ethernet POE+ Switches: Three Years or manufacturer Warranty whichever is higher, with three years Operating system/Firmware, signatures, support.
- b. The warranty period will be considered from the date of actual date of delivery of IT equipment.
- c. Installation and deployment of the Wireless Network and passive work and Ethernet POE+ switches and IP KVM switches will be the responsibility of the vendor, as per deployment design laid down by PTA.

11. **PENALTY**

- a) If the supplier fails to supply equipment within due time of eight weeks, mentioned in this document and supply order, then a penalty of 1% of bid price per week will be charged upto maximum period of four weeks, otherwise supply order will be cancelled and earnest money will be forfeited. However, PTA may ask the second lowest bidder to supply equipment on deposit of earnest money (if released earlier) on the same terms & conditions offered to the first bidder.
- b) In case 2nd lowest bidder also failed to ship the equipment, work order shall be canceled and deposited earnest money shall be forfeited.

- c) A penalty of **1% of the earnest money per day** will be charged if the faulty hardware replacement time exceeds the time mentioned, in the certificate provided as per Annex-B- part B-(3), during the warranty period.

12. DISQUALIFICATIONS

Proposals will be liable to be rejected if any deviation is found from the instructions as laid down in the bid document i.e.

- a. Financial bid is submitted without the required earnest money.
- b. Offers are received after specified date and time.
- c. Specification and other requirements are not properly adhered to or different from those given in the bidding documents.
- d. GST and NTN certificates are not attached.
- e. Vendor is not in Active Taxpayer List (ATL) of FBR.
- f. Relevant experience is less than three years.
- g. Service centre is not in Islamabad/Rawalpindi.
- h. Supplier is not an authorized dealer/partner and warranty provider of the principal manufacturer for Pakistan as per section 9 of this document.
- i. Any inferior product / spec / requirement that mentioned at Annex-C.
- j. Bidder shall quote **only one option**, bids with multiple options will be rejected without any right of appeal.

13. AFFIDAVIT

Affidavit on **Judicial Paper** to the effect that the firm has not been black listed by any government/semi government/autonomous body or company.

14. RIGHTS RESERVED

Pakistan Telecommunication Authority Islamabad reserves the rights to cancel the bid, accept or reject any bid as per PPRA Rules.

CHECKLIST

- | | | |
|-----------|-------------------------------------------------------------------------------------------------|----------|
| a. | Earnest money in shape of bank draft/pay order.
(cheques are not acceptable) | (Yes/No) |
| b. | Relevant documents for Annex A-C(Yes/No) | |
| c. | List of such projects handled with copies of supply order. | (Yes/No) |
| d. | List of clients with telephone numbers and addresses. | (Yes/No) |
| e. | List of employees including technical staff for this project. | (Yes/No) |
| f. | Affidavit on legal paper for not being black listed. | (Yes/No) |
| g. | Copies of authorized dealership/partnership etc. of the
principal manufacturer for Pakistan. | (Yes/No) |
| h. | Specification and other requirements are met | (Yes/No) |
| i. | Service center is at Islamabad/Rawalpindi | (Yes/No) |

Director (ICT)

General Evaluation- Part-A

Annex-A

Part A) Mandatory Requirement *	
1	Firm has to produce Sales Tax and Income Tax Registration.
2	Firm has to produce Authorization dealer, partner, etc Certificate of the principal/manufacture for Pakistan as per section 9 of this bidding document. Tier 1 and Tier 2 partners only with authorization letter for wireless, KVM switch and Ethernet switches.
3	Firm shall be authorized warranty provider on behalf of manufacturer. Documentary proof required.
4	Minimum Three years of relevant experience of the vendor
5	Sales and Service Centers at Islamabad / Rawalpindi
6.	Firm is in active tax payer list of the FBR
7.	Minimum of two supply orders shall be provided by the participating vendors for Centralized Wireless Network Solution, Ethernet Switches and IP KVM switch..
8.	Bidder must Provide Letter from Local representative of Manufacturer or Distributor that the equipment provided will be genuine and imported through legal channels
9.	At least copies of two supply orders against Annex B , S.No.6
10.	Replacement for Faulty Equipment Next Business Day (NBD) (3 Years)

