

GANGADHAR MEHER UNIVERSITY



ଗଙ୍ଗାଧର ମେହେର ବିଶ୍ୱବିଦ୍ୟାଳୟ

Accredited by NAAC with "A" Grade

SAMBALPUR (ODISHA)-768004

Website: www.gmuniversity.ac.in, e.mail: gmuniversitybp@gmail.com, Telephone & Fax No (.0663)2403413.

No. 853/GMU

Dt. 6-2-19

INVITATION FOR FINANCIAL BID

From

The Registrar,
GM University, Amruta Vihar
Sambalpur-768004

Ref: Quotation call notice no. 3983/GMU Dtd.04-08-18

To,

1. M/s Sylvesa Infotech
2. M/s Look@me
3. M/s Orbit Communication
4. M/s Unicom Infotel
5. M/s Sachinandan Consulting Pvt. Ltd
6. M/s SurveillanceSystems, CP-PLUS

Sir,

With reference to the above cited quotation call notice and your presentation on dated 04-09-2018 regarding installation of CCTV at GMU campus, you are hereby requested to submit the financial bid in the enclosed Performa along with other requisite documents so as to reach the office of the undersigned by 3.00pm on dt. 21-02-2019 as per the terms and conditions attached. The financial bid along with other requisite documents must be submitted through Speed Post/Registered post super scribed as "**FINANCIAL BID FOR CCTV INSTALLATION in G.M UNIVERSITY, SAMBALPUR**", the bid will be opened on dt.22-02-2019 at 11.30 am in the Office of the undersigned.

Yours faithfully,


REGISTRAR

Memo No. 854/GMU,

Dt. 6-2-19

Copy to the PA to VC/Registrar's guard file/ Comptroller of Finance / /Dy. Registrar /Purchase Officer/ Purchase Assistant/ Asst.-in-Charge, Store/ AC/HC/Website for information and necessary action.


REGISTRAR

"Quotation for supply, installation & commissioning of CCTV Surveillance System at G.M University, Sambalpur"

TIME SCHEDULE

- ♦ **Last Date & time of Receipt of Financial bids: By 3.00 pm of 21.02.2019**
- ♦ **Time of Financial Bid opening : 11.30 am on 22.02.2019**
- ♦ **Place of opening the Bid: Office of the Register, G. M. University, Amruta Vihar, Sambalpur**

Address for Communication:

REGISTRAR
G. M. UNIVERSITY, AMRUTA VIHAR,
SAMBALPUR-768004
email ID: gmuniversitysbp@gmail.com

24/2/19

TERMS AND CONDITIONS

1. **The bidders who had made their presentation on 04.09.2018**, are advised to submit the financial bid for installation of CCTV. The financial bid must be submitted through Speed Post/Registered post super scribed as **"FINANCIAL BID FOR CCTV INSTALLATION IN G.M UNIVERSITY, SAMBALPUR"**.

2. The sealed tender should be received through Registered Post/ Speed Post up to 3.00 p.m of 21.02.2019. The financial bids will not be accepted beyond the scheduled date and time.

Completed tenders should be submitted along with two separate demand draft one for tender fee of Rs.1,000/- (One thousand) in shape of Bank Draft in favour of the **Comptroller of Finance, G.M. University, Sambalpur** and another for EMD @ 3% of the quoted amount in shape of Demand Draft in favour of the Comptroller of Finance G.M. University, Sambalpur payable at Sambalpur.

3. The quoted price shall remain valid for a period of one year from the date of submission of bid.
4. The authorized representative (only one person per bidder) will be permitted to remain present at the venue of opening of Bids.
5. The installed items should be new and free of defects, and cover warranty period of minimum one year.
6. The Tender Call Notice along with the clauses mentioned herein shall form a part of the contract and agreement.
7. The Bid documents will be opened by the Purchase Committee at **11.30 am on 22.02.2019** in the presence of the bidders or their authorized representatives who wish to attend.
8. All bids submitted can be rejected by the competent authority without assigning any reason thereof. No claim, whatsoever, shall be admissible for the alleged loss/damage suffered by the bidder on account of such rejection.
9. The GMU may cancel or modify the tender document by issuing an corrigendum/addendum before due date of opening of tender. This will be notified only in the University website.
10. The GMU & the Tenderer shall make all efforts to resolve amicably by direct informal negotiation on any disagreement or dispute arising between them under or in connection with this contract. All disputes arising out of the contract shall be referred to courts under the jurisdiction of the Sambalpur court only.


