INDIRA GANDHI GOVT. DENTAL COLLEGE, JAMMU.

Address:- Rehari Chungi, Jammu, Jammu & Kashmir, 180005
Email ID: principaliggdc-jk@nic.in iggdcjprincipal@yahoo.com
Ph. No: 0191-2565630, 2564962 Fax No: 0191-2565588

ENIT NO:- IGGDCJ/CCTV/02 of 2020 dated 10-12-2020

DETAILS OF TENDER CALL NOTICE

On behalf of Lt. Governor, UT of J&K tenders are invited for supply, installation, testing, and commissioning of CCTV Cameras, Servers, Storage, etc. at Block A, Boys and Girls Hostel, and left over blocks of Indira Gandhi Govt. Dental College & Hospital, Jammu with the display at Principal Office, Medical Superintendent Office, and warden rooms of respective hostels.

Sl.No	Item	Cost of Tender	EMD for the in the shape of DD (Rs)
1	Supply, Installation, testing, and commissioning of CCTV Cameras, Servers, Storage at A Block, Boys & Girls Hostel and left over blocks with the display at Principal Office, Medical Superintendent Office and warden rooms of respective hostels of Indira Gandhi Govt. Dental College & Hospital, Jammu	₹ 1000/- (₹ One Thousand Only)	₹ 55,000/- (₹ Fifty Five Thousand Only)

The online bids shall be accompanied by the required EMD, without which the same shall be rejected. Technical Bids will be received up to **01-01-2021 04.30 P.M.** of Supply, Installation, testing and commissioning of CCTV Cameras, Servers, Storage, at A Block, Boys & Girls Hostel and left over blocks etc. with the display at Principal Office, Medical Superintendent Office and warden rooms of respective hostels and the technical bid will be opened on the 02-01-2021 at 11:00 AM. Opening Date and time of Financial bid shall be communicated subsequently after assessing the suitability and eligibility of the Tenderers.

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1. **Notice Inviting Tender – Supply, installation, testing & commissioning of IP CCTV system at Block A, Boys & Girls Hostel, and left over blocks etc at Indira Gandhi Govt. Dental College & Hospital, Jammu with the display at Principal Office, Medical Superintendent Office, and warden rooms of respective hostels.**

2. Last date for the online submission of tender is **01-01-2021 by 04:30 PM .**
3. This NIT (tender document) can be downloaded from our website at https://www.iggdcj.edu.in/tenders.php and http://jktenders.gov.in. The tender document will be available on the websites, till the last date of submission.

4. Technical & Financial Covers

a. Cover 1st shall contain:

a) "Technical bid" of tender with every page signed and stamped.
b) An initial part amount of **Rs ₹ 55000/- (Rs. Fifty Five Thousand Only) towards Earnest Money Deposit (EMD)** by way of Demand Draft (DD) from Nationalised/Scheduled Bank, drawn in favor of **Accounts Officer, Indira Gandhi Govt. Dental College, Jammu payable at Jammu.** The online bids shall be accompanied by the required EMD, without which the same shall be rejected. No interest shall be paid on the EMD thus collected. EMD of the successful tenderer shall be refunded after the successful completion of the work.

b. Cover 2nd – Financial Cover:

a) Tendering/bidding process will be completely online, no price bid shall be submitted in physical form. Rates submitted in physical form will not be entertained/considered at any cost.
b) Tenderers are required not to create additional BOQ of their own.
c) The tenderer needs to submit the total cost of the entire project in totality as per BOQ
d) The supply (s) shall be **F.O.R Purchase Officer, Indira Gandhi Govt. Dental College, Jammu**, at the respective sites of installation & commissioning
e) The Tender inviting authority, Indira Gandhi Govt. Dental College, Jammu reserves the right to accept or reject any tender or all tenders without assigning any reason thereof.

c. Pre-Bid Meeting

The date, time and venue of the Pre-Bid Meeting shall be:

Date: **20-12-2020**

Time: **11:00 AM**

Venue: **Principal Chamber, Indira Gandhi Govt. Dental College, Jammu.**

5. PRE-QUALIFICATION CRITERIA

Minimum Eligibility Criteria for pre-qualification of tenderers is as follows:

The Bidding Firm/Company: -

1. Should have experience in the field of IP CCTV systems.
2. Similar work whose individual value is not less than ₹ 7.5 Lakh (Rs. Seven Lakhs Fifteen Thousand Only).
3. Work/Purchase orders and Completion certificates issued by the client should be enclosed.
4. Should have an annual turnover of at least ₹ 15 lakh (Rs. Fifteen Lakhs only) each in the last three years.

a. Should submit audited balance sheets / P&L account and Income Tax Return certificates for the last 3 financial years from certified Chartered Accountants

b. Only manufacturer(s) or their authorized distributor/dealer is eligible to bid. Authorization (latest) from Original Equipment Manufacturer (OEM) in favor of authorized dealer/distributor to bid the order against this tender, must be enclosed with a technical bid for all types of cameras, VMS, Server, and Storage, without authorization letter bid shall not be accepted.

c. The tenderer is also required to submit a certificate from OEM

Note: Any false and/or inadequate information can result in the rejection of the tender.

6. INSTRUCTIONS TO TENDERERS

1. A Tenderer can submit a single bid only.
2. Incomplete, conditional bids shall not be accepted.
3. The tenderer shall not be allowed to transfer, assign, pledge, or sub-contract work order/supply order under this contract to any other agency.
4. Pre-Bid meeting shall be held in the Principal Chamber, Administrative Block of Indira Gandhi Govt. Dental College, Jammu on 20-12-2020 at 11:00 AM.
5. The bids shall be deposited in electronic format on website http://www.jktenders.gov.in from 11-12-2020 at 12' O Clock upto 01-01-2021 at 04:30 PM only.
6. Affidavit on ₹ 100/- (Rs. One Hundred Only) stamp paper duly attested by the Judicial Magistrate with the effect that:
    a. The documents/catalogues alongwith authority letter etc. enclosed with the Tender are genuine and have not been tampered or fabricated.
    b. The firm has not been black listed in the past by any Govt./Private institution of the country and there is no vigilance/any other investigating agency , case pending against the manufacturer/supplier.
    c. If any thing found wrong at any stage, I shall be responsible and deem to any legal action against me.
7. Complete bidding process will be online. (Price bid not to be submitted in physical form).
8. The tenderer needs to submit the total cost of the entire project from supply to installation and commissioning in totality as per BOQ
9. The tenderers must include in their tender prices quoted for all duties royalties, GST, cess and sales tax, works contract tax or any other taxes or local charges, transportation charges, labor charges, etc at the installation site. if applicable. No extra claim on this account will in any case be entertained.
10. Valid GSTIN certificate / e-submission document duly self-attested must be submitted along with the bid.
11. Deviations in terms and conditions, Specification of material, Inspection clause, etc. will not be accepted under any condition.
12. Earnest money as specified in the bid shall be deposited in the shape of Demand Draft drawn in favor of the Accounts

Officer, Indira Gandhi Govt. Dental College & Hospital, Jammu payable at Jammu from any nationalized/scheduled bank preferably J&K Bank. **Bids without E.M.D will not be accepted.**

13. **Work should be completed in two weeks. Since timely execution of works is of paramount importance, requests for extension of time shall not be entertained.**
14. Canvassing in any manner shall not be entertained and will be viewed seriously leading to rejection of the tender.
15. Principal, Indira Gandhi Govt. Dental College & Hospital, Jammu reserves its right to modify the tender document/details by way of amendment.
16. Bids will be accepted & will be opened as per information mentioned in the notice-inviting tender No receipt against submission of a bid shall be issued by Indira Gandhi Govt. Dental College & Hospital, Jammu
17. The CCTVs Surveillance System needs to be functional 24x7 basic i.e. 24 hours all day and needs to have at least 30 days of data storage capacity for all CCTVs.
18. The tenderer should quote the amount in figures as well as in the words. Amount quoted by the Tenderer in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates, figures, and words. However, if a discrepancy is found in the rates in words and figures, then the rates quoted in words shall be taken as correct.
19. Before quoting, the tenderer shall inspect the site, to fully acquaint himself about the condition regarding the accessibility of the site, working condition of the site, including installations of tools and plants (T&P) and local authority regulations/restrictions if any, conditions affecting accommodations and movement of personnel, etc. required for the satisfactory execution of the work contract. No claim whatsoever on such account shall be entertained by the Indira Gandhi Govt. Dental College & Hospital, Jammu in any circumstances.
20. The quantities of various items given in the Department wise Camera Details (schedule of quantities) are approximate as per **Annexure- A**

