MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY GORAKHPUR, UTTAR PRADESH

TENDER DOCUMENT

NOTICE INVITING TENDER THROUGH GEM PORTAL

FOR

Supply and Installation of CCTV System

BID NO: GEM/2026/B/8169853

बिड संख्या/Bid Number: GEM/2026/B/8169853
दिनांक /Dated: 21-10-2026

बिड दस्तावेज़ / Bid Document

बिड विवरण/Bid Details	
बिड बंद होने की तारीख/समय /Bid End Date/Time	05-11-2026 17:00:00
बिड खुलने की तारीख/समय /Bid Opening Date/Time	06-11-2026 17:00:00
बिड पेशकश वैधता (बंद होने की तारीख से)/Bid Offer Validity (From End Date)	90 (Days)
मंत्रालय/राज्य का नाम/Ministry/State Name	Uttar Pradesh
विभाग का नाम/Department Name	Technical Education Department Uttar Pradesh
संगठन का नाम/Organisation Name	N/a
कार्यालय का नाम/Office Name	M M M University Of Technology, Gorakhpur
शिकायत निवारण के संपर्क विवरण/ Contact details of Grievance redressal	HOD Email id :hod2.mmmut.gkp@gembuyer.in Buyer Email id: purchaseoffice@mmmut.ac.in
कुल मात्रा/Total Quantity	18813
वस्तु श्रेणी /Item Category	Camera for CCTV System (V3) (Q2) , Video Recorder for CCTV System (V2) (Q2) , Television (V3) (Q2) , Ethernet Cables (Q2) , Optical Fibre Cable for Networking (Q3)
पिछले 3 वित्तीय वर्षों का बिडर का न्यूनतम औसत वार्षिक वित्तीय टर्नओवर/Minimum Average Annual Turnover of the bidder (For the last 3 Financial Years)	84 Lakh (s)
मूल उपकरण निर्माता का औसत टर्नओवर (गत 3 वर्षों का)/OEM Average Turnover (Last 3 Years)	679 Lakh (s)
उन्हीं/समान सेवा के लिए अपेक्षित विगत अनुभव के वर्ष/Years of Past Experience Required for same/similar service	3 Year (s)
टर्नओवर पात्रता मानदंड/Turnover eligibility criteria	To be verified by the buyer at the time of technical evaluation
एमएसएमई के लिए अनुभव के वर्षों और टर्नओवर से छूट प्रदान की गई है/MSE Relaxation for Years of Experience and Turnover	No
स्टार्टअप के लिए अनुभव के वर्षों और टर्नओवर से छूट प्रदान की गई है /Startup Relaxation for Years of Experience and Turnover	No

बिड विवरण/Bid Details	
विक्रेता से मांगे गए दस्तावेज़/**Document required from seller**	Experience Criteria,Past Performance,Bidder Turnover,Certificate (Requested in ATC),OEM Authorization Certificate,OEM Annual Turnover,Additional Doc 1 (Requested in ATC),Additional Doc 2 (Requested in ATC),Compliance of BoQ specification and supporting document *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
क्या आप निविदाकारों द्वारा अपलोड किए गए दस्तावेज़ों को निविदा में भाग लेने वाले सभी निविदाकारों को दिखाना चाहते हैं? संदर्भ मेनू है/**Do you want to show documents uploaded by bidders to all bidders participated in bid?**	Yes (Documents submitted as part of a clarification or representation during the tender/bid process will also be displayed to other participated bidders after log in)
बिड लगाने की समय सीमा स्वतः नहीं बढ़ाने के लिए आवश्यक बिड की संख्या। / **Minimum number of bids required to disable automatic bid extension**	3
दिनों की संख्या, जिनके लिए बिड लगाने की समय-सीमा बढ़ाई जाएगी। / **Number of days for which Bid would be auto-extended**	3
ऑटो एक्सटेंशन अधिकतम कितनी बार किया जाना है। / **Number of Auto Extension count**	1
विगत प्रदर्शन /**Past Performance**	80 %
बिड से रिवर्स नीलामी सक्रिय किया/**Bid to RA enabled**	Yes
रिवर्स नीलामी योग्यता नियम/**RA Qualification Rule**	H1-Highest Priced Bid Elimination
बिड का प्रकार/**Type of Bid**	Two Packet Bid
प्राथमिक उत्पाद श्रेणी/**Primary product category**	Camera for CCTV System (V3)
तकनीकी मूल्यांकन के दौरान तकनीकी स्पष्टीकरण हेतु अनुमत समय /**Time allowed for Technical Clarifications during technical evaluation**	2 Days
निरीक्षण आवश्यक (सूचीबद्ध निरीक्षण प्राधिकरण /जेम के साथ पूर्व पंजीकृत एजेंसियों द्वारा)/**Inspection Required (By Empanelled Inspection Authority / Agencies pre-registered with GeM)**	No
अनुमानित बिड मूल्य / **Estimated Bid Value**	16987803
मूल्यांकन पद्धति/**Evaluation Method**	Total value wise evaluation
मध्यस्थता खंड/**Arbitration Clause**	No
सुलह खंड/**Mediation Clause**	No

ईएमडी विवरण/**EMD Detail**

एडवाईजरी बैंक/Advisory Bank	State Bank of India
ईएमडी राशि/EMD Amount	169878

ईपीबीजी विवरण /ePBG Detail

एडवाइजरी बैंक/Advisory Bank	State Bank of India
ईपीबीजी प्रतिशत (%)/ePBG Percentage(%)	3.00
ईपीबीजी की आवश्यक अवधि (माह) /Duration of ePBG required (Months).	38

(a). जेम की शर्तों के अनुसार ईएमडी छूट के इच्छुक बिडर को संबंधित केटेगरी के लिए बिड के साथ वैध समर्थित दस्तावेज़ प्रस्तुत करने है। एमएसई केटेगरी के अंतर्गत केवल वस्तुओं के लिए विनिर्माता तथा सेवाओं के लिए सेवा प्रदाता ईएमडी से छूट के पात्र हैं। व्यापारियों को इस नीति के दायरे से बाहर रखा गया है।/EMD EXEMPTION: The bidder seeking EMD exemption, must submit the valid supporting document for the relevant category as per GeM GTC with the bid. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy.

(b).ईएमडी और संपादन जमानत राशि, जहां यह लागू होती है, लाभार्थी के पक्ष में होनी चाहिए। / EMD & Performance security should be in favour of Beneficiary, wherever it is applicable.

(c).ईएमडी और संपादन जमानत राशि लाभार्थी के पक्ष में होनी चाहिए। / Earnest Money Deposit (EMD) shall also be accepted by the buyer in the form of a surety bond.

लाभार्थी /Beneficiary :

Finance Controller
M M M University Of Technology, Gorakhpur, Technical Education Department Uttar Pradesh, N/A,
(Vinay Kumar Rai)

बोली विभाजन लागू नहीं किया गया/ Bid splitting not applied.

एमएसई खरीद वरीयता/MSE Purchase Preference

एमएसई खरीद वरीयता/MSE Purchase Preference	No

एमआईआई खरीद वरीयता/MII Purchase Preference

एमआईआई खरीद वरीयता/MII Purchase Preference	No

1. The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated above in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3-year-old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.
2. Experience Criteria: In respect of the filter applied for experience criteria, the Bidder or its OEM of the product offered in the bid {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU for number of Financial years as indicated above in the bid document before the bid opening date. Copies of relevant contracts and delivery

acceptance certificates like CRAC to be submitted along with bid in support of having supplied some quantity during each of the Financial year. In case of bunch bids, the category of primary product having highest value should meet this criterion.
3. OEM Turn Over Criteria: The minimum average annual financial turnover of the OEM of the offered product during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the OEM is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.
4. Estimated Bid Value indicated above is being declared solely for the purpose of guidance on EMD amount and for determining the Eligibility Criteria related to Turn Over, Past Performance and Project / Past Experience etc. This has no relevance or bearing on the price to be quoted by the bidders and is also not going to have any impact on bid participation. Also this is not going to be used as a criteria in determining reasonableness of quoted prices which would be determined by the buyer based on its own assessment of reasonableness and based on competitive prices received in Bid / RA process.
5. Past Performance: The Bidder or its OEM {themselves or through re-seller(s)} should have supplied same or similar Category Products for 80% of bid quantity, in at least one of the last three Financial years before the bid opening date to any Central / State Govt Organization / PSU. Copies of relevant contracts (proving supply of cumulative order quantity in any one financial year) to be submitted along with bid in support of quantity supplied in the relevant Financial year. In case of bunch bids, the category related to primary product having highest bid value should meet this criterion.

6. Reverse Auction would be conducted amongst all the technically qualified bidders except the Highest quoting bidder. The technically qualified Highest Quoting bidder will not be allowed to participate in RA. However, H-1 will also be allowed to participate in RA in following cases:

i. If number of technically qualified bidders are only 2 or 3.
ii. If Buyer has chosen to split the bid amongst N sellers, and H1 bid is coming within N.
iii. In case Primary product of only one OEM is left in contention for participation in RA on elimination of H-1.
iv. If L-1 is non-MSE and H-1 is eligible MSE and H-1 price is coming within price band of 15% of Non-MSE L-1
v. If L-1 is non-MII and H-1 is eligible MII and H-1 price is coming within price band of 20% of Non-MII L-1

Pre Bid Detail(s)

मूल्य भिन्नता खंड दस्तावेज़/Pre-Bid Date and Time	**प्री-बिड स्थान/Pre-Bid Venue**
28-10-2026 16:00:00	Board Room, Atal Bhawan, Madan Mohan Malaviya University of Technology Gorakhpur

Camera For CCTV System (V3) (128 pieces)

Bis Required	Yes

तकनीकी विशिष्टियाँ /Technical Specifications

[* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification]

विवरण/Specification	**विशिष्टि का नाम /Specification Name**	**बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)**
Generic	**PTZ Camera / Speed Dome Camera**	Yes, No
	Type of Camera Housing	Bullet Camera
	IP Camera	Yes, No
	Camera Image Sensing capacity	4MP (2560x1440) or better

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
	Maximum Frame Rates(frames per second) Supported	15/20, 25/30, 50/60 Or higher
	Number of simultaneous video Streams	Dual stream (Full/Compressed), Triple stream(Full/Compressed), Quad Stream(Full/Compressed)
	IR illumination Range(meter)	Not provided, 5-14, 15-30, 31-50, 51-70, 71-100, 101-200, 201-300, 301-400, 401-500, 501-600 Or higher
Construction	**Installation Type/ Area of use**	Indoor, Outdoor, Hazardous Area
Optics/ Performance	**Lens Type**	Varifocal Motorized
	Focal Length for Fixed / Fisheye Lens Type (mm)	NA (being varifocal Lens)
	Focal Length for Varifocal Lens Type (mm)	Max 9 mm or better, Max 12 mm or better, Max 15 mm or better, Max 20 mm or better, Max 30 mm or better, Max 40 mm or better, Max 50 mm or better, Max 75 mm or better, Max 100 mm or better, Max 125 mm or better, Max 150 mm or better, Max 200 mm or better, Max 250 mm or better, Max 300 mm or better
	Optical Zoom	2X - 3X, more than 3X - 5X, more than 5X - 8X, more than 8X - 12X, more than 12X - 16X, more than 16X - 20X, more than 20X - 25X, more than 25X - 30X, more than 30X - 35X, more than 35X - 40X, more than 40X - 45X, more than 45X - 50X Or higher
Network And Interface	**Type of network required to transmit video / Image recorded by camera**	Wireless (Wi-Fi based), Wireless (cellular-(5G) / SIM based but SIM is not inclusive in the scope of supply), Wired
Storage	**On Board SD Card Support**	Yes, No
	SD Card Capacity	128 GB, 256 GB, 512 GB, 1 TB, NA Or higher
Warranty / Service	**Comprehensive Warranty (Year)**	1, 2, 3, 4, 5 Or higher
Certification / Test Report	**Availability of security testing report for CCTV/VSS issued by Standardization Testing and Quality Certification (STQC) Laboratory or any other agency notified by Meity or BIS certificate indicating ER**	Yes (Complying to the requirement of clause 5 of S.O. 1119 (E) on the subject: Public Procurement (Prefence to make in India) Order 2017-Notifying CCTV/Video Surveillance System for Security in furtherance of the order at dated 6th March, 2024 or Latest)
	BIS Registration (CRS) for safety general requirements as per IS 13252 (Part 1):latest indicating ER (for CCTV Camera)	Yes