Registrar
G.M. University

CHECK LIST TO BE ENSURED BY THE BIDDER

Sl. No.	Particulars	Whether Furnished		Remarks
		Yes	No.	
01	Cost of tender paper Rs.1,000/- (In shape of Bank Draft in favour of Comptroller of Finance, G.M. University, Sambalpur)			
02	EMD for Rupees @ 3% of total price quoted in shape of Bank Draft in favour of Comptroller of Finance, G.M. University, Sambalpur)			
03	Copy of valid GST Registration Certificate			
04	Copy of PAN Card			
05	Copy of update GST Clearance certificate			
06	Works Experience : List of Projects under execution / executed that are similar in nature to the work (Schedule-A)			
07	Warranty/Guaranty & AMC (for 2 nd and 3 rd)			
08	Technical Specification(Annexure-I)			
09	Manufacturer's authorization form (Annexure-II)			
10	Financial Bid (Annexure-III)			
11	Additional Information Sheet (Annexure-IV)			
10	Income tax return certificate for last three years			
11	Undertaking that the firm is not blacklisted			

26/7/19

Instruction to Bidders

1. NOTICE INVITING BID AND OBTAINING BID DOCUMENTS:

- 1.1. The successful bidder shall complete the works by the intended completion date specified.
- 1.2. Contractor exempted from payment of EMD will be able to participate in the tender directly by submission of documentary evidences in technical bid towards his eligibility for such exemption (Proof copy of documents should be attached)

2. ELIGIBLE BIDDERS:

- 2.1. The bidder should be a **Manufacturer/Authorized Dealer /Service provider** of CCTV of mentioned company in the Invitation for Bids.
- 2.2. The bidder has not been blacklisted by any Central/State Government Institution and there has been no pending litigation with any Government department on account of similar services.(To be furnished under Notarized Affidavit)

3. QUALIFICATION CRITERIA:

- 3.1. The bid shall include following information and documents.
 - (a) Copy of valid Company registration certificate, PAN card, GST certificate.
 - (b) Copies of documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory.

5. PERFORMANCE SECURITY:-

The successful bidder has to submit Performance Security Deposit of 5% of the contract value in shape of Bank Guarantee/ Bank draft valid up to the period of 90 days of expiry of the warrantee / guarantee period. The EMD of the successful bidder will be converted to Performance Security Deposit and the bidder is required to deposit the Security for the balance amount.

6. PAYMENT TERMS:

100% of the work order value will be paid after successfully installation and to the satisfaction of the technical committee.

7. WARRANTY:

- a) All the equipments and accessories supplied under this service shall have One (01) year on site comprehensive warranty from the date of completion of installation and bidders are requested to quote the AMC price for 2nd and 3rd year respectively. If the bidder not quoted the offer of AMC the tender will be rejected.
- b) The bidder must undertake to provide the installation and warranty service support at GMU premises. The repairing / rectification, if any of the items under warranty must be done at site only. The bidder should submit along with the technical bid, the detailed plan for providing installation and warranty services at site. Prompt and efficient after sales service must be provided within the warranty period.

8. **Delivery:**

- i) The supply, installation & commissioning period is 15 days from the date of issue of purchase order. The supplier shall deliver the materials at GMU premises at his own cost. The supplier shall undertake free replacement of materials due to damage or loss in transit .In case any defects noticed during inspection, and is intimated by the consignee within 15 days of receipt of material, the vendor shall be required to replace / repair the defective items as per the technical specification in the purchase order.
- ii) If the supplier fails to deliver of the goods on or before the stipulated date, then late delivery charges at the rate of 0.5% per week of the total order value shall be levied subject to maximum of 5% of the total order value
- iii) The rate should be including all taxes, Transportation erection etc. There is no extra condition will be acceptable.
- iv) The name of items with specification and make/brands of the items, with name of manufacturer & address must be enclosed.
- v) Literature and catalogues in support of items quoted must be enclosed.
- vi) The quantity mentioned is tentative. Quantity may increase or decrease as per requirement.
- vii) The order will be awarded to the Lowest bidder in overall price including AMC (for 2nd & 3rd year). No individual / part order will be awarded.