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21. The quantities of work may vary at the time of allotment/execution of work. Indira Gandhi Govt. Dental College & Hospital, Jammu reserves the right to omit/delete any item(s) of work from the schedule at the time of allotment /execution of work. The tenderer will be paid for the actual work done at the site duly verified by the concerned technical committee of the Indira Gandhi Govt. Dental College & Hospital, Jammu.
22. The successful Tenderer shall execute an agreement on judicial stamp paper duly attested by 1st Class Magistrate with Principal, Indira Gandhi Govt. Dental College & Hospital, Jammu within 05 days from the date of issue of work order failing which the Tenderer's EMD may stand forfeited.
23. Signed & stamped compliance sheet of the technical specification of the goods with technical printed literature mentioning all the terms & conditions clearly, must be enclosed with the technical bid.
24. In case of the supply of any defective material or substandard material, the materials will be rejected & it will be the responsibility of the supplier for taking back & replacing the rejected materials at their own cost. In case of non-lifting of such rejected materials within one week, it will have the right to suitably dispose off the same and forfeit the amount.
25. The supplied materials should strictly comply with the specifications as mentioned in the tender, otherwise, the material would be liable for rejection.
26. Deviation of any commercial terms and conditions and technical specification shall not be entertained under any circumstances.
27. The Tenderer shall abide by all laws, rules, and regulations framed thereunder or any other statutory obligations which are in force from time to time. The tenderer/firm shall indemnify the Institute from any claims in this regard.
28. Any losses sustained by the Institute due to negligence of Tenderer's service in the form of loss/damage of property will be recoverable from the Tenderer, as the money value shall be estimated by the Institute. The decision of the institute in this regard will be final and binding on the Tenderer.

29. The tenderer will adopt all safety measures /precautions while executing the work/supply. In case of any accident /causality of any personnel, involved in work/supply the complete responsibility will be borne by the tenderer himself and Institute will not be held responsible for any claim/compensation.
30. The tenderer shall submit the copy of the tender document and addenda thereto, if any, with each page should be signed and stamped to confirm the acceptance of the entire term & conditions of the tender.

31. Scope of supply (Bid price to include all cost components) : Supply Installation Testing Commissioning of Goods and Training of operators and providing Statutory Clearances required (if any) and warranty of five years
32. Availability of Service Centres: Tenderer/OEM must have a Functional Service Centre in the UT preferably in Jammu in case of carry-in warranty. (Not applicable in case of goods having on-site warranty). If service center is not already there at the time of bidding, successful Tenderer / OEM shall have to establish one within 30 days of award of contract. Payment shall be released only after submission of documentary evidence of having Functional Service Centre.

7. Acceptance/ Rejection of the bid documents:

Tender Inviting Authority, Indira Gandhi Govt. Dental College & Hospital, Jammu, reserves the right to reject or accept any bid or annul the bidding process at any time before award of contract, without having prejudice of incurring any liability to the affected Tenderers or any obligation to inform the Tenderers.

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8. FINANCIAL TERMS & CONDITIONS:

Rate:

1. The offer should indicate the complete cost of the work including supply, Installation & Commissioning and deployment charges, taxes & duties. The total cost must be inclusive of packing, forwarding, loading & unloading charges, cost of insurance, and transportation FOR destination where the system will be installed as per the work order.

Taxes: -

1. All Taxes as applicable should be mentioned clearly in BOQ.

Payment:

1. Payment will be made after satisfactory completion of work as per specifications after submitting the bill by the firm.
2. In case supply /work is not found as per specifications of the work order specifications, whole supply/work shall be rejected and there shall not be any liability towards Indira Gandhi Govt. Dental College, Jammu for any reason.
3. Submission of quality assurance of work certificate from the Govt. approved competent authority after the completion of the work.
4. Technical evaluation of the work by the technical evaluation committee after successful completion of the work.

PENALTY CLAUSE: -

A ten percent (10%) penalty shall be imposed if there is a delay in completion of work up to one week from the date of start of work as per supply order. In case of further delay, the work/supply order stands canceled.

However, if there is any hindrance/barrier in the execution of work from Indira Gandhi Govt. Dental College & Hospital, Jammu side, then relaxation will be granted without penalty as deemed fit.

9. Force Majeure:

In no event shall either Party have any liability for failure to comply with this Agreement, if such failure results directly from the occurrence of any contingency beyond the reasonable control of the Party, including, without limitation, strike or other labor disturbance, riot, major power failure, war, natural calamities including but not limited to floods, earthquakes, fire, volcanic eruptions, epidemics, pandemic National Emergency, interference by any government or governmental agency, embargo, seizure, or enactment or abolition of any law, statute, ordinance, rule, or regulation (each a " Force Majeure Event"). In the event that either Party is unable to perform any of its obligations under this Agreement because of a Force Majeure Event, the Party who has been so affected shall as soon as may be, after coming to know of the Force Majeure Event, inform the other Party and shall take reasonable steps to resume performance as soon as may be after the cessation of the Force
Majeure Event. If the period of nonperformance due to a Force Majeure Event exceeds thirty (30) days, the Party whose ability to perform has been so affected may, by giving written notice, terminate this Agreement.

Sub-standard work and material: If any work or material used at the site is found to be unsound, imperfect, or inferior from what is specified in the contract, the successful Tenderer shall be advised to rectify or re-execute the work or remove the material as the case may be, within a reasonable time depending upon the nature of work. If the successful Tenderer fails to do so, the work shall be got redone or rectified or the material replaced through any other agency at the risk and cost of the Tenderer.
The successful Tenderer shall carry out all the work strictly in accordance with details and instructions of the Indira Gandhi Govt. Dental College & Hospital, Jammu. If in the opinion of the Indira Gandhi Govt. Dental College & Hospital, Jammu, changes have to be made in the execution of work and with the prior approval in writing of the Employer they desire the Tenderer to carry out the same, the Tenderer shall carry out the same. The Indira Gandhi Govt. Dental College & Hospital, Jammu decision in such cases shall be final.

10. Warranty:

The entire equipment/ system shall be warrantied to be free from defective materials and any defects that may appear within 36 months (three years) from the date of issue of the completion certificate for the work, which in the opinion of the Indira Gandhi Govt. Dental College & Hospital, Jammu have arisen from bad workmanship or materials, shall upon intimation by the Indira Gandhi Govt. Dental College & Hospital, Jammu, be made good by the Tenderer at his own cost within 48 hours

During the said period of 36 months (DLP), the Tenderer (successful tenderer) shall make a periodical inspection of the working of the entire system free of charge at least once in 30 days or earlier, if required, and attend to such other service that may be required of him. The warranty period shall be 36 months from the date of handing over of the entire system to the Indira Gandhi Govt. Dental College, Jammu.

The total Security Deposit @ 10% submitted by the successful Tenderer shall originally be valid till the end of DLP. The security deposit will be released after the DLP is over.
Any complaint/technical fault raised, need to be resolved in 24 to 48 hours. The successful tenderer will ensure AMC/adequate supply of spare parts/AMC for the next five years after the expiry of the DLP period i.e. 36 Months.

11. Training:

The Tenderer shall provide the Indira Gandhi Govt. Dental College, Jammu with details of the training required by personnel to operate and maintain the CCTV system.

The Tenderer and the customer shall jointly agree on the number of staff to attend the training courses.

For all the active components/ equipment, namely; CCTV cameras, server, network switch, and Network-attached storage device, the OEMs shall provide a certificate, indicating the end of life and end of support in form of spares, etc. The product selected should conform to the tender specified life period. Further, all software provided for the above system, including operating system, video management software, client software etc. should be upgraded, if necessary, as and when a new upgrade is released by the developer/ OEM at no extra cost during the tender specified life period of the above system. A certificate, confirming the above, shall be submitted from the respective developers/ OEMs along with Part-I as per the proforma specified in the tender.

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12. Settlement of Dispute:

All disputes pertaining to the contract is limited to the jurisdiction High Court of Jammu, UT of J&K.