Technical Capabilities of Bidder- Part-B

Annex-B

Part B) General Evaluation*				
Sr. #	Attributes	Max. Score	Points Earned	Criteria
1	Detail of Offices	10		Firm has sales and services offices at four (4) provincial headquarters. Two and half (2.5) points for each p.h.q.
2	Spare Parts Availability	10		Firm has Spare Parts of the quoted model Depot/facility at Islamabad / Rawalpindi.
3	Replacement time for faulty parts under warranty equipment/parts (Certificate has to be produced) (Clause 11(c) referred)	15	15	1-3 working days
			10	4-7 working days
			05	7-14 working days
4	Total strength of relevant Technical Staff at Rawalpindi / Islamabad (List shall be attached with name, designation, qualification and related experience).	20	20	Firm has ten(10) or more relevant technical staff in Islamabad / Rawalpindi.
			15	Firm has more than seven (7) or more up to nine (9) relevant technical staff in Islamabad / Rawalpindi
			5	Firm has five (5) or more upto six(6) relevant technical staff in Islamabad / Rawalpindi
5	Firm Experience (minimum three years' experience required)	20		(4) points will be given for each year of experience, beyond 5 years of mandatory requirement.
6	Projects completed of similar nature (documentary proof be provided i.e. Supply Orders etc.)	25		Five points will be awarded for each project of same nature on provision of supply order/certificate i. Supply of Centralized Wireless Solution with minimum 10 Access Points or more with central controller in single supply order. (Max Five Supply orders, minimum (2)) ii. Supply of 01 or above IP KVM console Switches in single supply order. (Max Five Supply orders, Minimum (2)) iii. Supply of (5) or above Layer2/Layer3 Switches in Single Supply Order.
Sub Total		100		
<i>Minimum qualifying marks are 70% in above table whereas Annex "C" shall be compulsory. All supporting Documents to be attached for all relevant pages of Annex-B.</i>				

TECHNICAL EVALUATION-PART-C

(To be included in Technical Proposal)

Annex-C

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Detailed Specification of Centralized Wi-Fi (Access Points and Central Controller)		
Features	Descriptions For APs and Central Controller	
Hardware Scalability	Enterprise Dual Radio / Dual Band Access point supporting comprehensive feature set	18
	Support for 4x4:4 spatial streams	
	Support for 802.11ac wave 2	
	Support for MU-MIMO	
	Support.80 MHz and 160 MHz Channelization with 256 QAM	
	Support for PoE+/PoE Injector and power adapters	
	Support for 1,733 Mbps data rate in 5 GHz and 600 Mbps data rate in 2.4 GHz	
	Polarization Diversity with Maximum Radio Combining Antenna (PD-MRC) or Cyclic Shift Diversity	
	Minimum number of Users Supported Per Ap 500	
	Support multiple Integrated Antennas min 8 and max16	
	2 ports, auto MDX, auto-sensing 1 x 10/100/1000 Mbps and 1x 2.5 Gbps, RJ-45 Ports, Support for Power over Ethernet (802.3af/at/bt) with Category 5/5e/6 cable	
	Maximum Overall gain of single Antenna should be 8dBi.	
	Access Point should support Space time Block coding (STBC), Low Density Parity Check (LDPC), and Maximum Likelihood Decoding (MLD) for Better Downlink and Uplink Transmission.	
Access Point should be quoted with Mounting Bracket which should have pad-lock support.		
Application Assurance	Access Point should be capable of handling authentication (802.1x) in case of controller failure	
	IPv4, IPv6, dual-stack Support	
	802.1Q (1 per BSSID), dynamic VLAN, VLAN Pooling support	
	Access point should support Radius for 802.1x authentication	
	Support for Band Steering ,Support for Airtime fairness	
	Support for Mesh feature	
Note:- Please Quote Equal or Higher Specs .Inferior Specs will be rejected Technically		

Features	Wireless Controller	QTY
	Controller should support up to 1000 Access Points minimum License support for 18 APs	
	The controller must support a High Availability (HA) mode with cluster configuration, N + 1 configuration supported and N+1 redundancy both co-located and geo-separated	
General	The Wireless Controller must support a distributed forwarding/local breakout architecture in which only client authentication is tunneled to the centralized controller; all client data traffic is forwarded directly on towards its destination via the clients default gateway.	
	The wireless Controller must support separate panels for Control and Data traffic. In case of tunnel traffic all the data of client must transmit through Data Panel.	
	Controller should support up to 25,000 concurrent users session and 60,000 in Cluster configuration.	