A handwritten signature in blue ink, appearing to be 'Rup/19'.


WORK EXPERIENCE

**LIST OF SIMILAR NATURE OF PROJECTS EXECUTED BY THE OEM OR BY THEIR
AUTHORIZED PARTNER**

Name of the Employer	Name of location and Name of work	Contract price as Per agreement	Stipulated days for Completion of work	Actual days taken to complete the work.	Reason of delay if any

Signature of the Tenderer

Date.



ANNEXURE-II

MANUFACTURER'S AUTHORIZATION FORM (MAF)

To,

The Registrar
G.M. University, Sambalpur

Ref : Tender No: ----- of GMU Dated: _____

Dear Sir,

We, M/s. _____ who are established and reputed
manufacturers of _____ having factories / Depot as at

_____ and _____ do hereby
authorize M/s. _____ (Name and address of
bidder) to offer their quotation and conclude the contract with you against the above invitation for the
Bid, as one of our Authorized Dealers.

We hereby confirm that the CCTV System including all components delivered to the G.M.
University Sambalpur, will be brand new. We also guarantee that all the software / components
supplied by the supplier is licensed and legally obtained.

We, hereby, extend our full guarantee and comprehensive warranty as per terms and
conditions of the Tender for our products offered against this invitation for Bid by the above firm.

We, hereby confirm that the spares for the product offered should be available for after sales
service for at least 05 years.

Dated at _____ this _____ day of _____ 20 _____.

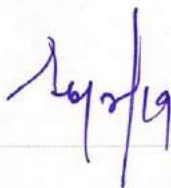
Authorized Signatory

Signature :

Name : Designation :

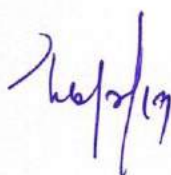
Name & Address of the company :

**(To be submitted on Company (OEM)'s letter head duly signed by the authorized signatory of
Company along with technical specification of products.)**



ANNEXURE-IV**ADDITIONAL INFORMATION SHEET**

Sl. No.	Description	To be filled in by Party
1	Name of the vendor:- Dealer/ Manufacturer.	
2	Address with Phone No. / E-mail	
3	Contact person (S) Phone No./ Mobile No. and Email.	
4	Name of the Brand & Model to be supplied	
5	Literature and catalogues in support of items quoted must be enclosed.	
6	Dealer/manufacturer.	
7	Warranty period from the date of installation	
8	Delivery schedule: Within 15 days on Releasing the work order.	
9	Validity of quotes: Should be valid for period of one Year. The price should be quoted in INR with all taxes.	
10	Undertaking by manufacturer of equipment for servicing the equipment & supply of spare parts whenever required at least for two years after completion of warranty / Guaranty.	
11	Status of the Firm (Company/Firm/Proprietary) enclose the supporting document	



ANNEXURE-III
FINANCIAL BID

SL No	ITEM	Make	Quantity	Unit price	GST	Unit price including GST	Total Price
1	Camera Category B		20				
2	Camera Category C		36				
3	Camera Category D		02				
4	NVR		01				
5	All Network devices						
6	CAT 6 UTP cable with cashing and capping		As per requirement				
7	Monitor 42"		02				
8	Monitor 21"		02				
9	Online UPS		As per requirement				
10	Video Management Software		01				
11	Racks, Distribution box, Cable, socket, cooling fan if required, other components required for installation		As per requirement				
12	Installation charges (if any)						
13	AMC for two years (AMC for 2nd & 3rd year) after completion of warranty						
14	Any other charges (if any, mention)						
Grand Total							