Principal,
Indira Gandhi Govt. Dental College & Hospital, Jammu

No:- IGGDCJ/Pur/CCTV/ **Dated:- -12-2020**

Copy to the:-

1. Financial Commissioner, Health & Medical Education Department, UT of J&K for kind information
2-6. All Members, State Level Purchase Committee, Indira Gandhi Govt. Dental College, Jammu for information and n.a
7. Purchase Officer, Indira Gandhi Govt. Dental College, Jammu for info & N.a
8. Computer programmer, Indira Gandhi Govt. Dental College, Jammu for information & n.a
9. Stock file.

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Equipments offered by the tenderer
(To be filled in by the Tenderer)

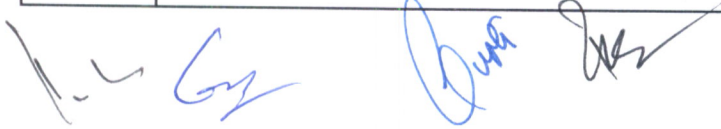
SN	Item	Make & Model	Whether complies with the tender Specifications or not? If No, Please mention the deviations
1	IP Camera		
2	NVR		
3	Hard disks		
4	Switches		
5	LED Display		
6	Racks		
7	Cat 6		
8	Power Cables		
9	UPS		
10	Any Other Item		

ANNEXURE B1 - 2MP IR Dome PTZ with 32x Zoom and 200 m IR Range			
PARAMETERS	DESCRIPTION	Compliance (Yes/NO)	Remarks
CAMERA			
Image Sensor	1/ 2.8" CMOS		
Signal System	PAL/ NTSC		
Minimum Illumination	Color: 0.001 lux @ F 1.5, Black and White: 0 lux with IR		
Shutter Speed	1s – 1/100000s		
Day and Night	IR Cut Filter with Auto Switch		
Wide Dynamic Range	140dB		
Optical Zoom	33x		
Digital Zoom	16x		
LENS			
Focal Length	4.6mm – 152mm		
Zoom Speed	< 4s		
Angle of View	Horizontal: 60° - 2.3° Vertical: 34.4° - 1.5°		
Aperture Range	F1.5 -F4.0		
PAN & TILT			
Pan Range	360°		
Pan Speed	Pan Manual Speed: 0.1°/s - 180°/s; Pan Preset		
Tilt Range	-15°-90° (Auto Flip)		
Tilt Speed	Tilt Manual Speed: 0.1°/s - 120°/s; Tilt Preset Speed: 180°/s		
3D Position	Yes		
Presets	500		
Preset Accuracy	+-0.4°		
Scan	8		
Cruise	16, upto 32 preset per cruise		
Pattern	8, each with 600s memory		
Power Off Memory	Yes		
ILLUMINATOR			
IR LED	10		
IR Range	Upto 200m		
IR irradiance Angle	Adjustable by Zoom		
COMPRESSION STANDARD			
Video Compression	H.265/H.264/M-JPEG		
Video Bitrate	32Kbps-16Mbps		
Audio Compression	G.711a, G.711μ, ADPCM, AAC_LC		
Audio Bitrate	8Kbps – 48Kbps		
IMAGE			
Resolution	1920×1080		
Mainstream	PAL: 50fps (1920×1080, 1080×720, 704×576, 640×480) NTSC: 60fps (1920×1080, 1280×720, 704×480, 640×480)		
Sub Stream	PAL: 25fps (704×576, 704×288, 640×360, 352×240) NTSC: 30fps (704×480, 704×240, 640×360, 352×240)		
Third Stream	PAL: 25fps (1920×1080, 704×576, 704×288, 352×288) NTSC: 30fps (1920×1080, 704×480, 704×240, 352×240)		
Image Setting	Saturation, Brightness, Contrast, Sharpness (Adjustable by Web Browser)		
Image Enhancement	BLC/3D DNR/HLC		
ROI	7 Dynamic Areas for both Main and Sub stream, Support Auto Tracking ROI		
OSD	16×16, 24×24, 32×32, 48×48, 64×64, 96×96. Total 5 Regions		
Picture Overlay	Yes		
Privacy Mask	Yes (24)		
Smart Defog	Yes		
FEATURE			
Alarm Trigger	Motion Detection, Network Disable Alarm, IP Conflict, MAC Conflict Detection		
Video Analytics	Tripwire, Perimeter Object Abandon, Object Lost, Loitering, Parking, Video Abnormal, Audio Abnormal, Auto Tracking		
Auto Tracking	Yes		
NETWORK			
Protocol	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTSP, PPPoE, NTP, UPnP, SMTP, IGMP, QoS, IPv4, IPv6, Multicast, RTMP		
System Compatibility	ONVIF Ready		
Remote Connection	≤7		
INTERFACE			
Communication Interface	1 RJ45 10/100 self adaptive Ethernet Port		
Audio	1 / 1		
Alarm	8/ 2		
Reset Button	Yes		
On Board Storage	Built in Micro SD card slot upto 256GB		
GENERAL			
Power Supply	AC24V/POE++		
Protection	IP66/IP67		

ANNEXURE B2 -2 MP Fixed Dome Camera				
S. No	Parameter	Specifications	Compliance (Yes/NO)	Remarks
1	Image Sensor	½.8" Progressive Scan, Backlight illuminated CMOS Sensor Note: The bidder must state the Make and model of the sensor to ensure the authenticity of the component. the bid would be disqualified if the sensor used is not as mentioned by the bidder		
2	Maximum Resolution	2 MP (1920 x 1080)		
3	Lens Type	3.6 mm fixed lens		
4	FOV	HFOV - 90°, VFOV - 47°, DFOV - 110°		
5	Aperture (F#)	F 1.2		
6	Iris	Fixed iris		
7	Shutter speed	1/25-1/34000		
8	Minimum Illumination	Colour - 0.01 Lux @ (F1.2 AGC ON) Monochrome - 0 Lux		
9	Day/Night Camera Switching	Automatic/ Manual/ schedule		
10	Built in IR irradiance up to	50 m		
11	Noise Reduction	2 DNR, 3 DNR		
12	Adaptive streaming	Should reduce the FPS and Bit rate during no activity period.		
13	Signal to Noise Ratio (SNR)	≥70 dB		
14	Back light Compensation (BLC)	Supported		
15	Wide Dynamic Range (WDR)	120 dB True WDR		
16	VCA	Motion detection, View Tamper Detection, Tripwire detection, object Intrusion		
17	Events and actions	IP conflict, Network Disconnect, Storage Full, Time Trigger, E- mail, SMS, TCP notification		
18	Image Enhancement	Saturation/ Contrast/ Sharpness/Brightness/Auto Exposure/ Gamma /White balance/ HVS & Forensic, Intelligent Defog		
19	ONVIF Compliance	Profile S & Profile G The IP Camera make, and model shall appear on the ONVIF Conformant products List		
20	Unicasting/ Multicasting	Supported		
21	Auto initiation	The camera shall connect to the Network Video recorder (NVR) without any need of Static IP to the Camera in LAN as well as WAN.		
22	ROI	Supported		
23	Privacy masking	Up to 3 Zone programmable		
24	AWB	Supported		
26	MAC Address	The Mac Address of the Camera shall be registered in the name of the OEM.		
Video				
27	Supported Resolutions	1920 X 1080,720p, D1,2CIF, VGA, CIF, QCIF		
28	No of Stream Profiles	4		
29	Video Compression	H.265 H.264 MJPEG		
30	Frame Rate (FPS)	1 to 30		
31	Video Standard	PAL		
32	Number of Streaming profiles support	Four streams support Profile 1:- 1080p(2MP)/720p/D1/2CIF/CIF/QCIF up to 30 fps(H.265/H.264) Profile 2:- D1/2CIF/CIF/QCIF up to 30fps(H.265/H.264) Profile 3:- 1080p(2MP)/720p/D1/2CIF/CIF/QCIF up to 5 fps(MJPEG) Profile 4:- 720p/D1/2CIF/CIF/QCIF up to 30 fps(H.265/H.264/MJPEG)		
33	Bitrate	32 kbps-8 Mbps		
34	Edge Storage	SD Card - 512 GB & NAS		
35	Bitrate Type	CBR, VBR		
Network				
36	Ethernet	10Base-T/100BaseTX Ethernet (RJ-45)		
37	Network protocols	TCP/IP, HTTP, HTTPS, QoS, DHCP, DNS, DDNS, RTP, RTCP,RTSP, PPPOE, SMTP, NTP, HTTPS,TLS/SSL, FTP, ICMP, IGMP,ARP, UDP, 802.1x, SNMP, UPnP and Bonjour		
General				
38	Regulatory Approvals/ Certifications:	UL, CE, FCC, EN/IEC, IP66 ,IK10,BIS. Note: All the reports and certificates shall be from a NABL accredited Lab		
39	Power	POE (802.3af/at), 12 V 2A		
40	Operating Temperature	-20°C- +50°C		