Additional Specification Parameters - Camera For CCTV System (V3) (128 pieces)

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specification-1	Camera Type:Outdoor IP Bullet Network Camera;Image Sensor:Progressive Scan CMOS, approx. 1/3" to 1/2.8" or better;Resolution:Minimum 4 MP; minimum image resolution approximately 2592 × 1520 pixels or higher;Frame Rate:Minimum 25 fps at 4 MP; 30 fps shall be supported where applicable;Day/Night:True Day/Night with IR Cut Filter / Auto ICR;Minimum Illumination:? 0.005 Lux in colour mode or better; 0 Lux with IR/white-light illumination;WDR:True WDR, minimum 120 dB
Additional Specification-2	Image Enhancement:BLC, HLC, 3D DNR/3D Noise Reduction, AGC, AWB and image sharpening;Lens:Motorized varifocal lens covering approximately 4 mm or higher; lens shall provide a suitable wide-angle view for general surveillance;Lens Mount:M12 or equivalent;IR / Supplementary Illumination:Minimum 50 m IR/white-light illumination range;Smart Illumination:Smart IR / intelligent supplementary-light control;Video Compression:H.265/H.265+ and H.264 or better
Additional Specification-3	Video Streams:Minimum 2 independent video streams; 3/4 streams preferable;ROI:Region of Interest (ROI) support;Video Analytics:Minimum Motion Detection and Perimeter/Tripwire/Intrusion Detection;Intelligent Classification:Human/vehicle target classification or equivalent intelligent motion detection preferred;Audio:Built-in microphone; audio recording shall be supported;Audio Compression:G.711 or equivalent;Local Storage:Built-in Micro-SD/TF card slot, minimum 512 GB support
Additional Specification-4	Network Interface:1 × RJ-45, 10/100 Mbps Ethernet or better; Power Supply:12 VDC and/or PoE;Network Protocols:TCP/IP, IPv4/IPv6, HTTP/HTTPS, DHCP, DNS, NTP, RTSP, RTP/UDP, SMTP and equivalent standard network protocols;ONVIF:ONVIF Profile S, Profile G and/or Profile T; ONVIF interoperability required;Web/Remote Access:Camera configuration and live view through standard web browser/client software;Cyber Security:HTTPS/TLS, user authentication/password protection and IP/network access control
Additional Specification-5	PoE:IEEE 802.3af or higher PoE;Privacy Mask:Minimum 4 programmable privacy-mask areas;Image Adjustment:Brightness, contrast, saturation, sharpness, exposure, day/night and white-balance adjustment;Vandal Protection:IK10 or equivalent, where required for vulnerable locations;Operating Temperature:Minimum range approximately -30°C to +60°C or wider;Operating Humidity:0–95% RH, non-condensing or better;Housing:Outdoor-rated metal/aluminium or metal + engineering-polymer housing

* Bidders offering must also comply with the additional specification parameters mentioned above.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	128	15

Camera For CCTV System (V3) (163 pieces)

Bis Required	Yes

तकनीकी विशिष्टियाँ /Technical Specifications

[* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification]

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Generic	**PTZ Camera / Speed Dome Camera**	Yes, No
	Type of Camera Housing	Dome Camera
	IP Camera	Yes, No
	Camera Image Sensing capacity	4MP (2560x1440) or better
	Maximum Frame Rates(frames per second) Supported	15/20, 25/30, 50/60 Or higher
	Number of simultaneous video Streams	Dual stream (Full/Compressed), Triple stream(Full/Compressed), Quad Stream(Full/Compressed)
	IR illumination Range(meter)	Not provided, 5-14, 15-30, 31-50, 51-70, 71-100, 101-200, 201-300, 301-400, 401-500, 501-600 Or higher
Construction	**Installation Type/ Area of use**	Indoor, Outdoor, Hazardous Area
Optics/ Performance	**Lens Type**	Varifocal Motorized
	Focal Length for Fixed / Fisheye Lens Type (mm)	NA (being varifocal Lens)
	Focal Length for Varifocal Lens Type (mm)	Max 9 mm or better, Max 12 mm or better, Max 15 mm or better, Max 20 mm or better, Max 30 mm or better, Max 40 mm or better, Max 50 mm or better, Max 75 mm or better, Max 100 mm or better, Max 125 mm or better, Max 150 mm or better, Max 200 mm or better, Max 250 mm or better, Max 300 mm or better
	Optical Zoom	2X - 3X, more than 3X - 5X, more than 5X - 8X, more than 8X - 12X, more than 12X - 16X, more than 16X - 20X, more than 20X - 25X, more than 25X - 30X, more than 30X - 35X, more than 35X - 40X, more than 40X - 45X, more than 45X - 50X Or higher
Network And Interface	**Type of network required to transmit video / Image recorded by camera**	Wireless (Wi-Fi based), Wireless (cellular-(5G) / SIM based but SIM is not inclusive in the scope of supply), Wired
Storage	**On Board SD Card Support**	Yes, No
	SD Card Capacity	128 GB, 256 GB, 512 GB, 1 TB, NA Or higher
Warranty / Service	**Comprehensive Warranty (Year)**	1, 2, 3, 4, 5 Or higher

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Certification / Test Report	**Availability of security testing report for CCTV/VSS issued by Standardization Testing and Quality Certification (STQC) Laboratory or any other agency notified by Meity or BIS certificate indicating ER**	Yes (Complying to the requirement of clause 5 of S.O. 1119 (E) on the subject: Public Procurement (Prefence to make in India) Order 2017-Notifying CCTV/Video Surveillance System for Security in furtherance of the order at dated 6th March, 2024 or Latest)
	BIS Registration (CRS) for safety general requirements as per IS 13252 (Part 1):latest indicating ER (for CCTV Camera)	Yes

Additional Specification Parameters - Camera For CCTV System (V3) (163 pieces)

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specification-1	Camera Type:4 MP IP Dome Network Camera, suitable for indoor/outdoor surveillance;Image Sensor:Progressive Scan CMOS, approximately 1/2.8" or better;Resolution:Minimum 4 MP, with image resolution of at least 2592 × 1520 pixels;Frame Rate:Minimum 25 fps at 4 MP; 30 fps shall be supported where applicable;Day/Night:True Day/Night with removable/automatic IR Cut Filter (ICR);Minimum Illumination:?0.005 Lux in colour mode or better; 0 Lux with IR/illumination ON;WDR:True WDR, minimum 120 dB;
Additional Specification-2	Image Enhancement:BLC, HLC, 3D DNR, AWB, AGC and equivalent image-enhancement functions;Lens:Motorized varifocal lens, approximately 2.7–13.5 mm or better;Iris:Auto/DC Iris or equivalent automatic exposure control;Field of View:Approximately 90° or wider horizontal FOV at wide-angle position, depending on lens;IR Illumination:Minimum IR of 40m or better;Smart IR:Smart IR / intelligent illumination control;Video Compression:H.265/H.265+ and H.264, with MJPEG or better;
Additional Specification-3	Video Streams:Minimum 3 simultaneous video streams;ROI:Region of Interest (ROI) support;Video Analytics:Motion detection and intelligent perimeter protection such as line crossing and intrusion detection;AI Classification:Human and vehicle classification or equivalent intelligent target classification;Intelligent Functions:Face detection/capture, people counting, loitering, unattended/missing object detection or equivalent analytics;Audio:Built-in microphone; audio recording/streaming support;
Additional Specification-4	Audio Interface:Audio input/output or equivalent two-way audio capability;Audio Compression:G.711 or equivalent;Local Storage:Built-in Micro-SD/SDHC/SDXC card slot, supporting minimum 512 GB;Network Interface:RJ-45 10/100 Mbps Ethernet or better;PoE:IEEE 802.3af PoE or higher;Additional Power:12 VDC or equivalent local power input;Network Protocols:TCP/IP, IPv4/IPv6, HTTP/HTTPS, RTSP/RTP, DHCP, DNS, NTP, SMTP and equivalent standard protocols;ONVIF:ONVIF Profile S/G/T or higher;

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specification-5	interoperability with third-party NVR/VMS required;Cyber Security:HTTPS/TLS, secure authentication, password protection, IP filtering and encrypted/secure firmware where supported;Privacy Masking:Minimum 4 programmable privacy-mask areas;Image Stabilization:Digital image stabilization or equivalent preferred;Defog:Digital defog or equivalent image enhancement;Alarm I/O:Minimum 1 alarm input and 1 alarm output, where supported by the proposed model;Weather Protection:IP67 or better;

* Bidders offering must also comply with the additional specification parameters mentioned above.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	163	15

Video Recorder For CCTV System (V2) (10 pieces)

Bis Required	Yes

तकनीकी विशिष्टियाँ /Technical Specifications

[* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification]

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Generic	**Type of Recorder**	NVR
Performance	**Total Number of Input Channels**	16
	Maximum Recording Resolution supported	D1 (704 x 480), HD (1280 x 720), Full HD (1920 x 1080), 4K (3840 × 2160), 12 MP (4000 X 3000) Or higher
	Recording Speed for all channels (fps)	Upto 6, Upto 12, Upto 15, Upto 25, Upto 30, Upto 50, Upto 60 Or higher
STORAGE	**Internal Hard Drive Interface**	SCSI, SAS, SATA I, SATA II, SATA III, iSCSI and fiber port, iSCSI
Buyer Specific Requirements	**valid BIS certificate as per IS 13252 under CRS**	Yes (required)
WARRANTY / SERVICES	**Warranty**	1year, 2year, 3year Or higher

Additional Specification Parameters - Video Recorder For CCTV System (V2) (10 pieces)

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specification-1	NVR Type:16-Channel Network Video Recorder (NVR), embedded Linux-based;IP Camera Support:Minimum 16 IP camera channels;Camera Resolution Support:Support IP cameras up to 12 MP or higher;Incoming Bandwidth:Minimum 320 Mbps;Recording Bandwidth:Minimum 320 Mbps;Outgoing Bandwidth:Minimum 320 Mbps;Video Compression:H.265/H.265+, H.264/H.264+;Recording Modes:Continuous, scheduled, manual, motion, alarm and event-based recording;
Additional Specification-2	Recording Resolution:Support 4K/8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 2 MP and lower resolutions;4 MP Recording/Decoding:Minimum 16 channels at 4 MP;4K Support:Support 4K UHD recording and playback;HDMI Output:Minimum 1 × HDMI, supporting up to 3840 × 2160;VGA Output:Minimum 1 × VGA;Display Split:1/4/8/9/16 or equivalent multi-screen display;Synchronous Playback:Minimum 16-channel synchronous playback;Smart Playback:Search/playback by time, event, motion, alarm and intelligent event;
Additional Specification-3	HDD Interface:Minimum 4 × SATA;HDD Expansion:8 SATA bays preferred;HDD Capacity:Support surveillance HDDs of minimum 10 TB per HDD or higher;Maximum Storage:Minimum 40 TB raw storage capacity or higher;RAID:RAID 0/1/5/6/10 support where provided by the proposed model;HDD Management:HDD health monitoring, formatting, storage-status monitoring and disk management;AI Analytics:Support intelligent video analytics from NVR and/or connected cameras;
Additional Specification-4	Human/Vehicle Detection:Human and vehicle classification/filtering;Perimeter Protection:Line crossing, intrusion detection and equivalent VCA;Face Detection:Face detection/recognition support through NVR and/or connected cameras;ANPR:Support ANPR/LPR cameras and event recording;People Counting:Support people-counting cameras/analytics;Camera-side Analytics:Support AI events generated by connected IP cameras;Alarm Inputs:Minimum 8 alarm inputs;Alarm Outputs:Minimum 4 alarm outputs;
Additional Specification-5	Audio Input:Minimum 1-channel audio input;Audio Output:Minimum 1-channel audio output;Two-Way Audio:Two-way audio communication support;Network Interface:Minimum 2 × 10/100/1000 Mbps RJ-45 Ethernet ports;Network Protocols:TCP/IP, IPv4/IPv6, HTTP/HTTPS, DHCP, DNS, NTP, RTSP, SMTP or equivalent;ONVIF:ONVIF Profile S/G/T or equivalent;Third-Party Cameras:Support ONVIF-compliant third-party IP cameras;USB Ports:Minimum 2 USB ports, including USB 3.0;eSATA:Minimum 1 eSATA port preferred;