	Controller must support 4 x Ethernet Giga bit (100/1000) ports. With 2x 10 SFP+ Ports	
	Wi-Fi Alliance Certification for 802.11 a/b/g/n/ac (wave 1 and wave 2)	
	Support 2000 WLAN SSID on Single Controller	
	Controller should be able to scan the Rogue devices from Access Point. <ul style="list-style-type: none"> i. The controller should be able to send a notification to the administrator when a rogue AP has been detected ii. Neighboring APs should be capable of de-authenticating clients from a Malicious Rogue device i.e. one which is spoofing the BSSID or SSID of a genuine managed AP iii. 	
	Controller should be able to present a customizable dashboard	
	Controller must support integrated Captive portal	
	Support automatic channel adjustment on the Basis of Background scanning and Channel Throughput	
	An integrated element management system (EMS) with capability to be managed by a north bound Network Management system, supporting SNMPv2/v3, RESTful JSON, XML, CLI, GUI, etc.	
	The system should support Standard Hotspot 1.0 and Hotspot 2.0 (Wi-Fi Alliance Pass point).	
	Controller should support GRE Tunnel	
	WISP Configuration support Internal/external URL, walled garden, redirection URL.	
	Controller should support authentication via LDAP, Active Directory and RADIUS sever along with attributes of Radius.	
	Controller should support Guest network and policies, Guest portal must support integrated login page with guest policy disable.	
	Controller must be Compatible with Apple Devices or iOS also support Bonjour Gateway.	
	Controller should support device based policy, controlling window, android, IOS, MAC OS and Linux etc.	
	Implement Wi-Fi alliance standards WMM, WMM-PS, 802.11d, 802.11h and 802.11e.	
	Controller must store Network and Client data for 30 days on integrated drive even on reboot and support TR-69 for remote monitoring and management	
	Controller should support following Security and encryption protocol: WEP, WPA-TKIP, WPA2-AES 802.11i, TKIP, AES	
	Controller should support ACL (Access list) layer 2, layer 3 and layer 4.	
	Controller should support Location based Services	
	Controller should support following Authentication mechanism: MAC and 802.1x	
	License should be easily Transferable to similar Models in case of hardware upgrades.	

S.No.	Feature	Requirements For Aps
1.	Max PHY Rate	1733 Mbps (5GHz) 600 Mbps (2.4GHz)
2.	Wi-Fi Technology	802.11ac (5GHz)802.11n (2.4GHz)

		,ac wave 2.
3.	Concurrent Users	512
4.	Radia Channel-Streams	4x4:4 SU-MIMO4x4:4 MU-MIMO
5.	Antenna Pattern-Per band	4000+
7.	Interference Mitigation	15db
8.	PD-MRC	Yes
9.	RX Sensitivity 2.4/5 Ghz	-104dbm
10.	Channel fly	Yes
11.	Smart Meshing	Yes
12.	USB	Yes
13.	Ethernet Ports	1 X 1Gbe, 1 X 2.5Gbe
14.	WLAN Control and Management	Zone Director/SmartZone/Cloud Wi-Fi/unleashed
15.	Warranty	3 Years for Hardware with Free Software Updates and Support, (NBD)
S.No	Feature	Requirement for Central Controller
1.	Number of Aps Supported	1024
2.	Client Support	25,000
3	Ethernet Ports	4 x 1GbE ports
4.	Authentication Support	802.1x, Local database, Active Directory, RADIUS, LDAP
5.	Guest Network/Captive Portal	Yes
6.	DHCP Server	Assigned or External
7.	AP Discovery and Control	L2/L3
8.	SSID/WLAN Support	2,048
9.	Management Interface	Web Gui/CLI
10.	Remote Management	Yes
11.	Management Protocol	SNMPv3, Restful Json
12.	VLAN Support	Dynamic VLAN
13	Data Plane	Tunneling or Local Breakout
14.	Power Supply	DC or AC
15.	Fans	3 X redundant Fans.
16.	Simplified, Intuitive GUI	Yes
17.	Installation Wizard	Yes
18.	SPoT LBS Location support	Yes
19.	WIDS/WIPS (Rogue AP Detection/Prevention)	Yes
20.	Bonjour Gateway (at AP)	Yes