ANNEXURE B3- 2 MP Fixed Bullet Camera				
S. No	Parameter	Specifications	Compliance (Yes/NO)	Remarks
1	Image Sensor	½.8" Progressive Scan, Backlight illuminated CMOS Sensor Note: The bidder must state the Make and model of the sensor to ensure the authenticity of the component. the bid would be disqualified if the sensor used is not as mentioned by the bidder		
2	Maximum Resolution	2 MP (1920 x 1080)		
3	Lens Type	3.6 mm fixed lens		
4	FOV	HFOV - 90°, VFOV - 47°, DFOV - 110°		
5	Aperture (F#)	F 1.2		
6	Iris	Fixed iris		
7	Shutter speed	1/25-1/34000		
8	Minimum Illumination	Color - 0.01 Lux @ (F1.2 AGC ON) Monochrome - 0 Lux		
9	Day/Night Camera Switching	Automatic/ Manual/ schedule		
10	Built in IR irradiance up to	50 m		
11	Noise Reduction	2 DNR, 3 DNR		
12	Adaptive streaming	Should reduce the FPS and Bit rate during no activity period.		
13	Signal to Noise Ratio (SNR)	≥70 dB		
14	Back light Compensation (BLC)	Supported		
15	Wide Dynamic Range (WDR)	120 dB True WDR		
16	VCA	Motion detection, View Tamper Detection, Tripwire detection, object Intrusion		
17	Events and actions	IP conflict, Network Disconnect, Storage Full, Time Trigger, E- mail, SMS, TCP notification		
18	Image Enhancement	Saturation/ Contrast/ Sharpness/Brightness/Auto Exposure/ Gamma /White balance/ HVS & Forensic, Intelligent Defog		
19	ONVIF Compliance	Profile S & Profile G The IP Camera make, and model shall appear on the ONVIF Conformant products List		
20	Unicasting/ Multicasting	Supported		
21	Auto initiation	The camera shall connect to the Network Video recorder (NVR) without any need of Static IP to the Camera in LAN as well as WAN.		
22	ROI	Supported		
23	Privacy masking	Up to 3 Zone programmable		
24	AWB	Supported		
26	MAC Address	The Mac Address of the Camera shall be registered in the name of the OEM.		
Video				
27	Supported Resolutions	1920 X 1080,720p, D1,2CIF, VGA, CIF, QCIF		
28	No of Stream Profiles	4		
29	Video Compression	H.265 H.264 MJPEG		
30	Frame Rate (FPS)	1 to 30		
31	Video Standard	PAL		
32	Number of Streaming profiles support	Four streams support Profile 1:- 1080p(2MP)/720p/D1/2CIF/CIF/QCIF up to 30 fps(H.265/H.264) Profile 2:- D1/2CIF/CIF/QCIF up to 30fps(H.265/H.264) Profile 3:- 1080p(2MP)/720p/D1/2CIF/CIF/QCIF up to 5 fps(MJPEG) Profile 4:- 720p/D1/2CIF/CIF/QCIF up to 30 fps(H.265/H.264/MJPEG)		
33	Bitrate	32 kbps-8 Mbps		
34	Edge Storage	SD Card - 512 GB & NAS		
35	Bitrate Type	CBR, VBR		
		Network		
36	Ethernet	10Base-T/100BaseTX Ethernet (RJ-45)		
37	Network protocols	TCP/IP, HTTP, HTTPS, QoS, DHCP, DNS, DDNS, RTP, RTCP,RTSP, PPPOE, SMTP, NTP, HTTPS, , TLS/SSL, FTP, ICMP, IGMP,ARP, UDP, 802.1x, SNMP, UPnP and Bonjour		
General				
38	Regulatory Approvals/ Certifications:	UL, CE, FCC, EN/IEC, IP66 ,IK10,BIS. Note: All the reports and certificates shall be from a NABL accredited Lab		
39	Power	POE (802.3af/at), 12 V 2A		
40	Operating Temperature	-20°C- +50°C		
41	Storage Temperature	-20°C- +50°C		
42	Operating Humidity	90% or less		

ANNEXURE B4- 32 Channel NVR with 4 SATA slots			
Sr. NO	SOFTWARE SPECIFICATIONS	Compliance (Yes/NO)	Remarks
1	It Should be Possible to configure, playback & live streaming of cameras added to other NVR from the main NVR without the need of any server/workstation.		
2	The system should be capable of integrating with IP cameras of any brand which supports ONVIF 2.0 & above or ONVIF S profile.		
3	It should be possible to define a different number of Retention days for individual cameras.		
4	NVR should have a configuration wizard for quick configurations.		
5	NVR should show the estimated number of storage days.		
7	Digital Zoom during live view.		
8	The system should be able to take a Snapshot during live view/ playback in JPEG format.		
9	The Device Must Provide Configuration Backup.		
11	Video pop-up for both Desktop and Local clients.		
12	3 User Access Levels (Default): Admin, Viewer, and Operator		
13	10,000 Events Log		
14	NVR Should Be Capable of Exporting Files in Native and AVI File Format to FTP and USB.		
15	NVR should have IP Address Filtering to Enhance Security.		
16	System Admin Should Be Capable of Programming PTZ Tour.		
17	Dual Stream Option Should Be Available for Simultaneous Recording and Transmission of Video on The Network Depending on The Bandwidth.		
18	The system should support Daylight Saving Time (DST).		
19	The Device Should Be Designed, Developed, and Manufactured in India.		
	MOBILE CLIENT		
20	Mobile application should be Provided by The Vendor Free of Cost with the NVR.		
21	It should be possible to see the playback from a mobile client.		
22	The Mobile client Should Have 4 x 4 Layout for Display cameras.		
23	The Mobile client Should Have Digital Zoom functionality.		
24	The Mobile client Should Be Able to Control PTZ Cameras.		
25	The Mobile client Software Should Support Up To 50 NVRs.		
26	Software Should Have Feature to Configure Camera as Favourite Channels.		
27	Mobile Viewer Application Should Function on Android and IOS Based Phones.		
HARDWARE SPECIFICATIONS		**Compliance (Yes/NO)**	**Remarks**
SYSTEM			
Control Mode	Desktop Client, Mobile Client, and Local client (Through HDMI)		
OS	Embedded Linux		
Processor	ARM cortex- Quad Core or equivalent.		
VIDEO AND AUDIO			
Video-Input	32 IP channels		
Video Output	HDMI (2.0) – 1 Port (Main)		
Video Compression	H.265/H.264/ Motion JPEG		
Audio input	1 Channel, RCA Port		
Audio Output	1 Channel, RCA Port		
Audio Compression	G.711		
Two-way Audio	Required		
DISPLAY			
Recording Resolution	12MP, 8MP, 5MP, 4MP, 3MP, 2MP, 720p, D1, CIF		
Decoding Resolution (on local display)	Up to 4K		
Split (Through LAN/HDMI)	1x1, 2x2, 3x3, 4x4, 1+5, 1+7, 3+4, 2+8, 1+12, 1©+12, 1+9, 4+9,2+12, 5x5, 6x6, 8x8 and Sequential		
Digital Zoom	Both Live view and Playback		
OSD	Channel Number, Name, Bitrate, video loss		
Snapshot Format	JPEG		
Recording type	Continuous, Scheduled, Manual, Alarm		
Bandwidth Optimization	Yes		
PLAYBACK AND BACKUP			
Synchronous Playback	4 channels @ 1080P		
Search Mode	Date & Time, Camera, Recording Type, Recording Drive		
Playback Modes	Fast Forward, Slow Forward, Slow Reverse, Fast Reverse at Different Speed Control, Next-Previous Frame		
Backup	Manual Backup & Scheduled Backup		
Configuration Backup	Required		
Remote Operations	Monitor, PTZ Control, Playback, System Setting, File Download, Log Information, Upgrade		
VIDEO DETECTION AND ALARMS			
Camera events	Motion Detection, Recording Start, Recording Fail, Camera offline, Camera online		
System events	Manual Trigger, On Boot Alarm, Storage Alert, Disk Volume Full, Disk Fault, Scheduled Backup Fail		