* Bidders offering must also comply with the additional specification parameters mentioned above.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	10	15

Video Recorder For CCTV System (V2) (2 pieces)

Bis Required	Yes

तकनीकी विशिष्टियाँ /Technical Specifications

[* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification]

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Generic	**Type of Recorder**	NVR
Performance	**Total Number of Input Channels**	32
	Maximum Recording Resolution supported	D1 (704 x 480), HD (1280 x 720), Full HD (1920 x 1080), 4K (3840 × 2160), 12 MP (4000 X 3000) Or higher
	Recording Speed for all channels (fps)	Upto 6, Upto 12, Upto 15, Upto 25, Upto 30, Upto 50, Upto 60 Or higher
STORAGE	**Internal Hard Drive Interface**	SCSI, SAS, SATA I, SATA II, SATA III, iSCSI and fiber port, iSCSI
Buyer Specific Requirements	**valid BIS certificate as per IS 13252 under CRS**	Yes (required)
WARRANTY / SERVICES	**Warranty**	1year, 2year, 3year Or higher

Additional Specification Parameters - Video Recorder For CCTV System (V2) (2 pieces)

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specifiaction-1	Type:IP-based Network Video Recorder (NVR);IP Camera Inputs:Minimum 32 IP channels;Camera Resolution Support:Support 4K / 8 MP IP cameras or higher;Video Compression:H.265 / H.264 or better;Incoming Bandwidth:Minimum 320 Mbps;Recording Bandwidth:Minimum 320 Mbps;Outgoing Bandwidth:Minimum 256 Mbps;Recording Resolution:Support recording of 4K (3840 × 2160) or higher resolution streams;Frame Rate:Up to 30 fps at supported resolutions;HDMI Output:Minimum 1 × HDMI, supporting 4K (3840 × 2160);
Additional Specifiaction-2	VGA Output:Minimum 1 × VGA, Full HD (1920 × 1080) or better;Synchronous Playback:Minimum 16-channel synchronous playback;Display Split:Multi-screen display, supporting at least 1/4/9/16/25/32-channel display;HDD Interface:Minimum 8 × SATA interfaces;HDD Capacity:Support minimum 10 TB per HDD or higher;RAID:RAID 1/5/6 or better;Alarm Inputs:Minimum 16 alarm inputs;Alarm Outputs:Minimum 6 alarm outputs;Network Interface:Minimum 2 × 10/100/1000 Mbps RJ-45 Ethernet ports;

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specifiaction-3	ONVIF:ONVIF Profile S or higher/equivalent;Network Protocols:TCP/IP, IPv4/IPv6, DHCP, DNS, NTP, HTTP/HTTPS, RTSP and equivalent standard protocols;USB:Minimum 3 USB ports, including USB 2.0/USB 3.0;eSATA:Minimum 1 × eSATA or equivalent external storage interface;Serial Interface:RS-232 and RS-485;Audio:Audio input/output and two-way audio;Motion Detection:Supported on IP camera channels;Video Tampering:Supported;Camera Disconnection/Network Failure:Detection and event notification;
Additional Specifiaction-4	Perimeter Protection:Intrusion/tripwire/perimeter protection through NVR and/or compatible IP cameras;Human/Vehicle Classification:Supported through NVR and/or compatible IP cameras;Face Analytics:Face detection/recognition through NVR and/or compatible IP cameras;ANPR:ANPR/license-plate recognition through compatible IP cameras;People Counting:Supported through compatible IP cameras/NVR analytics;Smart Search/Playback:Event-based/smart search and playback;
Additional Specifiaction-5	Remote Access:Remote monitoring/playback through web browser and mobile application;Cybersecurity:User authentication, HTTPS/secure communication and secure network access;Operating System:Embedded Linux or equivalent;Power Supply:100–240 VAC, 50/60 Hz;Operating Temperature:Minimum -10°C to +55°C;Operating Humidity:Minimum 10–90% RH or better;Operation:Suitable for 24×7 continuous surveillance operation;Standards/Compliance:CE,FCC,RoHS

* Bidders offering must also comply with the additional specification parameters mentioned above.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	2	15

Video Recorder For CCTV System (V2) (4 pieces)

Bis Required	Yes

तकनीकी विशिष्टियाँ /Technical Specifications

* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Generic	**Type of Recorder**	NVR
Performance	**Total Number of Input Channels**	64
	Maximum Recording Resolution supported	D1 (704 x 480), HD (1280 x 720), Full HD (1920 x 1080), 4K (3840 × 2160), 12 MP (4000 X 3000) Or higher

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
	Recording Speed for all channels (fps)	Upto 6, Upto 12, Upto 15, Upto 25, Upto 30, Upto 50, Upto 60 Or higher
STORAGE	**Internal Hard Drive Interface**	SCSI, SAS, SATA I, SATA II, SATA III, iSCSI and fiber port, iSCSI
Buyer Specific Requirements	**valid BIS certificate as per IS 13252 under CRS**	Yes (required)
WARRANTY / SERVICES	**Warranty**	1year, 2year, 3year Or higher

Additional Specification Parameters - Video Recorder For CCTV System (V2) (4 pieces)

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specification-1	NVR Type:Professional IP-based Network Video Recorder, suitable for 24×7 continuous surveillance;IP Camera Inputs:Minimum 64 IP camera channels;Camera Resolution Support:Support 4K / 8 MP IP cameras or higher;Video Compression:H.265 / H.264 or better, with support for efficient compression/Smart Codec or equivalent;Incoming Bandwidth:Minimum 320 Mbps;Recording Throughput:Minimum 320 Mbps;Outgoing/Network Bandwidth:Minimum 256 Mbps;
Additional Specification-2	Recording Resolution:Support recording of 3840 × 2160 (4K) or higher resolution streams;Recording Frame Rate:Up to 30 fps at supported resolutions;HDMI Output:Minimum 1 × HDMI, supporting 4K (3840 × 2160) output;Additional Video Output:Minimum 1 additional HDMI and/or VGA output, Full HD or better;Synchronous Playback:Minimum 16-channel synchronous playback;Display Split:Multi-screen display supporting at least 1/4/9/16/32/64-channel display modes or equivalent;
Additional Specification-3	HDD Interface:Minimum 8 × SATA interfaces;HDD Capacity:Support HDDs of minimum 10 TB per disk;Maximum Storage:Minimum 80 TB internal storage capacity with 8 HDDs of 10 TB each;RAID:RAID 1/5/6 or better;Alarm Inputs:Minimum 16 alarm inputs;Alarm Outputs:Minimum 6 alarm outputs;Network Interface:Minimum 2 × 10/100/1000 Mbps RJ-45 Ethernet ports;Network Protocols:TCP/IP, IPv4/IPv6, DHCP, DNS, NTP, HTTP/HTTPS, RTSP and equivalent standard protocols;ONVIF:ONVIF Profile S/G or higher/equivalent;
Additional Specification-4	USB:Minimum 3 USB ports, including at least 1 × USB 3.0;eSATA:Minimum 1 × eSATA interface or equivalent external storage interface;Serial Interfaces:RS-232 and RS-485;Audio:Audio input and output with two-way audio communication;Motion Detection:Supported;Video Tampering Detection:Supported;Camera Disconnection:Detection and event notification for camera/network disconnection;Intrusion/Perimeter Protection:Intrusion detection and perimeter protection through NVR and/or compatible IP cameras;

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specification-5	Human/Vehicle Detection:Human and vehicle classification/detection through NVR and/or compatible IP cameras;Face Analytics:Face detection/recognition through NVR and/or compatible IP cameras;People Counting:People counting through NVR and/or compatible IP cameras;ANPR:ANPR/license plate recognition through compatible IP cameras;Smart Analytics:Support intelligent video analytics such as intrusion, line crossing, motion, tampering and other camera-based analytics;

* Bidders offering must also comply with the additional specification parameters mentioned above.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	4	15

Television (V3) (6 pieces)

Bis Required	Yes

तकनीकी विशिष्टियाँ /Technical Specifications

* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Product Characteristics	**Duty Cycle of Product (Number of operation hours per day X number of days in week)**	8 x 7, 16 x 7
	Native Resolution of Display (Pixels)	HD (1280 X 720), Full HD (1920 x 1080), Ultra HD (3840 x 2160)
	BEE Star Rating of the product	1 Star, 2 Star, 3 Star, 4 Star, 5 Star Or higher
Display Characteristics	**Diagonal Display Size (in inches)**	Between 60 and 70 (152.4 and 177.8 cm)
	Display Technology	LCD (Liquid Crystal Display), LED (Light Emitting Diode)
	Type of Backlight in LCD / Type of LED in Display Technology	Edge-lit LED, Direct-lit LED, Full-array LED, OLED (Organic LED)
	Peak display brightness in product (in nits)	Between 200 and 300, Between 300 and 400, Between 400 and 500, Between 500 and 600, Between 600 and 700, Between 700 and 800, Between 800 and 900, Between 900 and 1000

Additional Specification Parameters - Television (V3) (6 pieces)

Specification Parameter Name	Bid Requirement (Allowed Values)
Additional Specfication-1	Display Size:65 inches (minimum);Display Type:Commercial/Professional LED-backlit LCD display;Resolution:3840 × 2160 pixels (4K UHD);Aspect Ratio:0.672916666666667;Refresh Rate:60 Hz or higher;Brightness:Minimum 350 nits;Contrast Ratio:Minimum 1000:1;Viewing Angle:Minimum 178° horizontal and 178° vertical;Response Time:8 ms or better;HDR:HDR10 / HLG or equivalent;Backlight:LED;Operating Capability:Minimum 16 hours/day, 7 days/week; 24×7 operation preferred;
Additional Specfication-2	HDMI Inputs:Minimum 3 × HDMI inputs, supporting 4K UHD input;USB:Minimum 2 × USB ports;Network:Minimum 1 × RJ45 Ethernet/LAN port;Serial Control:RS-232C or equivalent control interface;Audio Output:Audio output interface;Built-in Speakers:Minimum 20 W total output;Wireless Connectivity:Integrated Wi-Fi;Bluetooth:Integrated Bluetooth or equivalent wireless audio/peripheral connectivity;Content Protection:HDCP 2.2 or higher;
Additional Specfication-3	Smart/Commercial Platform:Integrated Smart/Commercial operating platform supporting display management and media playback;Media Playback:Built-in support for common video, audio and image formats through USB/network;Web Browser:Built-in web browser or equivalent web-content capability;Screen Mirroring:Wireless screen mirroring/casting from compatible computers and mobile devices;Network Management:Support for remote monitoring/control and network-based display management;
Additional Specfication-4	Scheduling:On/off scheduling and content/input scheduling facility;Digital Signage:Support for digital signage/content management applications or equivalent;Installation Orientation:Landscape installation; portrait operation should be supported where required;Mounting:VESA-compatible wall mounting; minimum 300 × 300 mm or manufacturer-equivalent mounting provision;Power Supply:AC 100–240 V, 50/60 Hz;Power Saving:Automatic power-saving/sleep mode;
Additional Specfication-5	Security:Kensington lock or equivalent physical security provision, where supported by the design;Compliance:BIS/ISI as applicable in India and other applicable statutory safety/electromagnetic compliance;Warranty:Minimum 3 years comprehensive onsite warranty from the date of installation/commissioning;Application:Suitable for continuous institutional/university use in classrooms, seminar halls, meeting rooms, conference rooms, administrative offices and common areas