Date and Stamp

Signature of firm

26/7/19

ANNEXURE-I
Details for location of Camera and Specification

Sl No	Location	Number of Camera	Specification
1	Control Room(Adjacent to cash counter)	1 Dome, 2 MP	B
2	Main Gate 1 (over the zoology dept)	1 PTZ, 3 MP	D
3	Main Gate 2 (Over SJ hostel)	1 PTZ, 3 MP	D
4	Main building Outside View	1 Bullet, 2 MP	C
5	Library Entrance	1 Bullet, 2 MP	C
6	Library building corridor	1 Dome, 2 MP	B
7	Library Hall 1	2 Dome, 2 MP	B
8	Library Hall 2	2 Dome, 2 MP	B
9	Back side of the building Library	2 Bullet, 2 MP	C
10	Long corridor (old and New building) - 1	2 Bullet, 2 MP	C
11	Long corridor (old and New building) - 2	2 Bullet, 2 MP	C
12	Long corridor (old and New building) - 3	2 Bullet, 2 MP	C
13	Long corridor (old and New building) - 4	2 Bullet, 2 MP	C
14	Long corridor (old and New building) - 5	2 Bullet, 2 MP	C
15	Long corridor (old and New building) - 6	2 Bullet, 2 MP	C
16	Long corridor (old and New building) - 7	2 Bullet, 2 MP	C
17	Long corridor (old and New building) - 8	2 Bullet, 2 MP	C
18	Midsize corridor (old and New buildings)-1	1 Bullet, 2 MP	C
19	Midsize corridor (old and New buildings)-2	1 Bullet, 2 MP	C
20	Midsize corridor (old and New buildings)-3	1 Bullet, 2 MP	C
21	Midsize corridor (old and New buildings)-4	1 Bullet, 2 MP	C
22	Midsize corridor (old and New buildings)-5	1 Bullet, 2 MP	C
23	Midsize corridor (old and New buildings)-6	1 Bullet, 2 MP	C
24	Midsize corridor (old and New buildings)-7	1 Bullet, 2 MP	C
25	Midsize corridor (old and New buildings)-8	1 Bullet, 2 MP	C
26	Midsize corridor (old and New buildings)-9	1 Bullet, 2 MP	C
27	Midsize corridor (old and New buildings)-10	1 Bullet, 2 MP	C
28	Midsize corridor (old and New buildings)-11	1 Bullet, 2 MP	C
29	Hall 1	1 Dome, 2 MP	B
30	Hall 2	1 Dome, 2 MP	B
31	Hall 3	1 Dome, 2 MP	B
32	Hall 4	1 Dome, 2 MP	B
33	COE building (In the inner corridor)	1 Bullet, 2 MP	C
34	Backside of LG-1	1 Bullet, 2 MP	C
35	Backside of Office	1 Bullet, 2 MP	C
36	Computer Sc Lab	2 Dome, 2 MP	B
37	MCA Lab	1 Dome, 2 MP	B
38	In front of English Dept, Entry point	1 Bullet, 2 MP	C
39	Establishment Section	1 Dome, 2 MP	B
40	Account Section	1 Dome, 2 MP	B
41	Academic Section	1 Dome, 2 MP	B
42	LG-1	2 Dome, 2 MP	B
43	LG-2	2 Dome, 2 MP	B
44	BEd Block (Over COE)	1 Bullet, 2 MP	C
	Total	58 Cameras	