Actions	Recording on Selected Channel, Upload Images on FTP/Email server, Email Notification with Snapshot, TCP Notification, Recall PTZ Preset Position, Turn On/Off Alarm Outputs, Buzzer Notification, SMS Notification		
DEVICE STATUS			
Camera status, Manual recording, Scheduled recording, Alarm recording, Adaptive recording	Required		
FPS and GOP count	Required		
Motion detection, View tampering, Tripwire, Object intrusion, Missing Object, Suspicious Object, Loitering Detection, Audio Exception, Object Counting	Required		
CPU usage display	Required		
CPU temperature display	Required		
Thermal shutdown	Required		
STORAGE			
SATA Interface	4 SATA III (10TB per port)		
NAS	2 NAS (CIFS, NFS)		
RAID	RAID-0, RAID-1, RAID-5, RAID-10		
Recording Retention	Camera-wise, HDD usage % wise, Day wise		
NETWORK			
Incoming Bandwidth	256 Mbps		
Outgoing Bandwidth	256 Mbps		
Maximum User	120 Programmable		
Simultaneous login	9		
Network Protocols	TCP/IP, DHCP, PPPOE, DNS, DynDNS, FTP, SMTP, NTP, RTP/RTSP, CIFS/NFS		
INTERFACES			
Audio Input	1 Channel, RCA Port ($1V_{RMS}$)		
Audio Output	1 Channel, RCA Port ($0.5V_{RMS}$)		
Alarm Input	2 Ports (Max. load resistance: 4.7 KΩ)		
Alarm Output	1 Port (Max load power: <50VA, Max load current: <1A)		
Network Interface	2 Ports x Ethernet (RJ-45) 10/100/1000Mbps		
USB	3 ports (2 x USB 2.0, 1x USB 3.0)		
Number of SATA Interface	4 Ports (SATA III)		
HDD size	10 TB HDD support (with 6Gb/s speed)		
HDMI	HDMI (2.0) – 1 Port (Main)		
Reset Switch (Network, User account, and General settings)	Required		
Buzzer	Required		
CERTIFICATION			
Regulatory Approvals/ Certifications	FCC (FCC Part 15 Subpart B Class A), ROHS, BIS, CE,EN/IEC		
ELECTRICAL AND MECHANICAL			
Operating temperature	0°C to +50°C (32°F to 122°F)		
Humidity range	5% to 95% RH Non-Condensing		

ANNEXURE B5 -16 Channel NVR with 2 SATA slots.

Sr. NO	SOFTWARE SPECIFICATIONS	Compliance (Yes/NO)	Remarks
1	It Should be Possible to configure, playback & live streaming of cameras added to other NVR from the main NVR without the need of any Server/workstation.		
2	The system should be capable of integrating with IP cameras of any brand which supports ONVIF 2.0 & above or ONVIF S profile.		
3	it should be possible to define a different number of Retention days for individual cameras.		
4	NVR should have a configuration wizard for quick configurations.		
5	NVR should show the estimated number of storage days.		
7	Digital Zoom during live view.		
8	The system should be able to take a Snapshot during live view/ playback in JPEG format.		
9	The Device Must Provide Configuration Backup.		
11	Video pop-up for both Desktop and Local clients.		
12	3 User Access Levels (Default): Admin, Viewer, and Operator		
13	10,000 Events Log		
14	NVR Should Be Capable of Exporting Files in Native and AVI File Format to FTP and USB.		
15	NVR should have IP Address Filtering to Enhance Security.		
16	System Admin Should Be Capable of Programming PTZ Tour.		
17	Dual Stream Option Should Be Available for Simultaneous Recording and Transmission of Video on The Network Depending on The Bandwidth.		
18	The system should support Daylight Saving Time (DST).		
19	The Device Should Be Designed, Developed, and Manufactured in India.		
	MOBILE CLIENT		
20	Mobile application should be Provided by The Vendor Free of Cost with the NVR.		
21	It should be possible to see the playback from a mobile client.		
22	The Mobile client Should Have 4 x 4 Layout for Display cameras.		
23	The Mobile client Should Have Digital Zoom functionality.		
24	The Mobile client Should Be Able to Control PTZ Cameras.		
25	The Mobile client Software Should Support Up To 50 NVRs.		
26	Software Should Have Feature to Configure Camera as Favourite Channels.		
27	Mobile Viewer Application Should Function on Android and IOS Based Phones.		
HARDWARE SPECIFICATIONS		**Compliance (Yes/NO)**	**Remarks**
SYSTEM			
Control Mode	Desktop Client, Mobile Client, and Local client (Through HDMI)		
OS	Embedded Linux		
Processor	ARM cortex- Quad Core or equivalent		
VIDEO AND AUDIO			
Video-Input	16 IP channels		
Video Output	HDMI (2.0) – 1 Port (Main)		
Video Compression	H.265/H.264/ Motion JPEG		
Audio input	1 Channel, RCA Port		
Audio Output	1 Channel, RCA Port		
Audio Compression	G.711		
Two-way Audio	Required		
DISPLAY			
Recording Resolution	Up to 12MP		
Decoding Resolution (on local display)	Up to 4K.		
Split (Through LAN/HDMI)	1x1, 2x2, 3x3, 4x4, 1+5, 1+7, 3+4, 2+8, 1+12, 1©+12, 1+9, 4+9,2+12, 5x5, 6x6, 8x8 and Sequential		
Digital Zoom	Required in both live view & Playback		
OSD	Channel Number, Name, Bitrate, video loss		
Snapshot Format	JPEG		
Recording type	Continuous, Scheduled, Manual, Alarm		
Bandwidth Optimization	Yes		
PLAYBACK AND BACKUP			
Synchronous Playback	4 channels @ 1080P		
Search Mode	Date & Time, Camera, Recording Type, Recording Drive		
Playback Modes	Fast Forward, Slow Forward, Slow Reverse, Fast Reverse at Different Speed Control, Next-Previous Frame		
Backup	Manual Backup & Scheduled backup		
Configuration Backup	Required		
Remote Operations	Monitor, PTZ Control, Playback, System Setting, File Download, Log Information, Upgrade		
VIDEO DETECTION AND ALARMS			
Camera events	Motion Detection, Recording Start, Recording Fail, Camera offline, Camera online		
System events	Manual Trigger, On Boot Alarm, Storage Alert, Disk Volume Full, Disk Fault, Scheduled Backup Fail		
Actions	Recording on Selected Channel, Upload Images on FTP/Email server, Email Notification with Snapshot, TCP Notification, Recall PTZ Preset Position, Turn On/Off Alarm Outputs, Buzzer Notification, SMS Notification,		
DEVICE STATUS			
Camera status, Manual recording, Scheduled recording, Alarm recording, Adaptive recording	Required		
FPS and GOP count	Required		
Motion detection, View tampering, Tripwire, Object intrusion, Missing Object, Suspicious Object, Loitering Detection, Audio Exception, Object Counting	Required		
CPU usage display	Required		
CPU temperature display	Required		
Thermal shutdown	Required		
STORAGE			
SATA Interface	2 SATA III (10TB per port)		
NAS	2 NAS (CIFS, NFS)		

RAID	RAID-0, RAID-1		
Recording Retention	Camera-wise, HDD usage % wise, Day wise		
NETWORK			
Incoming Bandwidth	256 Mbps		
Outgoing Bandwidth	256 Mbps		
Maximum User	120 Programmable		
Simultaneous login	9		
Network Protocols	TCP/IP, DHCP, PPPOE DNS, DDNS, DNS, FTP, SMTP, NTP, RTP/RTSP, CIFS/NFS, Network Acceleration		
INTERFACES			
Audio Input	1 Channel, RCA Port (1V RMS)		
Audio Output	1 Channel, RCA Port (0.5V RMS)		
Alarm Input	2 Ports (Max. load resistance: 4.7 KΩ)		
Alarm Output	1 Port (Max load power: <50VA, Max load current: <1A)		
Network Interface	2 Ports x Ethernet (RJ-45) 10/100/1000Mbps		
USB	3 ports (2 x USB 2.0, 1x USB 3.0)		
Number of SATA Interface	2 Ports (SATA III)		
HDD size	10 TB HDD support (with 6Gb/s speed)		
HDMI	HDMI (2.0) – 1 Port (Main)		
Reset Switch (Network, User account, and General settings)	Required		
Buzzer	Required		
CERTIFICATION			
Regulatory Approvals/ Certifications	FCC (FCC Part 15 Subpart B Class A), ROHS, BIS, CE,EN/IEC		
ELECTRICAL AND MECHANICAL			
Operating temperature	0°C to +50°C (32°F to 122°F)		
Humidity range	5% to 95% RH Non-Condensing		

ANNEXURE B5 -16 Channel NVR with 2 SATA slots.