* Bidders offering must also comply with the additional specification parameters mentioned above.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	6	15

Ethernet Cables (12500 meter)

तकनीकी विशिष्टियाँ /Technical Specifications

[* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification]

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Generic	**Description of Store**	4 Pair Twisted Copper Cable Confirming to ISO/IEC 11801-1:2017 or latest
	Cable Category	CAT 6
	Type of cable	Unshielded Twisted Pair cable (UTP), Foiled Unshielded Twisted Pair cable (F/UTP), Shielded Foiled Twisted Pair cable (S/FTP), Unshielded Foiled Twisted Pair cable (U/FTP), Shielded Foiled Unshielded Twisted Pair cable (SF/UTP), Foiled with Foiled Twisted Pair cable (F/FTP)
CONDUCTOR	**Conductor Diameter with +/-0.01mm Tolerance**	0.51 mm, 0.57 mm
Jacket Material	**Outer Cable Diameter in mm**	5.1-6, 6.1-7, 7.1-8, 8.1-9, 9.1-10, 10.1-11
	Sheath/ Jacket Material for Indoor Cable	Fire Redartant Polyvinyl chloride (FRPVC), Low Smoke Zero Halogen (LSZH), Polyethylene, N/A for Outdoor
	Inner sheath/ Jacket Material for Outdoor Cable	Fire Redartant Polyvinyl chloride (FRPVC), Low Smoke Zero Halogen (LSZH), Polyethylene, N/A for Outdoor
	Outer sheath/ Jacket Material for Outdoor Cable	Fire Redartant Polyvinyl chloride (FRPVC), Low Smoke Zero Halogen (LSZH), Polyethylene, NA for Indoor
	Armouring Material	No Armouring, Aluminium Wire, Galvanised Steel Wire (GI)
PERFORMANCE	**Maximum Data Rate (in Gbps)**	1, 10, 40

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	12500	15

Optical Fibre Cable For Networking (6000 meter)

तकनीकी विशिष्टियाँ /Technical Specifications

[* जेम केटेगरी विशिष्टि के अनुसार / As per GeM Category Specification]

विवरण/Specification	विशिष्टि का नाम /Specification Name	बिड के लिए आवश्यक अनुमत मूल्य /Bid Requirement (Allowed Values)
Generic	**Number of Fibres (Core Count)**	6
	Outer Jacket Material	HDPE, LSZH, High Density Polyethylene (UV)
Construction	**Armouring Type**	Armoured with ECCS tape, Unarmoured

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	Rohit Kumar Tiwari	273010,M M M University of Technology, Deoria Road, Gorakhpur	6000	15

Buyer added Bid Specific Additional Scope of Work

क्र.सं./S.No.	Document Title	Description	रिवर्स प्रभार के अनुसार जीएसटी/Applicable i.r.o. Items
1	Scope of Work View	Detailed Document for Additional Scope of Work	Camera For CCTV System (V3) (128),Camera For CCTV System (V3)(163),Video Recorder For CCTV System (V2)(10),Video Recorder For CCTV System (V2) (2),Video Recorder For CCTV System (V2)(4),Television (V3) (6),Optical Fibre Cable For Networking(6000)

The uploaded document only contains Buyer specific Additional Scope of Work and / or Drawings for the bid items added with due approval of Buyer's competent authority. Buyer has certified that these additional scope and drawings are generalized and would not lead to any restrictive bidding.

Special terms and conditions-Version:2 effective from 18-02-2025 for category Camera for CCTV System (V3)

1. 1. **Note to Buyers:**
    a. The Central Ministries/ Departments and other government buyers as applicable shall take cognizance of "Public Procurement (Preference to Make in India) Order 2017-Notifying CCTV/ Video Surveillance dated 6th March 2024, System for Security in furtherance of the Order" 5 " while procuring The surveillance devices i.e., CCTV Cameras (Analog/ IP/ Analog Speed Dome/ IP Speed Dome) should comply with the Essential Requirements (ERs) for security prescribed by MeitY to ensure the security of the VSS / CCTV systems, as per the Appendix 'A', as amended from time to time. The security testing report for CCTV/VSS is to be issued by the Standardisation Testing and Quality Certification (STQC) Laboratory or any other

agency notified by MeitY from time to time. The validity of the test report issued by STQC Lab will be three years from the date of issue of the report. These Essential Requirements (ERs) for security of CCTV Cameras/VSS system will be enforced after 3 months from the date of issuance of this Notification. The security norms for the DVR and NVR will be notified subsequently." Accordingly, compliance regarding security testing report for CCTV/VSS issued by Standardization Testing and Quality Certification (STQC) Laboratory or any other agency notified by Meity shall be ensured before accepting/releasing CRAC of the supplied stores. **Please note that the certified product list meeting Essential Requirements (ERs) is available at-https://www.stqc.gov.in/iot-system-certification-scheme-iotscs-0**

b. Buyers are also expected to strictly ensure compliance with the MHA advisory issued by O.M. IV-24011/22/2020-Prov-I/270 dated 26 April 2024. Where in inter alia following is stipulated.
   i. All Government agencies are advised that henceforth they may procure their CCTVs and allied solutions and hardware based on the Public Procurement Order 2017 and ensure the security of CCTV systems as mentioned in the above-mentioned notifications.
   ii. Further, MeitY has issued an Advisory vide O.M. dated W-43/11/2021-IPHW dated 11 March 2024 on the Threat of Information through CCTV/Video Surveillance System (VSS)/Digital Video Recorders/Network Video Recorders. All Government agencies are advised to adhere to the guidelines outlined within the ambit of the Public Procurement Orders to safeguard the overall security and integrity of CCTV Cameras.
   iii. Additionally, further notification from relevant government department or ministry pertaining to the aforementioned PPO is to be complied with.

c. Buyer is expected to apply all relevant filters against "Golden/Filterable" parameters to clearly define their technical requirements.
   i. **For Procurement through BID/RA: -**One and only one value to be specified by the buyer against "Golden" parameters. Selecting "Any value" against GOLDEN parameters may result in incomplete specification in the bid and finally result in a vague contract. Accordingly any bid not having specific value against the GOLDEN parameters resulting in limited competition or higher cost to the exchequer or incomplete/ vague contract, the Buyer shall be solely responsible.
   ii. **For Procurement through DIRECT/L1:**Buyers are advised to apply filters/ selections allowing all the values that are considered meeting or are better than their technical requirements. For any violation of the above, if resulting in limited competition or higher cost to the exchequer, the Buyer shall be solely responsible.

d. Buyer intending to buy Camera for CCTV System (V2) with optional accessories, and optional features shall use BID/RA. These optional kind of parameters are multi-select for the seller, the buyer shall stipulate/select only required accessories in their bid/RA. The required accessories as per bid/RA shall only be verified before accepting the stores. This is to ensure strict compliance of supplied stores to the bid requirement including ATC if any. However, the contract generated may have mentioned accessories other than the bid/RA requirement due to the fact that the contract gets generated based on the catalog uploaded by the OEM/seller. This type of optional parameter is to enable the seller without creating multiple catalogs for given base models having capabilities to be upgraded.

e. Direct/L1 procurement with a selection of optional accessories will not be covered in supply through their names/ offer may be appearing in the contract but seller/supplier do not supply the same being optional and the buyer has not exercised their right to choose by specifying the same in bid/RA.

f. Buyer shall also refer to GTC Clause 4. xiii.(w). The ATC / additional specification if any added by the buyer shall not be contradictory to the GeM category specifications / technical particulars (TP).

g. Buyer/ consignee shall verify all the parameters/ specification including the specification which are to be as per the OEM brochure before issuing CRAC.

h. The consignee is also required to verify the mandatory (CRS) BIS registration of the supplied stores to the IS 13252 Part 1 (2010) before accepting/ CRAC.

2. **Note to Sellers: -**
   a. Seller may refer to GTC and ensure strict compliance of the uploaded/offered product which shall be in line with their model having the claimed specifications or better.
   b. In case the seller's declared values are contradictory to the specifications provided elsewhere in the TP; the specification claimed in the TP shall supersede the seller's declared values.
   c. Also, the same model shall not be uploaded across catalogs with unreasonable/ contradictory offerings.
   d. In case any discrepancy is observed in the offered/ uploaded products, the OEM dashboard of the respective Brand may be removed, and the account shall be suspended as per IM policy.

Special terms and conditions-Version:1 effective from 09-09-2024 for category Video Recorder for CCTV System (V2)

1. **Note to Buyers:**

   The Central Ministries/ Departments and other government buyers, as applicable, shall note that this category is covered under Scheme - II (Compulsory Registration Scheme) of BIS (Bureau of Indian Standards).

   Compulsory registration of goods / articles in this category shall conform to IS 13252 (Part - 1) and shall bear the “Standard Mark” under a license from Bureau of Indian Standards as per Scheme-II of Schedule-II of Bureau of Indian Standards(Conformity Assessment) Regulations,2018.

   Buyer shall verify and confirm compliance with the applicable BIS order during the procurement and fulfilment process.

   Note to Sellers:

   Sellers shall offer and supply products conforming to the corresponding Indian Standard and mandatorily registration as per Scheme-2 of BIS.

   Non-compliance shall result in action as per GeM IM policy.

   Buyers and sellers may refer to the relevant S.O at https://www.bis.gov.in/product-certification/products-under-compulsory-certification/scheme-ii-registration-scheme/

क्रेता द्वारा जोड़ी गई बिड की विशेष शर्तें/Buyer Added Bid Specific Terms and Conditions

1. **Generic**

   OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity up to 25% of the contracted quantity during the currency of the contract at the contracted rates. The delivery period of quantity shall commence from the last date of original delivery order and in cases where option clause is exercised during the extended delivery period the additional time shall commence from the last date of extended delivery period. The additional delivery time shall be (Increased quantity ÷ Original quantity) × Original delivery period (in days), subject to minimum of 30 days. If the original delivery period is less than 30 days, the additional time equals the original delivery period. The Purchaser may extend this calculated delivery duration up to the original delivery period while exercising the option clause. Bidders must comply with these terms.

2. **Generic**

   Bidder financial standing: The bidder should not be under liquidation, court receivership or similar proceedings, should not be bankrupt. Bidder to upload undertaking to this effect with bid.

3. **Generic**

   Data Sheet of the product(s) offered in the bid, are to be uploaded along with the bid documents. Buyers can match and verify the Data Sheet with the product specifications offered. In case of any unexplained mismatch of technical parameters, the bid is liable for rejection.

4. **Generic**

   Manufacturer Authorization: Wherever Authorised Distributors/service providers are submitting the bid, Authorisation Form /Certificate with OEM/Original Service Provider details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid

5. **Scope of Supply**

   Scope of supply (Bid price to include all cost components) : Supply Installation Testing and

Commissioning of Goods

6. **Turnover**

   Bidder Turn Over Criteria: The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.

7. **Turnover**

   OEM Turn Over Criteria: The minimum average annual financial turnover of the OEM of the offered product during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the OEM is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria. In case of bunch bids, the OEM of CATEGORY RELATED TO primary product having highest bid value should meet this criterion.

8. **Service & Support**

   Availability of Service Centres: Bidder/OEM must have a Functional Service Centre in the State of each Consignee's Location 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 bidder / 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.

9. **Service & Support**

   Dedicated /toll Free Telephone No. for Service Support : BIDDER/OEM must have Dedicated/toll Free Telephone No. for Service Support.

10. **Service & Support**

    Escalation Matrix For Service Support : Bidder/OEM must provide Escalation Matrix of Telephone Numbers for Service Support.

11. **Certificates**

    Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.

12. **Warranty**

    Warranty period of the supplied products shall be 3 years from the date of final acceptance of goods or after completion of installation, commissioning & testing of goods (if included in the scope of supply), at consignee location. OEM Warranty certificates must be submitted by Successful Bidder at the time of delivery of Goods. The seller should guarantee the rectification of goods in case of any break down during the guarantee period. Seller should have well established Installation, Commissioning, Training, Troubleshooting and Maintenance Service group in INDIA for attending the after sales service. Details of Service Centres near consignee destinations are to be uploaded along with the bid.