21.	Capacity-based client admission control	Yes
22.	Band Balancing	Yes
23.	Internal Captive Portal (Radius, AD, LDAP, Local DB)	Yes
24.	AP Survivability for Guest, Captive Portal	Yes
25.	Zero-IT (using 802.1x)	Yes
26.	WLAN Time Scheduling	Yes
27.	User Roles	Yes
28.	Device Policy Control	Yes
29.	Per WLAN ACL Support (L2 white/black list, L3, L4)	Yes
30.	Multi-hop SpeedFlex for mesh testing	Yes
31.	Force DHCP	Yes
32.	ZoneFlex AP discovery	Yes
33.	Restful/JSON API	Yes
34.	Simplified, Intuitive GUI	Yes
35.	Installation Wizard	Yes
36.	SPoT LBS Location support	Yes
37.	WIDS/WIPS (Rogue AP Detection/Prevention), Evil-twin/AP spoofing detection Ad hoc detection	Yes
38.	Bonjour Gateway (at AP)	Yes
39.	Capacity-based client admission control	Yes
40.	Band Balancing	Yes
41.	Internal Captive Portal (Radius, AD, LDAP, Local DB)	Yes
42.	Warranty	Three (NBD) for Both Wifi Aps and Central Controller.

Any inferior Specifications of Wireless Network will be rejected

Bidder shall quote only one option, bids with multiple options will be rejected without any right of appeal.

Authorized Signature of bidder with seal stamp

TECHNICAL EVALUATION-PART-C

(To be included in Technical Proposal)

Annex-C

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Detailed Specifications of 8 ports IP KVM console Switches with Integrated LED console KMM solution (Same Brand)		
S.No.	Feature	Requirements
1.	LED Console Screen	Integrated KMM solution with 18.5 inch LED/LCD, 1 U, Display-Sliding-folding
2.	LED Console Display Type	18.5" TFT LED – LCD module
3.	LED Foldable Screen	Yes (integrated with IP KVM Switch, KMM solution)
4.	LED Back Lighting	Yes
5.	LED Mode Support	Both Legacy Server and Widescreen video modes
6.	Multiple Windows support	Yes
07.	Rail mounting support (included)	Ready Rails static rails for toolless 1U mounting in 4-post racks with square or unthreaded round holes or tooled mounting in 4-post threaded and 2-post (Telco) racks
08.	Operating system Support	Windows, Linux, MAC, Unix etc
09.	Resolution	1680 X 1050 or above
10.	Sliding Rail and mounting kit	Yes, for both LED and KVM switch
11.	KVM remote IP user	1 or above
12.	Chassis	1 U
13.	Communication	TCP/IP,
14.	Management	On board Web interface via browser
15.	Switch access	USB Keyboard/Mouse, VGA Video
16.	Device access	USB, PS2, SUN
17.	Video Support	Analog VGA, SVGA, and XGA, 16:10 widescreen, up to 1680 x 1050 4:3 standard, up to 1600 x 1200
18.	Local users	1 via usb, remote 1 authentic remote user using AES encryption
19.	Authentication	OBWI or DSview or IP over KVM or equivalent
20.	Upgradable	Upgradable to Digital Switch via Key (Included)
21.	Security	Ensure multi-factor authentication over USB and Ethernet with CAC support and provide encrypted remote access through the OBWI.
22.	Warranty	One year or manufacturer whichever is greater

Any inferior specifications of IP KVM console Switches with LED console (will be rejected)

Bidder shall quote only one option, bids with multiple options will be rejected without any right of appeal.