Sr. NO	SOFTWARE SPECIFICATIONS	Compliance (Yes/NO)	Remarks
1	It Should be Possible to configure, playback & live streaming of cameras added to other NVR from the main NVR without the need of any Server/workstation.		
2	The system should be capable of integrating with IP cameras of any brand which supports ONVIF 2.0 & above or ONVIF S profile.		
3	it should be possible to define a different number of Retention days for individual cameras.		
4	NVR should have a configuration wizard for quick configurations.		
5	NVR should show the estimated number of storage days.		
7	Digital Zoom during live view.		
8	The system should be able to take a Snapshot during live view/ playback in JPEG format.		
9	The Device Must Provide Configuration Backup.		
11	Video pop-up for both Desktop and Local clients.		
12	3 User Access Levels (Default): Admin, Viewer, and Operator		
13	10,000 Events Log		
14	NVR Should Be Capable of Exporting Files in Native and AVI File Format to FTP and USB.		
15	NVR should have IP Address Filtering to Enhance Security.		
16	System Admin Should Be Capable of Programming PTZ Tour.		
17	Dual Stream Option Should Be Available for Simultaneous Recording and Transmission of Video on The Network Depending on The Bandwidth.		
18	The system should support Daylight Saving Time (DST).		
19	The Device Should Be Designed, Developed, and Manufactured in India.		
	MOBILE CLIENT		
20	Mobile application should be Provided by The Vendor Free of Cost with the NVR.		
21	It should be possible to see the playback from a mobile client.		
22	The Mobile client Should Have 4 x 4 Layout for Display cameras.		
23	The Mobile client Should Have Digital Zoom functionality.		
24	The Mobile client Should Be Able to Control PTZ Cameras.		
25	The Mobile client Software Should Support Up To 50 NVRs.		
26	Software Should Have Feature to Configure Camera as Favourite Channels.		
27	Mobile Viewer Application Should Function on Android and IOS Based Phones.		

HARDWARE SPECIFICATIONS		Compliance (Yes/NO)	Remarks
SYSTEM			
Control Mode	Desktop Client, Mobile Client, and Local client (Through HDMI)		
OS	Embedded Linux		
Processor	ARM cortex- Quad Core or equivalent		
VIDEO AND AUDIO			
Video-Input	16 IP channels		
Video Output	HDMI (2.0) – 1 Port (Main)		
Video Compression	H.265/H.264/ Motion JPEG		
Audio input	1 Channel, RCA Port		
Audio Output	1 Channel, RCA Port		
Audio Compression	G.711		
Two-way Audio	Required		
DISPLAY			
Recording Resolution	Up to 12MP		
Decoding Resolution (on local display)	Up to 4K.		
Split (Through LAN/HDMI)	1x1, 2x2, 3x3, 4x4, 1+5, 1+7, 3+4, 2+8, 1+12, 1©+12, 1+9, 4+9,2+12, 5x5, 6x6, 8x8 and Sequential		
Digital Zoom	Required in both live view & Playback		
OSD	Channel Number, Name, Bitrate, video loss		
Snapshot Format	JPEG		
Recording type	Continuous, Scheduled, Manual, Alarm		
Bandwidth Optimization	Yes		
PLAYBACK AND BACKUP			
Synchronous Playback	4 channels @ 1080P		
Search Mode	Date & Time, Camera, Recording Type, Recording Drive		
Playback Modes	Fast Forward, Slow Forward, Slow Reverse, Fast Reverse at Different Speed Control, Next-Previous Frame		
Backup	Manual Backup & Scheduled backup		
Configuration Backup	Required		
Remote Operations	Monitor, PTZ Control, Playback, System Setting, File Download, Log Information, Upgrade		
VIDEO DETECTION AND ALARMS			
Camera events	Motion Detection, Recording Start, Recording Fail, Camera offline, Camera online		
System events	Manual Trigger, On Boot Alarm, Storage Alert, Disk Volume Full, Disk Fault, Scheduled Backup Fail		
Actions	Recording on Selected Channel, Upload Images on FTP/Email server, Email Notification with Snapshot, TCP Notification, Recall PTZ Preset Position, Turn On/Off Alarm Outputs, Buzzer Notification, SMS Notification,		
DEVICE STATUS			
Camera status, Manual recording, Scheduled recording, Alarm recording, Adaptive recording	Required		
FPS and GOP count	Required		
Motion detection, View tampering, Tripwire, Object intrusion, Missing Object, Suspicious Object, Loitering Detection, Audio Exception, Object Counting	Required		
CPU usage display	Required		
CPU temperature display	Required		
Thermal shutdown	Required		
STORAGE			
SATA Interface	2 SATA III (10TB per port)		
NAS	2 NAS (CIFS, NFS)		

RAID	RAID-0, RAID-1		
Recording Retention	Camera-wise, HDD usage % wise, Day wise		
NETWORK			
Incoming Bandwidth	256 Mbps		
Outgoing Bandwidth	256 Mbps		
Maximum User	120 Programmable		
Simultaneous login	9		
Network Protocols	TCP/IP, DHCP, PPPOE DNS, DDNS, DNS, FTP, SMTP, NTP, RTP/RTSP, CIFS/NFS, Network Acceleration		
INTERFACES			
Audio Input	1 Channel, RCA Port (1V RMS)		
Audio Output	1 Channel, RCA Port (0.5V RMS)		
Alarm Input	2 Ports (Max. load resistance: 4.7 KΩ)		
Alarm Output	1 Port (Max load power: <50VA, Max load current: <1A)		
Network Interface	2 Ports x Ethernet (RJ-45) 10/100/1000Mbps		
USB	3 ports (2 x USB 2.0, 1x USB 3.0)		
Number of SATA Interface	2 Ports (SATA III)		
HDD size	10 TB HDD support (with 6Gb/s speed)		
HDMI	HDMI (2.0) – 1 Port (Main)		
Reset Switch (Network, User account, and General settings)	Required		
Buzzer	Required		
CERTIFICATION			
Regulatory Approvals/ Certifications	FCC (FCC Part 15 Subpart B Class A), ROHS, BIS, CE,EN/IEC		
ELECTRICAL AND MECHANICAL			
Operating temperature	0°C to +50°C (32°F to 122°F)		
Humidity range	5% to 95% RH Non-Condensing		



ANNEXURE A- DEPARTMENT WISE CAMERA DETAILS

S.no	Department	Dome Camera	Bullet Camera	PTZ Camera			
	Boys Hostel						
1	Ground Floor	**4** for Corridors , **1** For messs	1 for Back side of the hostel 2 for front entry				
2	1st Floor	**3** for Corridors					
3	Iind Floor	**3** for Corridors					
	Total	**14**					
	Girls Hostel						
1	Ground Floor	1	2	2			
	Total	**5**					
	Hospital						
1	Basement /Parking	4	2 (Basement Path for parking and Pump side)	1			
2	Ground Floor	2 for hall entry 2 (OPD Waiting) 2 (X-ray) 3(Operation Therator)	4 (Road Side entry)				
3	Ist Floor	3(Operation Theator) 1 for Operation Theartor waiting room 1 for Stairs 2 for Corridors					
4	2nd Floor	3(Operation Theator) 1 for Operation Theartor waiting room 1 for Stairs 2 for Corridors					
5	3rd Floor	3(Operation Theator) 1 for Operation Theartor waiting room 1 for Stairs 2 for Corridors					
6	Terrace		2				
	Total	**43**					
	Control Room/Medical Superintendent						
1	Basement	2 for drug Store	2 (1for Exit and1 Cylinder room)	1			
3	Ground Floor	3 (Control room corridors)	4 (1 for gate near dustbin, 2 for Parking, 1 for upstairs towards control room)				
	Control Room to New Bulding	2	1				
	Total	**15**					
	Admin Block						
1	Ground	2 (Panning and Account Sec Entry)	2 (One for back side and 1 for main Entry)				
3	Terrace		1 Facing boys hostel Terrace				
	Total	**6**					