13. **Forms of EMD and PBG**

    Successful Bidder can submit the Performance Security in the form of Account Payee Demand Draft also (besides PBG which is allowed as per GeM GTC). DD should be made in favour of

    Finance Controller, MMMUT Gorakhpur
    payable at

Gorakhpur
. After award of contract, Successful Bidder can upload scanned copy of the DD in place of PBG and has to ensure delivery of hard copy to the original DD to the Buyer within 15 days of award of contract.

14. **Forms of EMD and PBG**

Bidders can also submit the EMD with Account Payee Demand Draft in favour of

Finance Controller, MMMUT Gorakhpur
payable at
Gorakhpur
.
Bidder has to upload scanned copy / proof of the DD along with bid and has to ensure delivery of hardcopy to the Buyer within 5 days of Bid End date / Bid Opening date.

15. **Generic**

Bidders shall quote only those products (Part of Service delivery) in the bid which are not obsolete in the market and has at least 1 years residual market life i.e. the offered product shall not be declared end-of-life by the OEM before this period.

16. **Generic**

OPTIONAL SITE VISIT:

1. The Bidder is advised to visit and examine the installation site and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid. The costs of visiting the site shall be borne by the Bidder.

Yes

2. The Bidder representative shall be allowed entry upon consignee premises for such visits, only upon the express conditions that the Bidder will release and indemnify the Buyer and Consignee against all liabilities arising out of such visit including death or injury, loss or damage to property, and any other loss, damage, costs, and expenses incurred as a result of such visit.

3. The Bidder shall not be entitled to hold any claim against Buyer for noncompliance due to lack of any kind of pre-requisite information as it is the sole responsibility of the Bidder to obtain all the necessary information with regard to site, surrounding, working conditions, weather etc. on its own before submission of the bid.

17. **Warranty**

Timely Servicing / rectification of defects during warranty period: After having been notified of the defects / service requirement during warranty period, Seller has to complete the required Service / Rectification within 3 days time limit. If the Seller fails to complete service / rectification with defined time limit, a penalty of 0.5% of Unit Price of the product shall be charged as penalty for each week of delay from the seller. Seller can deposit the penalty with the Buyer directly else the Buyer shall have a right to recover all such penalty amount from the Performance Security (PBG).Cumulative Penalty cannot exceed more than 10% of the total contract value after which the Buyer shall have the right to get the service / rectification done from alternate sources at the risk and cost of the Seller besides forfeiture of PBG. Seller shall be liable to re-imberse the cost of such service / rectification to the Buyer.

18. **Buyer Added Bid Specific ATC**

Buyer uploaded ATC document Click here to view the file.

अस्वीकरण/Disclaimer

The Additional Terms and Conditions (ATC) have been incorporated by the Buyer after approval of their Competent Authority. The Buyer ,is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any restriction arising in the bidding process due to these ATCs and including the modification of technical specifications and / or terms and conditions governing the bid.All

representations / grievances pertaining to the ATC clauses shall be raised with the buyer organization directly and not with GeM.If any of the clause(s) is/are incorporated by the Buyer regarding the following, the bid & resultant contract shall be treated as null & void. Further, GeM reserves the right, at its sole discretion, to cancel the bid forthwith, without issuance of any prior notice or intimation :-

1. Publishing Custom / BOQ bids for items for which regular GeM categories are available (unless such Custom / BOQ item is bunched with the major regular product Category Item).
2. Mandating procurement of / from specific Brand / Make / Model / Manufacturer / Dealer except in case of Single Bid / Proprietary Article Certificate (PAC) Buying.
3. Inclusion of disqualification criteria related to suspension of seller / service provider, where such suspension period has already expired.
4. Mandating submission of documents (other than EMD and signed Integrity Pact - which can be submitted within 5 days of bid opening) in physical form as a pre-requisite to qualify bidders.
5. Publishing bids on GeM for procurement of works.
6. Procurement of Goods by creating a Service bid on GeM & vice-versa.
7. Seeking sample with bid or approval of samples during bid evaluation process. However, trial / sample, as the case may be, shall be permitted in cases where trial / sample are allowed as per approved and published procurement policy of the Buyers' controlling Ministry / Department / State / Public Sector Enterprises Headquarters. If there is any violation of trial / sample clause with regard to approved policy of the Buyers' Ministry / Department / State / Public Sector Enterprises Headquarters, then this is to be determined and redressed by the concerned Buyer Organisation only.
8. Seeking experience from specific organization / department / institute only or from foreign / export experience.
9. Creating bid for items from incorrect categories.
10. Reference of conditions published on any external site or reference to external documents/clauses.
11. Asking for any Tender fee / Bid Participation fee, as the case may be.
12. Buyer added ATC Clauses which are in contravention of clauses defined in bid detail section, including specifications, EMD Detail, ePBG Detail and MII and MSE Purchase Preference sections of the bid, unless otherwise allowed by the applicable GeM GTC.
13. Any ATC clause in contravention with GeM GTC Clause 4 (xiii) (h) will be invalid. In case of multiple L1 bidders against a service bid, the buyer shall place the Contract by selection of a bidder amongst the L-1 bidders through a Random Algorithm executed by GeM system.
14. In a category based bid, adding additional items, through buyer added, additional scope of work/ additional terms and conditions/or any other document. If buyer needs more items along with the main item, the same must be added through bunching category based items or by bunching custom catalogues or bunching a BoQ with the main category based item, the same must not be done through ATC or Scope of Work.

Further, if any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

All GeM Sellers/Service Providers shall ensure full compliance with all applicable labour laws, including the provisions, rules, schemes and guidelines under the four Labour Codes i.e. the Code on Wages, 2019; the Industrial Relations Code, 2020; the Occupational Safety, Health and Working Conditions Code, 2020; and the Code on Social Security, 2020 as and when notified and brought into force by the Government of India.

For all provisions of the Labour Codes that are pending operationalisation through rules, schemes or notifications, the corresponding provisions of the pre-existing labour enactments (such as The Minimum Wages Act, 1948, The Payment of Wages Act, 1936, The Payment of Bonus Act, 1965, The Equal Remuneration Act, 1976, The Payment of Gratuity Act, 1972, etc. and relevant State Rules) shall continue to remain applicable.

The Seller/ Service Providers shall, therefore, be responsible for ensuring compliance under:

- **All notified and enforceable provisions of the new Labour Codes as mentioned hereinabove; and**
- **All operative provisions of the erstwhile Labour Laws until their complete substitution.**

All obligations relating to wages, social security, safety, working conditions, industrial relations etc. and any other statutory requirements shall be strictly met by the Seller/ Service Provider. Any non-compliance shall constitute a breach of the contract and shall entitle the Buyer to take appropriate action in accordance with the contract and applicable law.

This Bid is governed by the General Terms and Conditions, conditions stipulated in Bid and Service Level Agreement specific to the Service, as the case may be, as provided in the Marketplace.

However, in case of Service, if any condition specified in General Terms and Conditions is contradicted by the conditions stipulated in Service Level Agreement specific to said Service, then it will over-ride the conditions in the General Terms and Conditions.

यह बिड सामान्य शर्तों के अंतर्गत भी शासित है /This Bid is also governed by the General Terms and Conditions

जेम की सामान्य शर्तों के खंड 26 के संदर्भ में भारत के साथ भूमि सीमा साझा करने वाले देश के बिडर से खरीद पर प्रतिबंध के संबंध में भारत के साथ भूमि सीमा साझा करने वाले देश का कोई भी बिडर इस निविदा में बिड देने के लिए तभी पात्र होगा जब वह बिड देने वाला सक्षम प्राधिकारी के पास पंजीकृत हो।बिड में भाग लेते समय बिडर को इसका अनुपालन करना होगा और कोई भी गलत घोषणा किए जाने व इसका अनुपालन न करने पर अनुबंध को तत्काल समाप्त करने और कानून के अनुसार आगे की कानूनी कार्रवाई का आधार होगा।/In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

---धन्यवाद/Thank You---

MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY

GORAKHPUR – 273010, UTTAR PRADESH

IT RESOURCE CENTRE

TENDER DOCUMENT

ESTABLISHMENT OF CCTV SURVEILLANCE SYSTEM

Supply, Installation, Testing, Commissioning and Configuration

1. SCOPE OF WORK

The scope includes design, supply, installation, testing, commissioning and maintenance of an IP-based CCTV Surveillance System for 24×7 monitoring, recording and security of the campus/building.

- Site survey and preparation of implementation plan.
- Supply of CCTV cameras, NVR systems, display units, network equipment, UPS and passive infrastructure.
- Supply and laying of optical fiber, UTP, power cables and conduits/pipes.
- Installation of camera poles, outdoor IP66 boxes/racks and information outlets.
- Installation, configuration and commissioning of all CCTV and network equipment.
- Testing of camera views, recording, playback, storage and network connectivity.
- System documentation, configuration backup and handover.
- Training/operational orientation to designated University personnel, wherever required.
- Outdoor Camera should be installed in such a manner it should be protected from monkeys.

2. SCHEDULE OF REQUIREMENTS / BOQ

Sr. No.	Item Description	Qty	Unit
1	Project Series 4 MP Dome Camera	163	Nos.
2	Project Series 4 MP Bullet Camera	128	Nos.
6	16 Channel NVR, 4 SATA Port, preloaded with 4×10 TB HDD	10	Nos.
3	32 Channel NVR, 4 SATA Port, preloaded with 4×10 TB HDD	2	Nos.
4	64 Channel NVR, 8 SATA Port, preloaded with 8×10 TB HDD	4	Nos.
5	65 Inch Commercial LED TV	6	Nos.
8	24 Port 1G Fiber Switch with 16 nos. 1G LX transceivers	1	Nos.
9	24 Port PoE Switch 370W with 2 SFP Ports and 1 nos. 1G LX transceiver	4	Nos.
10	8 Port PoE Switch 120W with 2 SFP Ports and 1 nos. 1G LX transceiver	61	Nos.
12	1 KVA UPS with 30 min. backup	60	Nos.
13	Iron Pole 7 Mtr with Support Arm for Camera	25	Nos.
14	Outdoor IP66 Rack	36	Nos.

15	6 Core Single Mode Fiber	6000	Mtr.
16	HDPE Pipe 32mm	5000	Mtr.
17	PVC Pipe 25mm	5000	Mtr.
18	UTP CAT6 Cable	12500	Mtr.
19	Armoured Outdoor UTP Cable	2200	Mtr.
20	LIU of Fiber Termination Box	36	Nos.
21	24 Port Jack Panel	25	Nos.
22	Information Outlet for Camera	291	Nos.
23	3 Core 1.5 MM Power Cable	3000	Meter
24	Iron Pole 7 Mtr with Support Arm for Camera – Jobwork	25	Nos.
25	Laying of 6 Core Single Mode Outdoor Fiber	6000	Mtr.
26	Laying of HDPE Pipe and Digging of Soft Soil	4000	Mtr.
27	Laying of HDPE Pipe and Digging of Hard Soil	1000	Mtr.
28	Laying of PVC Pipe	5000	Mtr.
29	Fixing of Outdoor IP66 Box	36	Nos.
30	Laying of UTP CAT6 Outdoor Cable	2200	Mtr.
31	Laying of UTP CAT6 Cable	12500	Mtr.
32	Installation of Information Outlet for Camera	291	Nos.
33	Laying of Power Cable	3000	Mtr.
34	Camera Installation	291	No.
35	Documentation & Configuration of CCTV	1	Job

3. TECHNICAL REQUIREMENTS

- The offered equipment shall be new, unused and suitable for continuous surveillance operation.
- All equipment shall be compatible with the proposed IP-based CCTV architecture.
- Bidder shall provide OEM datasheets/brochures for offered equipment wherever applicable.
- Installation shall include all accessories, connectors, mounting hardware and consumables necessary for complete operation.
- Fiber and copper cabling shall be properly routed, terminated, labelled and tested.
- NVRs shall be configured for recording, playback, user management and system health monitoring.
- The complete system shall be tested end-to-end before handover.