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TECHNICAL SPECIFICATION

Camera Specification

Category: B	
IP BASE VERIFOCAI Dome CAMERA	
1	1 / 2.8" 2MP Progressive scan CMOS
2	Support H.265 / H.264 / MJPEG dual codec
3	Smart triple streams supported
4	Max 25 / 30fps @ 3MP (2048 x 1536)
5	WDR
6	3D DNR
7	ROI, EIS , ONVIF
8	Smart detection
9	Intelligent Function
10	2.8 ~ 12mm varifocal motorized lens (auto Focus)
11	Max. IR LEDs length upto 30m
12	Micro SD memory (Max-128gb)
13	PoE , IP66 & more.
Category: C	
IP BASE VERIFOCAI Outdoor Bullet CAMERA	
1	1 / 2.8" 2MP Progressive scan CMOS
2	Support H.265 / H.264 / MJPEG dual codec
3	Smart triple streams supported
4	Max 25 / 30fps @ 3MP (2048 x 1536)
5	WDR upto 140dB
6	3D DNR
7	Defog,ROI, EIS , ONVIF
8	Smart detection
9	Intelligent Function
10	2.8 ~ 12mm varifocal motorized lens (auto focus)
11	Max. IR LEDs length upto 50m
12	Micro SD memory (Max-128gb)
13	PoE , IP67 & more.
Category: D	
IP BASE Outdoor PTZ CAMERA	
	1 / 2.8" 3MP Progressive scan CMOS
	Support H.265 / H.264 / MJPEG dual codec
	Smart streams supported
	Max 25 / 30fps @ 3MP (2048 x 1536)
	WDR up to 140dB , Preset Operation – 256
	3D DNR , Optical Zoom – 30x , Digital Zoom – 12x , 360°Moveable.
	Defog,ROI, EIS , ONVIF
	Smart detection , Intelligent Function
	Inbuilt Lens
	Max. IR LEDs length 150m
	Micro SD memory (Max-128gb)
	PoE , IP67 & more.

Signature

TECHNICAL SPECIFICATION –OF 128 CH. NVR		
Sl. No.	Description	Specification
1	Design	Dual-OS design to ensure high reliability of system running
2	Camera support	128CH
3	Storage Capacity	16-SATA, Upto 10TB HDD support for each sata
4	Recording Resolution	3MP/1080P/UXGA/720P/VGA/4CIF/DCIF/2CIF/CIF/QCIF
5	HDMI output resolution	2HDMI PORT: 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080p/60Hz,
6	Array type	Support HDD hot swap with RAID0,1,5,6,10 storage
7	VGA output resolution	1920 × 1080p/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz
8	Alarm in/out	16 in /8 out
9	Network Interface	TCP/IP, DHCP, HIK Cloud P2P, DNS, DDNS, NTP, SADP, SMTP, NFS, iSCSI, UPnP™, HTTPS
10	Optic fiber interface	4, 1000 Mbps optic fiber interface
11	USB interface	Front panel: 2× USB 2.0; Rear panel: 2× USB 3.0
12	Decoding format	H.265+/ H.265/H.264/MPEG4
13	Operating Temperature	.-10 to 50°C,
14	Working humidity	10 to 90%
15	Two Way Audio	1 Ch ,RCA (2.0Vp-p,1kΩ)
16	Power Supply	100 ~ 240 VAC, 50 ~ 60 Hz

Sr. No	Desired Specification/Qualitative Requirement
	Layer 3 Gigabit Distribution Switch
A	Interface and performance Requirements
	Proposed Switch should have 20 10/100/1000BASE-T ports and 4 Combo 10/100/1000BASE-T/SFP ports
	Switch should Support internal/External Redundant Power Supply.
	1 SD card Slot/USB allowing the user to store boot images and upload configuration files directly from an SD Card/USB. Furthermore, syslog files can also be conveniently saved to a card.
	Switch should have minimum 88 Gbps Switching capacity and 65 mpps packet forwarding rate.
	Switch should support true stacking minimum 6 units per stack making all the switches as part of a virtual chassis having two dedicated stacking ports with 40Gbps stacking bandwidth.
	Switch should support IEEE 802.3az standard which can reduce the energy consumption of a link when no packets are being sent.
	Should support 16K MAC address entries
	Jumbo Frame support minimum 12000 bytes.