Grand Total of Cameras **83 Nos**

3	ANNEXURE C1 -Switch Technical Specification		
Features	Desired Specification/Qualitative Requirement	Compliance(Yes/No)	Remark
Model	10BASE-T/100BASE-TX/1000BASE-T: 24 POE(24 Ports compliant with 802.3at/af)		
	4 100/1000 Mbps GbE/SFP combo ports		
Switch Category	Gigabit Managed Switches		
Performance	Switching Capacity: 56 Gbps		
	Max. Packet Forwarding Rate: 41.7 Mpps		
	MAC Address Table: 8K and 4.1 Mbits Packet Buffer.		
	Static routing : 124 Static routes		
	Static MAC Entries : 256 entries		
Physical Features	19" Rack mount, 1U Height		
	Power Supply: Internal AC Power Supply,		
	Power Saving (Green)		
Layer 2 Features	Spanning Tree (STP) 802.1d		
	RSTP 802.1w , 802.1s MSTP		
	Loopback Detection		
	Link Aggregation LACP 802.3ad: Minimum 8 groups per device and 8 ports per group		
	Port Mirroring : One-to-One / Many-to-One		
	Jumbo Frame: 10K Bytes		
	Dual image & Dual configuration		
	Multicast Filtering		
Layer 2 Multicast Features	Internet Group Management Protocol (IGMP) Snooping : v1 / v2		
	IGMP Snooping Groups : 256		
Virtual LAN (VLAN) Features	Tagged VLAN 802.1Q, 256 Static VLANs		
	Auto Voice & Surveillance VLAN		
	Asymmetric VLAN		
Quality of Service (QoS) Features	No. of Queues : 8 Queues per port		
	Traffic Prioritization 802.1p		
	Strict Priority		
	Weighted Round Robin (WRR)		
	QoS based on Switch Port		
	QoS based on 802.1p Priority		
	QoS based on Differentiated Services Code Point (DSCP)		
	Bandwidth Control: Port-based (Ingress/Egress, min granularity 10/100/1000 is 16 Kbps)		
Access Control List (ACL) Features	Access Control List based on:		
	• 802.1p priority		
	• VLAN		
	• MAC address• Ether type		
	• IP address		
	• DSCP		
	• Protocol type		
	• TCP/UDP port number		
	• IPv6 Traffic Class		
	Max. ACL Profiles / Rules: 50 / 768		
AAA	802.1X Authentication		
	• Supports local/RADIUS database		
	• Supports port-based access control		
	• Supports EAP, OTP, TLS, TTLS, PEAP		
	• Max. 128 entries when using local database		
	• IPv6 RADIUS server		
	• Support MD5 authentication		
Security Features	DoS attack prevention		
	Port Security: Max. 64 MAC Addresses per Port		
	Broadcast/Multicast/Unicast Storm Control		
	DHCP Server Screening		
	ARP Spoofing Prevention		
	In case of ARP Broadcast Storm, Virus Attacks switch should have ability to protect Control and Management Plane.		
	Support 4 IP Interface & IPv6 Neighbor Discovery (ND)		
	Traffic segmentation		
Certifications	FCC Class A,CE Class A,IC Class A,VCCI Class A,UL		

ANNEXURE C2- Technical Specification for Category 6 UTP, 4 Pair			
Features	**Requirements**	**Compliance**	**Remarks**
General	Category 6 Unshielded Twisted Pair 4 pair 100W cable shall be compliant with ANSI/TIA/EIA-568-C.2		
	Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, 23 AWG, UTP.		
	The 4 pair Unshielded Twisted Pair cable shall be UL Listed		
	All Category 6 cables shall meet or exceed the following characteristics:		
Mechanical Characteristics	Construction: 4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.		
	Conductor Solid bare Copper		
	Conductor Diameter 0.56±0.005mm (23 AWG)		
	Insulation :High Density Polyethylene		
	Jacket FR PVC		
	Outer Diameter 6.1 mm nominal		
	Temperature Range -20° to +60°C		

Technical Specification for RJ-45 Connectors			
Features	**Requirements**	**Compliance**	**Deviations**
Genaral	RJ-45 Connectors pack of 100		

ANNEXURE C3 - SM Fiber Cable		
S/N	Desired Specification/Qualitative Requirement	Compliance (Yes/No)
1	The fiber type is a Matched Cladding Single Mode, Six Core	
2	Fiber dual coated with acrylate coating.	
3	The fiber is optimized for operation at 1310 nm and at 1550 nm.	
4	Should fulfill the requirements of: IEC 793-2: 1992, EN 188101 and ITU-T Recommendation G.652	
5	Testing methods are in accordance with the following standards: ITU-T G.652.D, IEC 793-1 and Telecordia : GR-20 Core,ISO : 11801	
6	Maximum induced permanent loss after 1000 h at 1 bar H2 at 70 °C and out gassing for 72 h at 70°C (valid both at 1310 nm and at 1550 nm): 0.2 dB/km	

FIBER PATCH PANELS - SIX CORE – RACK MOUNT		
S/N	Desired Specification/Qualitative Requirement	Compliance (Yes/No)
1	Have sufficient slots accommodate Simplex/duplex SC/LC/FC adapters individually.	
2	Aluminum base material for light mounting	
3	Should have Splice Tray & Cable Spool provision inside	
4	Accessory kit consists of cable ties, mounting ear screw earthling and spiral wrap tube.	
5	Can Include 48 LC,24SC,24 ST and 24 FC Terminations	
6	Removable Rubber grommet to allow for pre-terminated fiber trunk installation,protect cable and minimize dust build up	
7	Should have cable ties,mounting ear screws and spiral wrap tube	

ADAPTORS		
S/N	Desired Specification/Qualitative Requirement	Compliance (Yes/No)
1	All SC/LC/FC adaptors should be Simplex and duplex type. Adapters should have compact design & high precision, which perform well under various circumstances & maintain good plug retention strength.	
2	Telcordia, TIA/EIA, IEC compliance	
3	0.20db for Zirconia Sleeve	
4	SC / FC Adapter 2.0N ~ 5.9N , LC Adapter-1.0N ~ 2.5N	

Optical Fiber Connectors		
S/N	Desired Specification/Qualitative Requirement	Compliance (Yes/No)
1	Provide a field installable single mode connector to terminate fiber optic cables from cable-to-cable, cable-to-equipment and equipment-to-equipment.	
2	The connector must: Be field installable	
3	Utilize a PC polishing on the tip to provide high yield during installation.	
4	Meet EIA and IEC standards for repeatability.	
5	<0.3 db	
6	1000 Times	
7	> 50 db	
8	-40 deg C. to +85 deg.c	
9	IEC 61754-20	
10	SC/LC/FC	

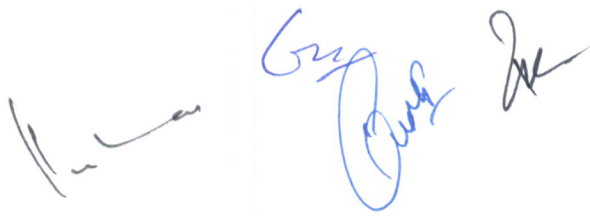
Optical Fiber Equipment Cords (minimum 3 meter)		
S/N	Desired Specification/Qualitative Requirement	Compliance (Yes/No)
1	All optical fiber patch leads shall comprise of Single mode 9/125µm fiber with SC/LC/FC, fiber connectors terminated at each end. The optical fiber patch leads shall comply with the following specifications:	
2	Optical Fiber – Corning Single Mode	
3	Connector: Zirconia ceramic ferrule	
4	Pre-radiuses and pre-polished ferrule	
5	Simplex / Duplex	
6	Color-coded Yellow for SM	
7	Insertion Loss - <0.2 db	
8	Cable: 9/125, SM	
9	Repeatability - < 0.2 db	
10	Durability – 1000 mating cycle	
11	Working Temp : -40 deg C.to + 85 deg. C	
12	Standard : G652D, G 657A & G 657B	
13	Length : 1,2,3,5 & on request	