4. INSTALLATION, TESTING & COMMISSIONING

The successful bidder shall execute installation and commissioning in coordination with the University. All installed devices shall be configured, tested and demonstrated. Any defect noticed during testing shall be rectified by the bidder at no additional cost.

Details And Specifications of The Premise

CCTV Surveillance System			
Sr No.	**Item Description**	**Qty**	**Unit**
	CCTV System		
1	4 MP IP Dome Network Camera	163	Nos.
2	4 MP Outdoor IP Bullet Network Bullet Camera	128	Nos.
6	16 Channel Network Video Recording Software (NVR) system 4 SATA Port and Preloaded with 4x10 TB HDD	10	Nos.
3	32 Channel Network Video Recording Software (NVR) system 4 SATA Port and Preloaded with 4x10 TB HDD	2	Nos.
4	64 Channel Network Video Recording Software (NVR) system 8 SATA Port and Preloaded with 8x10 TB HDD	4	Nos.
5	65 Inch Commercial LED TV	6	Nos.
	Network Item		
8	24 Port 1G Fiber Switch preloaded with 16 nos. 1G LX transceiver	1	Nos.
9	24 Port PoE Switch 370w with 2 SFP Ports, preloaded with 1 nos. 1G LX transceiver	4	Nos.
10	8 Port PoE Switch 120w with 2 SFP Ports, preloaded with 1 nos. 1G LX transceiver	61	Nos.
	Passive Item		
12	1KVA UPS with 30 min.backup	60	Nos.
13	Iron Pole 7 Mtr With Support Arm For Camera	25	Nos.
14	Outdoor IP66 Rack	36	Nos.
15	6 Core Single Mode Fiber	6000	Mtr.
16	HDPC Pipe 32mm	5000	Mtr.
17	PVC Pipe 25mm	5000	Mtr.
18	UTP CAT6 Cable	12500	Mtr.
19	Armoured Outdoor UTP Cable	2200	Mtr.
20	LIU of Fiber termination Box	36	Nos.
21	24 Port Jack Panel	25	Nos.
22	Information outlet for Camera	291	Nos.
23	3 Core 1.5 MM Power Cable	3000	Meter
	Jobwork		
24	Iron Pole 7 Mtr With Support Arm For Camera	25	Nos.
25	Laying of 6 Core Single Mode outdoor fiber	6000	Mtr.
26	Laying of HDPE pipe and Digging of Soft Soil	4000	Mtr.
27	Laying of HDPE pipe and Digging of Hard Soil	1000	Mtr.
28	Laying of PVC pipe	5000	Mtr.
29	Fixing Of Outdoor IP 66 Box	36	Nos.
30	Laying Of UTP CAT6 outdoor cable	2200	Mtr.
31	Laying Of UTP CAT6 cable	12500	Mtr.
32	Installation Of Information outlet for Camera	291	Nos.

33	Laying Of Power Cable	3000	Mtr.
34	Camera Installation	291	No.
35	Documntation & Configuration of CCTV	1	Job

1. 4MP Outdoor IP Bullet Network Camera

S.N.	Description	Specifications	Compliance Yes/No
	Make		
	Model		
1.	Camera Type	Outdoor IP Bullet Network Camera	
2.	Image Sensor	Progressive Scan CMOS, approx. 1/3" to 1/2.8" or better	
3.	Resolution	Minimum 4 MP; minimum image resolution approximately 2592 × 1520 pixels or higher	
4.	Frame Rate	Minimum 25 fps at 4 MP; 30 fps shall be supported where applicable	
5.	Day/Night	True Day/Night with IR Cut Filter / Auto ICR	
6.	Minimum Illumination	≤ 0.005 Lux in colour mode or better; 0 Lux with IR/white-light illumination	
7.	WDR	True WDR, minimum 120 dB	
8.	Image Enhancement	BLC, HLC, 3D DNR/3D Noise Reduction, AGC, AWB and image sharpening	
9.	Lens	Motorized varifocal lens covering approximately 4 mm or higher; lens shall provide a suitable wide-angle view for general surveillance	
10.	Lens Mount	M12 or equivalent	
11.	IR / Supplementary Illumination	Minimum 50 m IR/white-light illumination range	
12.	Smart Illumination	Smart IR / intelligent supplementary-light control	
13.	Video Compression	H.265/H.265+ and H.264 or better	
14.	Video Streams	Minimum 2 independent video streams; 3/4 streams preferable	
15.	ROI	Region of Interest (ROI) support	
16.	Video Analytics	Minimum Motion Detection and Perimeter/Tripwire/Intrusion Detection	
17.	Intelligent Classification	Human/vehicle target classification or equivalent intelligent motion detection preferred	
18.	Audio	Built-in microphone; audio recording shall be supported	
19.	Audio Compression	G.711 or equivalent	
20.	Local Storage	Built-in Micro-SD/TF card slot, minimum 512 GB support	
21.	Network Interface	1 × RJ-45, 10/100 Mbps Ethernet or better	
22.	PoE	IEEE 802.3af or higher PoE	
23.	Power Supply	12 VDC and/or PoE	

24.	Network Protocols	TCP/IP, IPv4/IPv6, HTTP/HTTPS, DHCP, DNS, NTP, RTSP, RTP/UDP, SMTP and equivalent standard network protocols	
25.	ONVIF	ONVIF Profile S, Profile G and/or Profile T; ONVIF interoperability required	
26.	Web/Remote Access	Camera configuration and live view through standard web browser/client software	
27.	Cyber Security	HTTPS/TLS, user authentication/password protection and IP/network access control	
28.	Privacy Mask	Minimum 4 programmable privacy-mask areas	
29.	Image Adjustment	Brightness, contrast, saturation, sharpness, exposure, day/night and white-balance adjustment	
30.	Weather Protection	IP67 or better	
31.	Vandal Protection	IK10 or equivalent, where required for vulnerable locations	
32.	Operating Temperature	Minimum range approximately -30°C to +60°C or wider	
33.	Operating Humidity	0–95% RH, non-condensing or better	
34.	Housing	Outdoor-rated metal/aluminium or metal + engineering-polymer housing	
35.	Mounting	Suitable wall/pole/ceiling mounting bracket with adjustable pan/tilt/rotation	
36.	Certifications	BIS,CE,FCC and RoHS	
37.	Application	Suitable for continuous 24×7 indoor/outdoor surveillance	

2. 4MP Outdoor IP Dome Network Camera

S.N.	Description	Specifications	Compliance Yes/No
	Make		
	Model		
1.	Camera Type	4 MP IP Dome Network Camera, suitable for indoor/outdoor surveillance	
2.	Image Sensor	Progressive Scan CMOS, approximately 1/2.8" or better	
3.	Resolution	Minimum 4 MP, with image resolution of at least 2592 × 1520 pixels	
4.	Frame Rate	Minimum 25 fps at 4 MP; 30 fps shall be supported where applicable	
5.	Day/Night	True Day/Night with removable/automatic IR Cut Filter (ICR)	
6.	Minimum Illumination	≤0.005 Lux in colour mode or better; 0 Lux with IR/illumination ON	
7.	WDR	True WDR, minimum 120 dB	

8.	Image Enhancement	BLC, HLC, 3D DNR, AWB, AGC and equivalent image-enhancement functions	
9.	Lens	Motorized varifocal lens, approximately 2.7–13.5 mm or better	
10.	Iris	Auto/DC Iris or equivalent automatic exposure control	
11.	Field of View	Approximately 90° or wider horizontal FOV at wide-angle position, depending on lens	
12.	IR Illumination	Minimum IR of 40m or better	
13.	Smart IR	Smart IR / intelligent illumination control	
14.	Video Compression	H.265/H.265+ and H.264, with MJPEG or better	
15.	Video Streams	Minimum 3 simultaneous video streams	
16.	ROI	Region of Interest (ROI) support	
17.	Video Analytics	Motion detection and intelligent perimeter protection such as line crossing and intrusion detection	
18.	AI Classification	Human and vehicle classification or equivalent intelligent target classification	
19.	Intelligent Functions	Face detection/capture, people counting, loitering, unattended/missing object detection or equivalent analytics	
20.	Audio	Built-in microphone; audio recording/streaming support	
21.	Audio Interface	Audio input/output or equivalent two-way audio capability	
22.	Audio Compression	G.711 or equivalent	
23.	Local Storage	Built-in Micro-SD/SDHC/SDXC card slot, supporting minimum 512 GB	
24.	Network Interface	RJ-45 10/100 Mbps Ethernet or better	
25.	PoE	IEEE 802.3af PoE or higher	
26.	Additional Power	12 VDC or equivalent local power input	
27.	Network Protocols	TCP/IP, IPv4/IPv6, HTTP/HTTPS, RTSP/RTP, DHCP, DNS, NTP, SMTP and equivalent standard protocols	
28.	ONVIF	ONVIF Profile S/G/T or higher; interoperability with third-party NVR/VMS required	
29.	Cyber Security	HTTPS/TLS, secure authentication, password protection, IP filtering and encrypted/secure firmware where supported	
30.	Privacy Masking	Minimum 4 programmable privacy-mask areas	
31.	Image Stabilization	Digital image stabilization or equivalent preferred	
32.	Defog	Digital defog or equivalent image enhancement	
33.	Alarm I/O	Minimum 1 alarm input and 1 alarm output, where supported by the proposed model	

34.	Weather Protection	IP67 or better	
35.	Vandal Resistance	IK10 or better	
36.	Pan/Tilt Adjustment	Approximately Pan 0–355°, Tilt 0–75°, Rotation 0–355° or equivalent mechanical adjustment	
37.	Operating Temperature	Minimum -10°C to +50°C or wider	
38.	Operating Humidity	≤95% RH, non-condensing or better	
39.	Housing	Robust metal/engineering-polymer dome housing suitable for the proposed environment	
40.	Installation	Ceiling/wall mounting with suitable mounting accessories	
41.	Browser/Client	Remote configuration and live monitoring through standard web browser/VMS/client software	
42.	Certification	BIS,CE,FCC and RoHS	
43.	Operation	Suitable for 24×7 continuous surveillance	

3. 16 Channel Network Video Recorder

S.N.	Description	Specifications	Compliance Yes/No
	Make		
	Model		
1.	NVR Type	16-Channel Network Video Recorder (NVR), embedded Linux-based	
2.	IP Camera Support	Minimum 16 IP camera channels	
3.	Camera Resolution Support	Support IP cameras up to 12 MP or higher	
4.	Incoming Bandwidth	Minimum 320 Mbps	
5.	Recording Bandwidth	Minimum 320 Mbps	
6.	Outgoing Bandwidth	Minimum 320 Mbps	
7.	Video Compression	H.265/H.265+, H.264/H.264+	
8.	Recording Modes	Continuous, scheduled, manual, motion, alarm and event-based recording	
9.	Recording Resolution	Support 4K/8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 2 MP and lower resolutions	
10.	4 MP Recording/Decoding	Minimum 16 channels at 4 MP	
11.	4K Support	Support 4K UHD recording and playback	
12.	HDMI Output	Minimum 1 × HDMI, supporting up to 3840 × 2160	
13.	VGA Output	Minimum 1 × VGA	
14.	Display Split	1/4/8/9/16 or equivalent multi-screen display	
15.	Synchronous Playback	Minimum 16-channel synchronous playback	