TECHNICAL EVALUATION-PART-C

(To be included in Technical Proposal)

Detailed Specifications of 24 port POE+ Branded Switches with 2 X 10G SFP+ uplinks Cisco 2960XR or Equivalent		
S.No.	Feature	Requirements
	Hardware Scalability	Switch must support following interfaces: i. 24x 1GbE Ports POE+ ii. 2x 10G SFP uplink-ports Minimum higher will be prefer.
		Switch should support following Capacities: i. 108 Gbps Switching Capacity or Higher. ii. 90 Mpps Forwarding Capacity or Higher.
		Switch must support the following specification minimum i. 512 MB DRAM ii. 128 MB Flash
		Switch must support 360 W PoE power budget or Higher.
		Switch should support stacking of minimum 8 Switches.
		Minimum 80 Gbps of Aggregating Stacked Option or Higher.
2	General	Switch also support following layer 2 features: i. Port Mirroring ii. Port loop Detection iii. 802.1ab and 802.3ad iv. 802.1x Authentication v. 802.1Q vi. IEEE 802.1s vii. IEEE 802.1w viii. IEEE 802.1D ix.
3.		Switch also support the Basic layer 3 : i. IPv4 and IPv6 static routes ii. RIP v1/v2, RIPng iii. SVI Interfaces
4.		Supported Management protocol on Switch: i. Support both GUI and CLI ii. SNMPv1, SNMPv2, SNMPv3 iii. Telnet , SSH1&2 iv. Support RMON I & II
5.		Switch must be SDN ready and support following: i. Open Flow 1.3 support, or Netflow etc

12.		3 Year support must be included in Switch, support includes Advanced Hardware Replacement (Next Business Day) and Software upgrades.
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Any inferior specifications POE+ Switches will be rejected

Bidder shall quote only one option, bids with multiple options will be rejected without any right of appeal.

Authorized Signature of bidder with seal stamp

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of GST	Qty	Total Price Inclusive of GST
Branded Centralized Wireless Network (IEEE 802.11 ac Wave 2 Standard PoE+) with complete mounting kit, with 18 Aps and 1 Central controller, same brand			18 Access points +1 Controller	
Branded Base-T Ethernet copper cable Cat 6, (Branded (2 Nos) Boxes 1500 feet per box). Branded RJ 45 Connectors (2 Boxes)			2 Cable rolls 2 Boxes RJ 45 Connect ors	
Cable Steel Duct 70 Feet Galvanized, 12 X 6, 18” gage , purported, with cover			1	
PVC Pipe 2 inch white color with acc			600 Feet	
Branded patch cord 1 meter			36	
Steel Flexible Bundle			3	
Cable installation and laying charges			1 job	
Total				

Amount in words: (Rupees-----)

Any inferior specifications will be rejected

FINANCIAL BID not accompanied with earnest money will be rejected without any right of appeal.

Bidder shall quote only one option, bids with multiple options will be rejected without any right of appeal.

Authorized Signature of bidder with seal stamp

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of GST	Qty	Total Price Inclusive of GST
Branded 8 port IP based KVM Console Switch with KMM LED display (complete Solution) with 18.5 inch LED screen with Rack mountable-Sliding-Folding-tray, with all required cables for server connectivity, upgradable to Digital switch (2 Nos IP KVM Switches with 2 KMM Integrated LED consoles) with 16 USB SIP module (cables) for server , switch and KMM connectivity.			2 KVM switch 2 LED Screen 16 Cables	
Total				

Amount in words: (Rupees-----)

Any inferior specifications will be rejected

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Authorized Signature of bidder with seal stamp

Financial Proposal (Bid Format) Ethernet POE+ LAN Switches

Annex-D

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of GST	Qty	Total Price Inclusive of GST
24 port POE+ Branded Switches, 2X10G uplinks or above			5	
10G SFP + (Transceivers)			12	
Single mode Fiber patch cords LC/LC (Duplex)30 meter or above.			12	

Amount in words: (Rupees-----)

Any inferior specifications will be rejected

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Bidder shall quote only one option, bids with multiple options will be rejected without any right of appeal.

Authorized Signature of bidder with seal stamp