ANNEXURE C4

Sr.No.	Specification	Compliance Yes/No	Deviation If any
	Rack 6 U		
1	Adjustable 19" equipment mounting verticals provide the better mounting flexibility and maximizes the usable mounting space		
2	Depth adjustable mounting slots		
3	Precision engineering capabilities and best efficient software configuration product technology provides the best product quality and fastest delivery in the industry		
4	Top and bottom Panel with ventilation and cable entry facility		
5	Provision to mount the cooling fans on the top panel		
6	Powder coated finish with pretreatment process meeting all industry standards		
7	Grounding and Bonding Options. 100% assured compatibility with all equipment conforming to DIN 41494 (General industrial standard for equipment)		
	Specification		
8	Rack Standard : Conforms to DIN 41494 or equivalent standard		
9	Construction : Welded		
10	Front Door : Lockable Toughened Glass Door		
11	Basic Frame : Steel		
12	Equipment Mounting : DIN Standard Slots		
13	Mounting Angle : 19" Mounting angles made of formed steel		
14	Standard Finish : Powder Coated		
15	Top and Bottom Cover : Welded to Frame, Vented and Field Cable entry exit cut outs		
16	Standard Color : Grey or Black		

ANNEXURE D1 - HDD

S.no	Technical Specifications		Compliance(Yes/No)	Remark
1	Storage Capacity	12 TB		
2	Drive Interface	SATA		
3	Drive Interface Standard	SATA/600		
	Drive Performance			
4	Spindle Speed (rpm)	7200		
5	Buffer	256 MB		
6	Drive Type	Internal		
7	Form Factor	3.5"		
8	Durability	Tarnish Resistant		
9	Limited Warranty	3 Year		
10	Device Supported	Network Video Recorder		
11	Environmentally Friendly	Yes		



ANNEXURE D2 - SMART TV - 55 INCH

	55 Inch Professional Display	Compliance(Yes/No)	Remarks
Diagonal Size	55		
Panel Type	Edge LED BLU		
Resolution	UHD (3840 x 2160)		
Brightness	350nit		
Contrast Ratio	4000:1		
Viewing Angle(H/V)	178:178		
Response Time	8ms		
Display Colors	1.07 Billion		
Color Gamut	72%		
Dynamic C/R	MEGA		
Audio	Built in Speaker(10W + 10W)		
INPUT Type	DVI-D,HDMI 2.0 X 2, USB 2.0 x 1 , Audio Input X 1		
OUTPUT Type	Stereo Mini Jack		
Duty Cycle	16 x 7		
Special features	Temperature Sensor,Pivot Display, IP5x Rating, Wireless Mirroring, 8GB internal memory		
Logo	Should have Customized Logo when no signal is active		
File support	Direct vieweing of PPT, Word ,PDF, Images and video from pen drive		
Remote Controlling of device	Laptop / Desktop Should be contolled remotely by external Keyboard and mouse through display		
EXTERNAL CONTROL	RS232C(in) thru stereo jack, RJ45, IR		
VESA Mount	Yes		
Operating Temperature	0°C~ 40°C		
Safety	CE, FCC, Energy Star 8.0, BIS		

ANNEXURE D3 - LCD DISPLAY 21.5 INCH

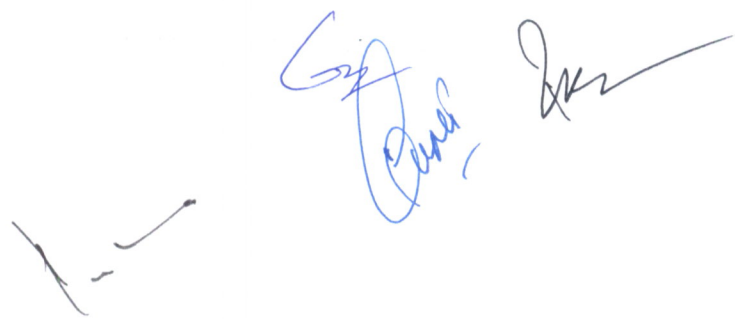
LED feature	**Specification**	Compliance(Yes/No)	Remarks
Display size	54.6 cm (21.5 in) diagonal		
Display type	IPS with LED backlight, anti-glare		
Panel active area	50.9 x 26.8 cm (18.7 x 10.5 in)		
Brightness	300 nits		
Color gamut	72% NTSC		
Color support	Up to 16.7 million colors with the use of FRC technology		
Pixel pitch			
	102 PPI		
Inputs	1 VGA		
	1 HDMI		
	HDCP supported on HDMI.		
Viewing angle	Horizontal viewing angle (typical): 178 degrees		
	Vertical viewing angle (typical): 178 degrees		
Scan range	Horizontal: 30 to 86 KHz		
	Vertical: 48 to 75 Hz		
Recommended resolution	1920 x 1080 @ 60 Hz (FHD)		
	Full high-definition (FHD) content required to view FHD images.		
Aspect ratio	16:09		
Static contrast ratio	10000:1		
Dynamic contrast ratio	10,000,000:1		
Response time	5 ms gray-to-gray (GtG) with overdrive		
	Typical: 14 ms GtG		
	Maximum: 28 ms GtG		
	Actual performance might vary.		
Tilt	-5 to +25 degrees		
Power supply	External/Internal		

ANNEXURE D4- UPS 1 KVA with 15 Minutes Backup

Description	Specs	Compliance(Yes/No)	Remarks
Configuration	Single		
Input Voltage Range	110V to 280 V		
Input frequency	50Hz		
Input frequency variation	47Hz - 53 Hz		
Input Power factor	>= 0.99		
It should have cold Start Feature			
Output Parameters			
Capacity	1KVA Double Conversion Online		
Crest Factor	Maximum 3:1		
Battery Parameters			
Charger Capacity	4 Amp		
Battery Recharge Time	Minimum 4 hrs to 90% Charge		
Backup Time	Minimum 15 Minutes		
I/O Properties	Battery Information		
	Load Information		
	Mode operation information		
	Backup time		
	Warning fault		
Protection	Over Voltage Cutoff Device		
Frequency Range	50Hz		
Operation Mode	Less than 1ns in Normal Mode		
Response time	< .5 ns in Normal Mode		
Mode of Protection	Line to Neutral and Neutral to Ground with minimum 10kA		
It should have short circuit protection.			
Certifications	ERTL/BIS Made In India Safety EN62040-1:2008 EMC EN62040-2:2006 class C2 Surge IEC/EN/AS61000-4-2 ESD IEC/EN/AS61000-4-3 Electrical Fast Transient IEC/EN/AS 62040-2 2a Ed Clase A Harmonics IEC/EN/AS61000-4-6		

ANNEXURE D5 -Line interactive UPS 1KVA

Input Features		Compliance(Yes/No)	Remarks
Input Voltage	230 V, Single Phase		
Input Frequency	50 Hz		
Output Features			
Output Voltage	230V +-10%		
Output Frequency	50 Hz		
Output Power Wattage	360 W		
Efficiency	90%		
Output Waveform	Modified Sine Wave		
Transfer Time	< 5 ms		
Number of Outlet Plugs	3		
Battery Features			
Battery Voltage	12 V		
Full Load Runtime	15 min		
Environmental Features			
Maximum Operating Tempera	40 degree C		
Operating Humidity	0-90 %		



ANNEXURE D5 -Line interactive UPS 1KVA

Input Features		Compliance(Yes/No)	Remarks
Input Voltage	230 V, Single Phase		
Input Frequency	50 Hz		
Output Features			
Output Voltage	230V +-10%		
Output Frequency	50 Hz		
Output Power Wattage	360 W		
Efficiency	90%		
Output Waveform	Modified Sine Wave		
Transfer Time	< 5 ms		
Number of Outlet Plugs	3		
Battery Features			
Battery Voltage	12 V		
Full Load Runtime	15 min		
Environmental Features			
Maximum Operating Tempera	40 degree C		
Operating Humidity	0-90 %		