16.	Smart Playback	Search/playback by time, event, motion, alarm and intelligent event	
17.	HDD Interface	Minimum 4 × SATA	
18.	HDD Expansion	8 SATA bays preferred	
19.	HDD Capacity	Support surveillance HDDs of minimum 10 TB per HDD or higher	
20.	Maximum Storage	Minimum 40 TB raw storage capacity or higher	
21.	RAID	RAID 0/1/5/6/10 support where provided by the proposed model	
22.	HDD Management	HDD health monitoring, formatting, storage-status monitoring and disk management	
23.	AI Analytics	Support intelligent video analytics from NVR and/or connected cameras	
24.	Human/Vehicle Detection	Human and vehicle classification/filtering	
25.	Perimeter Protection	Line crossing, intrusion detection and equivalent VCA	
26.	Face Detection	Face detection/recognition support through NVR and/or connected cameras	
27.	ANPR	Support ANPR/LPR cameras and event recording	
28.	People Counting	Support people-counting cameras/analytics	
29.	Camera-side Analytics	Support AI events generated by connected IP cameras	
30.	Alarm Inputs	Minimum 8 alarm inputs	
31.	Alarm Outputs	Minimum 4 alarm outputs	
32.	Audio Input	Minimum 1-channel audio input	
33.	Audio Output	Minimum 1-channel audio output	
34.	Two-Way Audio	Two-way audio communication support	
35.	Network Interface	Minimum 2 × 10/100/1000 Mbps RJ-45 Ethernet ports	
36.	Network Protocols	TCP/IP, IPv4/IPv6, HTTP/HTTPS, DHCP, DNS, NTP, RTSP, SMTP or equivalent	
37.	ONVIF	ONVIF Profile S/G/T or equivalent	
38.	Third-Party Cameras	Support ONVIF-compliant third-party IP cameras	
39.	USB Ports	Minimum 2 USB ports, including USB 3.0	
40.	eSATA	Minimum 1 eSATA port preferred	
41.	RS-232	Minimum 1 RS-232 interface preferred	
42.	RS-485	Minimum 1 RS-485 interface	
43.	Backup	USB, network/NAS and other standard backup methods	
44.	NAS Support	Support NAS/network storage	
45.	Remote Monitoring	Remote live view, playback, configuration and event notification	
46.	Mobile Application	Android and iOS support	
47.	CMS/VMS	Centralized video management software support	
48.	Web Access	Web browser-based configuration and monitoring	

49.	Cyber Security	HTTPS/TLS, secure authentication, password protection and IP/network access control	
50.	User Management	Multi-level user accounts and access privileges	
51.	Network Redundancy	Network fault tolerance/failover preferred	
52.	Power Supply	100–240 VAC, 50/60 Hz	
53.	Operating Temperature	Minimum -10°C to +55°C or wider	
54.	Operating Humidity	10–90% RH, non-condensing or better	
55.	Certification	BIS,CE,FCC,RoHS certifications	
56.	Reliability	Suitable for 24×7 continuous operation	
57.	Accessories	All required power cables, SATA cables, mounting accessories and software licences shall be supplied	

4. 32 Channel Network Video Recorder

S.N.	Description	Specifications	Compliance Yes/No
	Make		
	Model		
1.	Type	IP-based Network Video Recorder (NVR)	
2.	IP Camera Inputs	Minimum 32 IP channels	
3.	Camera Resolution Support	Support 4K / 8 MP IP cameras or higher	
4.	Video Compression	H.265 / H.264 or better	
5.	Incoming Bandwidth	Minimum 320 Mbps	
6.	Recording Bandwidth	Minimum 320 Mbps	
7.	Outgoing Bandwidth	Minimum 256 Mbps	
8.	Recording Resolution	Support recording of 4K (3840 × 2160) or higher resolution streams	
9.	Frame Rate	Up to 30 fps at supported resolutions	
10.	HDMI Output	Minimum 1 × HDMI, supporting 4K (3840 × 2160)	
11.	VGA Output	Minimum 1 × VGA, Full HD (1920 × 1080) or better	
12.	Synchronous Playback	Minimum 16-channel synchronous playback	
13.	Display Split	Multi-screen display, supporting at least 1/4/9/16/25/32-channel display	
14.	HDD Interface	Minimum 8 × SATA interfaces	
15.	HDD Capacity	Support minimum 10 TB per HDD or higher	
16.	RAID	RAID 1/5/6 or better	
17.	Alarm Inputs	Minimum 16 alarm inputs	
18.	Alarm Outputs	Minimum 6 alarm outputs	
19.	Network Interface	Minimum 2 × 10/100/1000 Mbps RJ-45 Ethernet ports	

20.	ONVIF	ONVIF Profile S or higher/equivalent	
21.	Network Protocols	TCP/IP, IPv4/IPv6, DHCP, DNS, NTP, HTTP/HTTPS, RTSP and equivalent standard protocols	
22.	USB	Minimum 3 USB ports, including USB 2.0/USB 3.0	
23.	eSATA	Minimum 1 × eSATA or equivalent external storage interface	
24.	Serial Interface	RS-232 and RS-485	
25.	Audio	Audio input/output and two-way audio	
26.	Motion Detection	Supported on IP camera channels	
27.	Video Tampering	Supported	
28.	Camera Disconnection/Network Failure	Detection and event notification	
29.	Perimeter Protection	Intrusion/tripwire/perimeter protection through NVR and/or compatible IP cameras	
30.	Human/Vehicle Classification	Supported through NVR and/or compatible IP cameras	
31.	Face Analytics	Face detection/recognition through NVR and/or compatible IP cameras	
32.	ANPR	ANPR/license-plate recognition through compatible IP cameras	
33.	People Counting	Supported through compatible IP cameras/NVR analytics	
34.	Smart Search/Playback	Event-based/smart search and playback	
35.	Remote Access	Remote monitoring/playback through web browser and mobile application	
36.	Cybersecurity	User authentication, HTTPS/secure communication and secure network access	
37.	Operating System	Embedded Linux or equivalent	
38.	Power Supply	100–240 VAC, 50/60 Hz	
39.	Operating Temperature	Minimum -10°C to +55°C	
40.	Operating Humidity	Minimum 10–90% RH or better	
41.	Operation	Suitable for 24×7 continuous surveillance operation	
42.	Standards/Compliance	CE,FCC,RoHS	

5. 64 Channel Network Video Recorder

S.N.	Description	Specifications	Compliance Yes/No
	Make		
	Model		
1.	NVR Type	Professional IP-based Network Video Recorder, suitable for 24×7 continuous surveillance	

2.	IP Camera Inputs	Minimum 64 IP camera channels	
3.	Camera Resolution Support	Support 4K / 8 MP IP cameras or higher	
4.	Video Compression	H.265 / H.264 or better, with support for efficient compression/Smart Codec or equivalent	
5.	Incoming Bandwidth	Minimum 320 Mbps	
6.	Recording Throughput	Minimum 320 Mbps	
7.	Outgoing/Network Bandwidth	Minimum 256 Mbps	
8.	Recording Resolution	Support recording of 3840 × 2160 (4K) or higher resolution streams	
9.	Recording Frame Rate	Up to 30 fps at supported resolutions	
10.	HDMI Output	Minimum 1 × HDMI, supporting 4K (3840 × 2160) output	
11.	Additional Video Output	Minimum 1 additional HDMI and/or VGA output, Full HD or better	
12.	Synchronous Playback	Minimum 16-channel synchronous playback	
13.	Display Split	Multi-screen display supporting at least 1/4/9/16/32/64-channel display modes or equivalent	
14.	HDD Interface	Minimum 8 × SATA interfaces	
15.	HDD Capacity	Support HDDs of minimum 10 TB per disk	
16.	Maximum Storage	Minimum 80 TB internal storage capacity with 8 HDDs of 10 TB each	
17.	RAID	RAID 1/5/6 or better	
18.	Alarm Inputs	Minimum 16 alarm inputs	
19.	Alarm Outputs	Minimum 6 alarm outputs	
20.	Network Interface	Minimum 2 × 10/100/1000 Mbps RJ-45 Ethernet ports	
21.	Network Protocols	TCP/IP, IPv4/IPv6, DHCP, DNS, NTP, HTTP/HTTPS, RTSP and equivalent standard protocols	
22.	ONVIF	ONVIF Profile S/G or higher/equivalent	
23.	USB	Minimum 3 USB ports, including at least 1 × USB 3.0	
24.	eSATA	Minimum 1 × eSATA interface or equivalent external storage interface	
25.	Serial Interfaces	RS-232 and RS-485	
26.	Audio	Audio input and output with two-way audio communication	
27.	Motion Detection	Supported	
28.	Video Tampering Detection	Supported	

29.	Camera Disconnection	Detection and event notification for camera/network disconnection	
30.	Intrusion/Perimeter Protection	Intrusion detection and perimeter protection through NVR and/or compatible IP cameras	
31.	Human/Vehicle Detection	Human and vehicle classification/detection through NVR and/or compatible IP cameras	
32.	Face Analytics	Face detection/recognition through NVR and/or compatible IP cameras	
33.	People Counting	People counting through NVR and/or compatible IP cameras	
34.	ANPR	ANPR/license plate recognition through compatible IP cameras	
35.	Smart Analytics	Support intelligent video analytics such as intrusion, line crossing, motion, tampering and other camera-based analytics	
36.	Event Management	Recording, snapshot, alarm output, email/push notification and other configurable event actions	
37.	Playback/Search	Time, event and smart search; playback, snapshot and backup functions	
38.	Remote Access	Remote live view, playback, configuration and management through web browser and mobile application	
39.	Cybersecurity	User authentication, HTTPS/secure communication, encrypted video/control transmission and secure network access	
40.	User Management	Multi-level user management with administrator and regular-user access	
41.	Operating System	Embedded Linux or equivalent secure embedded operating system	
42.	Failover/Redundancy	Failover/redundancy support where applicable	
43.	Power Supply	100–240 VAC, 50/60 Hz	
44.	Operating Temperature	Minimum -10°C to +55°C	
45.	Operating Humidity	Minimum 10–90% RH or better	
46.	Chassis	2U or equivalent rack-mountable chassis	
47.	Compliance	CE,FCC,RoHS	
48.	Operation	Suitable for 24×7 continuous surveillance operation	

6. 65-Inch Commercial LED Display / Smart TV

S.N.	Description	Specifications	Compliance Yes/No
	Make		
	Model		
1.	Display Size	65 inches (minimum)	
2.	Display Type	Commercial/Professional LED-backlit LCD display	

3.	Resolution	3840 × 2160 pixels (4K UHD)	
4.	Aspect Ratio	16:9	
5.	Refresh Rate	60 Hz or higher	
6.	Brightness	Minimum 350 nits	
7.	Contrast Ratio	Minimum 1000:1	
8.	Viewing Angle	Minimum 178° horizontal and 178° vertical	
9.	Response Time	8 ms or better	
10.	HDR	HDR10 / HLG or equivalent	
11.	Backlight	LED	
12.	Operating Capability	Minimum 16 hours/day, 7 days/week; 24×7 operation preferred	
13.	HDMI Inputs	Minimum 3 × HDMI inputs, supporting 4K UHD input	
14.	USB	Minimum 2 × USB ports	
15.	Network	Minimum 1 × RJ45 Ethernet/LAN port	
16.	Serial Control	RS-232C or equivalent control interface	
17.	Audio Output	Audio output interface	
18.	Built-in Speakers	Minimum 20 W total output	
19.	Wireless Connectivity	Integrated Wi-Fi	
20.	Bluetooth	Integrated Bluetooth or equivalent wireless audio/peripheral connectivity	
21.	Content Protection	HDCP 2.2 or higher	
22.	Smart/Commercial Platform	Integrated Smart/Commercial operating platform supporting display management and media playback	
23.	Media Playback	Built-in support for common video, audio and image formats through USB/network	
24.	Web Browser	Built-in web browser or equivalent web-content capability	
25.	Screen Mirroring	Wireless screen mirroring/casting from compatible computers and mobile devices	
26.	Network Management	Support for remote monitoring/control and network-based display management	
27.	Scheduling	On/off scheduling and content/input scheduling facility	
28.	Digital Signage	Support for digital signage/content management applications or equivalent	
29.	Installation Orientation	Landscape installation; portrait operation should be supported where required	
30.	Mounting	VESA-compatible wall mounting; minimum 300 × 300 mm or manufacturer-equivalent mounting provision	
31.	Power Supply	AC 100–240 V, 50/60 Hz	
32.	Power Saving	Automatic power-saving/sleep mode	
33.	Security	Kensington lock or equivalent physical security provision, where supported by the design	
34.	Compliance	BIS/ISI as applicable in India and other applicable statutory safety/electromagnetic compliance	
35.	Warranty	Minimum 3 years comprehensive onsite warranty from the date of installation/commissioning	
36.	Application	Suitable for continuous institutional/university use in classrooms, seminar halls, meeting rooms, conference rooms, administrative offices and common areas	