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B	Layer 2/2+ switching
	Switch should support ARP(RFC826) and Gratuitous ARP and Proxy ARP(RFC1027)
	Should have support for IEEE 802.1Q Vlan,IEEE 802.1v Vlan.
	Should support MAC based Vlan
	Should support GVRP,PrivateVlan,SubnetVlan, Voice Vlan and QinQ.
	Switch should have support for below Spanning Tree protocol Standards: <ul style="list-style-type: none"> • 802.1D STP • 802.1w RSTP • 802.1s MSTP
	Switch should support 802.3ad Link Aggregation control protocol
	Should support IGMP Snooping (V1/V2/v3) and 1024 IGMP snooping groups.
	MLD v1/v2 Snooping
	should support LLDP and LLDP-MED.
	sub-50ms protection for Ethernet traffic in a ring topology to ensure that there are no loops formed at the Ethernet layer as per the industry standard ITU-T G.8032.
D	Quality of service
	Switch should support 802.1p priority queuing with 8 queues per port.
	should support weighted round-robin queuing
	Switch should support bandwidth control with minimum granularity of 8 kbps
	Should support Broadcast/Multicast/Unicast Storm Control
	Should support DSCP
	Weighted Random Early Detection (WRED) for congestion control
E	Security
	Switch should support MD5,SHA and 3 DES encryption protocols.
	Time based ACL
	IPV6 ACL
	IEEE 802.1X Port Based Access control and Host based Access control and Guest Vlan
	Switch should be able to authenticate and access control based on MAC and web (Http or Https)
	BPDU Attack Protection,ARP protection
	should have support for SSL v1/v2/v3
	IP-MAC-Port Binding
F	Management
	RMON v1 and RMON v2
	Should support Sflow/Netflow
G	OAM
	802.3ah Ethernet Link OAM
	802.1ag Connectivity Fault Management (CFM)
H	Certification
	IPv6 Ready Logo Phase 2
	Compliant with RoHS
	FCC Class A, CE Class A, VCCI Class A, IC, C-Tick

20/2/19

Sr. No	Desired Specification/Qualitative Requirement
1	<u>Access Switch (24 port PoE Layer-2 Switch)</u>
1.1	<u>Architecture</u>
(a)	Switch with 24 PoE 10/100/1000 Mbps and 4 SFP ports
1.2	<u>Network Media</u>
(a)	SFP's 1000 BaseSX,1000BaseLX,1000BaseTX
1.3	<u>Performance</u>
(a)	The Switch shall have Non-blocking wire speed switch fabric
(b)	The Switch shall have Min. 56 Gbps Back plane or higher
(c)	The Switch shall have Min 41 million pps or higher
(d)	The Switch shall support Min. 16 K Mac address
(e)	The Switch Should support Jumbo Frame (9k Bytes)
1.4	<u>Layer 2 Features</u>
(a)	The Switch should have IGMP Snooping v1,v2
(b)	The Switch should have Spanning tree 802.1d and 802.1W
(c)	The Switch should have 802.3ad Link Aggregation Up to 14 groups per device
(d)	The Switch should have Port Mirroring One to one/Many to One
(e)	The L2 Switch shall have power saving feature which can automatically powers down ports that have no link or link partner.
(f)	The L2 Switch Should support PoE Standard 802.3af & 802.3at
(g)	The L2 Switch should have minimum 190 Watts of Power Budget
1.5	<u>VLAN</u>
(a)	The LAN switch shall have IEEE 802.1Q VLAN encapsulation. Up to 255 VLANs per switch.
(b)	It shall have Management Vlan
(c)	It shall have Asymmetric Vlan
(d)	It shall have Auto Voice Vlan
1.6	<u>Quality of Service</u>
(a)	It shall support 802.1p Priority Queues (4 Queues)
(b)	Queue Handling mode: WRR & Strict Mode
(c)	Class of service shall be based on DSCP,802.1p queues,IPv6 Traffic class
1.7	<u>Network Security</u>
(a)	The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.
(b)	It shall support DHCP Server Screening
(c)	It shall have built in mechanism to protect the switch against traffic flooding caused by virus attack
1.8	<u>Management</u>
(a)	It shall support Firmware upgrade through Web Management or through software must come along with Switch to reduce the cost of administering software upgrades by downloading from a centralized location.
(b)	It shall support Network Timing Protocol (NTP/SNTP) to provide an accurate and consistent timestamp to all intranet switches.
(c)	It should support Compact CLI through Telnet
(d)	It shall support SNMPv1/V2c and V3

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(e)	It shall support LLDP, LLDP-MED & Time based POE.
(f)	It shall support IPv6 management
1.9	Certification
(a)	Switch should be CE,FCC,UL,VCCI, certified
(b)	Switch should be IPv6 ready logy phase 2 certified

Sl. No	Desired Specification/Qualitative Requirement
1	<u>Access Switch (8 port PoE Layer-2 Switch)</u>
1.1	<u>Architecture</u>
(a)	Switch with 8 PoE 10/100/1000 Mbps, 2 combo 10/100/1000BASE-T/SFP Smart Switch
1.2	<u>Network Media</u>
(a)	SFP's 1000 BaseSX,1000BaseLX,1000BaseTX
1.3	<u>Performance</u>
(a)	The Switch shall have Non-blocking wire speed switch fabric
(b)	The Switch shall have Min. 20 Gbps Back plane or higher
(c)	The Switch shall have Min 14.8 million pps or higher
(d)	The Switch shall support Min. 8K Mac address
(e)	The Switch Should support Jumbo Frame (up to 10000 Bytes)
1.4	<u>Layer 2 Features</u>
(a)	The Switch should have IGMP Snooping v1,v2
(b)	The Switch should have Spanning tree 802.1d
(c)	The Switch should have 802.3ad Link Aggregation Up to 5 groups per device
(d)	The Switch should have Port Mirroring One to one/Many to One
(e)	The L2 Switch shall have power saving feature which can automatically powers down ports that have no link or link partner.
(f)	The L2 Switch Should support PoE Standard 802.3af & 802.3at
(g)	The L2 Switch should have minimum 78 Watts of Power Budget
1.5	<u>VLAN</u>
(a)	The LAN switch shall have IEEE 802.1Q VLAN encapsulation. Up to 255 VLANs per switch.
(b)	It shall have Management Vlan
(c)	It shall have Asymmetric Vlan
(d)	It shall have Auto Voice Vlan
1.6	<u>Quality of Service</u>
(a)	It shall support 802.1p Priority Queues (4 Queues)
(b)	Queue Handling mode: WRR & Strict Mode
(c)	Class of service shall be based on DSCP,802.1p queues,IPv6 Traffic class

1.7	<u>Network Security</u>
(a)	The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.
(b)	It shall support DHCP Server Screening
(c)	It shall have built in mechanism to protect the switch against traffic flooding caused by virus attack
1.8	<u>Management</u>
(a)	It shall support Firmware upgrade through Web Management or through software must come along with Switch to reduce the cost of administering software upgrades by downloading from a centralized location.
(b)	It shall support Network Timing Protocol (NTP/SNTP) to provide an accurate and consistent timestamp to all intranet switches.
(c)	It should support Compact CLI through Telnet
(d)	
(e)	It shall support SNMPv1/V2c and V3
(f)	It shall support LLDP, LLDP-MED & Time based POE.
1.9	It shall support IPv6 management
(a)	<u>Certification</u>
	Switch should be CE,FCC,UL,VCCI, certified

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Other Components:

1. 128 CH LICENSES SOFTWARE (Video Management Software)
2. **DISPLAY UNIT:**
42'' FHD TV with wall mount Bracket (Min: 2 HDMI and 1 USB), : Quantity: 2
Make: Sony
21'' LED Monitor Quantity: 2
Make :LG
HDMI Cable As per requirement
3. All Network devices make must be from Cisco/Juniper/D-Link
4. Supply and Laying of CAT-6, 4 pair UTP Cable Optimized for 550 MHz Channel performance with ISI mark PVC pipe. Make: D-Link/ Leagrand
5. Online UPS with 60 mins Backup for all components, Make: APC/Exide/Microtek
6. All connection in the campus with PoE connection only.
7. The data backup must last for one Month.
8. Project installation with all required logistics and 3 years Onsite support.
9. **All other components with genuine requirement will be supplied and installed and certified by the firm.**

Handwritten signature