7. 9U Rack (Premium Series)

S.No	Specifications	
	Make	
	Model	
1.	Wall Mount Rack 9U 630mm deep 19".	
2.	1.6mm Vertical Mounting Rail with clear 'U' Marking.	
3.	0.8mm CRCA Sheet.	
4.	Cooling Fan options (min 1).	
5.	Cable entry/exit provision (minimum 2) at top and bottom with rubber at edges.	
6.	Front with Toughened Glass Door & Lock (5mm).	
7.	1U Cable Manager (1 Pc)	
8.	Powder coated Color- RAL- 7035.	
9.	6 Socket PDU (5amp).	
10.	Wall Mounting Kit	
11.	Conforms to DIN41494 or equivalent ISO 9001:2015 and 14001:2015 Standards.	
12.	Load Bearing Capacity - 40Kg.	
13.	For Small Networking, Telecom, Audio video, CCTV applications.	
14.	CE & RoHS Compliance	

8. 24 Port Switch 24 SFP + 2 10GBase-T ports + 4 10G SFP+ ports

S.No.	Switch - Stackable Managed Switch	Compliance (Yes/No)	
1	The Switch should have 24 SFP + 2 10GBase-T ports + 4 10G SFP+ ports, Managed Switch.		
2	RJ-45 console port for accessing the command line interface (CLI) of this switch for configuration, management, and monitoring, RJ-45 port for out-of-band management to configure the switch without being connected to the network, USB Port for connecting a USB storage device.		
3	Switch / OEM Should have Certificate for Industrial Cyber Security Capability (Like - IEC-62443-4-1:2018 or Equivalent Indian Certificate). OEM/Product must be on Trusted Telecom Portal of Department of Telecommunication, Government of India.		
4	The Switch should be Certificates FCC, CE, UL or Equivalent Indian Certificate for EMI and Safety Compliance and MTCTE.		

5	The Switch should have Operation Temperature • 0 to 50 ˚C (32 to 122 °F) or higher	
6	The Switch should support for Physical stacking up to 8 units per stack and support long-distance stacking over fiber and Support up to 40 Gbps stacking bandwidth.	
7	The Switch should support mechanism ERPS to prevent loop formation in Ethernet ring and enables ring to converge in less than 50 ms from node or link failure	
8	The Switch should have L3 Features i.e. Static routing, IPv6 Neighbour Discovery (ND), VRRP v2, OSPFv2/v3, PBR (Policy-based Route), Route Redistribution, RIPv1/v2/ng, IP Helper.	
9	The Switch should support VLAN, 802.1Q, VLAN mirroring, Double VLAN (Q-in-Q), Private VLAN, 802.3x , RSPAN.	
10	The Switch should support Security features, 802.1X authentication, Port security , Radius & TACACS+ authentication & accounting, DAD, DAI, DoS attack prevention, SSH, Guest VLAN, Time-based ACL, IP Access List, MAC Access List.	
11	The Switch should support Multicast features, Multicast VLAN, IGMP & MLD Snooping, Flow mirroring, IGMP & MLD Snooping Querier, Per-VLAN IGMP & MLD Snooping.	
12	The Switch should support Quality of Service (QoS) features , Three Color Marker, Class of Service (CoS), Bandwidth control, WRED.	
13	The Switch should support Management features, CLI, SNMP, Dual configurations, Multiple images, RMON, LLDP/LLDP-MED, sFlow, DHCP/BOOTP Client, IPv4/IPv6 Syslog server, Debug command, 802.3ah Ethernet Link OAM, 802.1ag Connectivity Fault, Y.1731 OAM, Dying Gasp, Cable Diagnostic.	
14	Switch should be supplied with the all necessary components like Power supply, Power cord, All Fan Module, Console Cable, Rack-mount kit, Installation Guide, etc. and necessary software image file to fulfil all above mention feature set from day 1.	

9. 24 Port Switch 24 SFP + 2 10GBase-T ports + 4 10G SFP+ ports

S.N.	**24 Port 10/100/1000 PoE switch**	**Compliance (Yes/No)**
1	Switch with at least 24 X RJ-45 PoE Gigabit Ethernet Ports and 4 Combo (SFP/RJ-45) 1G Ports.	
2	Switch / OEM Should have Certificate for Industrial Cyber Security Capability (Like - IEC-62443-4-1:2018 or Equivalent Indian Certificate). OEM/Product must be on Trusted Telecom Portal of Department of Telecommunication, Government of India.	
3	The Switch should be Certificates FCC, CE, UL or Equivalent Indian Certificate for EMI and Safety Compliance and MTCTE.	
4	Switching capacity should be 56Gbps or higher or non-blocking architecture.	
5	Switch packet forwarding rate should be 41Mpps or higher or non-blocking architecture.	
6	Switch MAC table should be at least 8K or higher.	
7	Switch should delivered 802.3at PoE+ and 802.3af PoE power to any of the PoE RJ-45 ports.	
8	The total power available for PoE switch should be 370W or higher.	
9	Switch should be standard 19 inch 1U rack mountable.	
10	Support for the Energy Efficient Ethernet (IEEE 802.3az) standard.	
11	Power input should be 100 to 240 V AC 50/60 Hz internal universal power supply	
12	Operating temperature should be 0 degree Celsius to +50 degree Celsius.	

13	Should support Head of Line blocking prevention for lower latency and better performance.	
14	Support Jumbo Frame up to 10K Bytes or higher.	
15	Should support IGMP Snooping, Able to create 250 or more IGMP groups, IGMP snooping querier and require support for IGMP Snooping Fast Leave.	
16	Should support MLD Snooping, Able to create 250 or more MLD groups, Per VLAN MLD Snooping and require support for MLD Snooping Fast Leave.	
17	Should have 802.1D STP, 802.1w RSTP and 802.1s MSTP Spanning Tree Protocol.	
18	Should support Loopback detection (LBD) to detect the loop created by a specific port.	
19	Should support Multicast Filtering to filters or forward all unregistered groups.	
20	Switch should support IEEE 802.1Q VLAN tagging for Ethernet frames.	
21	Different type of VLAN like Port based, Auto Voice, etc. should be available for configuration.	
22	Switch should support QoS (quality of service) IEEE 802.1P for traffic prioritization. It should support 8 queues per port.	
23	Different type of QoS priority like Strict Priority Queue and Weighted Round Robin.	
24	Port based ingress / egress rate limit function should be available with limit in increments as low as 16 Kbps.	
25	Switch should support Neighbor Discovery (ND) protocol for IPv6.	
26	Switch should support IPv4 / IPv6 IP Interfaces and support default routing and static routing with minimum 100 IPv4 static route entries and minimum 50 IPv6 static route entries.	
27	Support at least 700 access control entries. Each entry should be applied on single / multiple ports with permit / deny action.	
28	Switch should support feature for automatically throttles the impact of packet flooding into the switch's CPU.	
29	Should support port security to secures the access port based on MAC address.	
30	should have broadcast, multicast, and unicast storm control to prevents faulty end stations from degrading overall systems performance.	
31	Support Traffic Segmentation to restricted traffic flow from a single or group of ports, to another group of ports.	
32	Should have SSH and SSL for IPv4 and IPv6.	
33	Require prevention of DoS attacks, which include Land, Blat, TCP Null Scan, TCP Xmas Scan and TCP SYNFIN.	
34	Should support 802.1X port-based authentication.	
35	Should support ARP spoofing prevention.	
36	Should support DHCP snooping and DHCP server screening.	
37	Switch should able to create a binding table for IP + MAC + Port to prevents a malicious user from spoofing or to restrict the unauthorized users.	
38	Should support 802.1X RADIUS and local server database authentication.	
39	Should have option to check the status of copper cables using the cable-diagnostics time domain reflectometer (TDR).	
40	Able to manage trough Web-GUI, Compact CLI and Telnet.	
41	Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON).	
42	Should have dual Image support to enhance the reliability of the switch.	
43	Switch should support dynamic host configuration protocol (DHCP) auto configuration of multiple switches through a boot server eases switch deployment.	
44	Should have SNTP/NTP protocol for time synchronization.	

45	Switch should be IPv6 Ready Compliance.	
46	Should support Link Layer Discovery Protocol (LLDP) and LLDP-MED.	

10. 8 Port 10/100/1000 PoE switch

S.N.	**8 Port 10/100/1000 PoE switch**	**Compliance (Yes/No)**
1	Switch with at least 8 X RJ-45 PoE Gigabit Ethernet Ports and additional 2 X 1G SFP Ports.	
2	Switch / OEM Should have Certificate for Industrial Cyber Security Capability (Like - IEC-62443-4-1:2018 or Equivalent Indian Certificate). OEM/Product must be on Trusted Telecom Portal of Department of Telecommunication, Government of India.	
3	The Switch should be Certificates FCC, CE, UL or Equivalent Indian Certificate for EMI and Safety Compliance and MTCTE.	
4	Switching capacity should be 20Gbps or higher or non-blocking architecture.	
5	Switch packet forwarding rate should be 14Mpps or higher or non-blocking architecture.	
6	Switch MAC table should be at least 8K or higher.	
7	Switch should delivered 802.3at PoE+ and 802.3af PoE power to any of the PoE RJ-45 ports.	
8	The total power available for PoE switch should be 130W or higher.	
9	Switch should be standard 19 inch 1U rack mountable.	
10	Support for the Energy Efficient Ethernet (IEEE 802.3az) standard.	
11	Operating temperature should be 0 degree Celsius to +50 degree Celsius.	
12	Should support Head of Line blocking prevention for lower latency and better performance.	
13	Support Jumbo Frame up to 10K Bytes or higher.	
14	Should support IGMP Snooping, Able to create 250 or more IGMP groups, IGMP snooping querier and require support for IGMP Snooping Fast Leave.	
15	Should support MLD Snooping, Able to create 250 or more MLD groups, Per VLAN MLD Snooping and require support for MLD Snooping Fast Leave.	
16	Should have 802.1D STP, 802.1w RSTP and 802.1s MSTP Spanning Tree Protocol.	
17	Should support Loopback detection (LBD) to detect the loop created by a specific port.	
18	Should support Multicast Filtering to filters or forward all unregistered groups.	
19	Switch should support IEEE 802.1Q VLAN tagging for Ethernet frames.	
20	Different type of VLAN like Port based, Auto Voice, etc. should be available for configuration.	
21	Switch should support QoS (quality of service) IEEE 802.1P for traffic prioritization. It should support 8 queues per port.	
22	Different type of QoS priority like Strict Priority Queue and Weighted Round Robin.	
23	Port based ingress / egress rate limit function should be available with limit in increments as low as 16 Kbps.	
24	Switch should support Neighbor Discovery (ND) protocol for IPv6.	
25	Switch should support IPv4 / IPv6 IP Interfaces and support default routing and static routing with minimum 100 IPv4 static route entries and minimum 50 IPv6 static route entries.	
26	Support at least 700 access control entries. Each entry should be applied on single / multiple ports with permit / deny action.	
27	Switch should support feature for automatically throttles the impact of packet flooding into the switch's CPU.	

28	Should support port security to secures the access port based on MAC address.	
29	should have broadcast, multicast, and unicast storm control to prevents faulty end stations from degrading overall systems performance.	
30	Support Traffic Segmentation to restricted traffic flow from a single or group of ports, to another group of ports.	
31	Should have SSH and SSL for IPv4 and IPv6.	
32	Require prevention of DoS attacks, which include Land, Blat, TCP Null Scan, TCP Xmas Scan and TCP SYNFIN.	
33	Should support 802.1X port-based authentication.	
34	Should support ARP spoofing prevention.	
35	Should support DHCP snooping and DHCP server screening.	
36	Switch should able to create a binding table for IP + MAC + Port to prevents a malicious user from spoofing or to restrict the unauthorized users.	
37	Should support 802.1X RADIUS and local server database authentication.	
38	Should have option to check the status of copper cables using the cable-diagnostics time domain reflectometer (TDR).	
39	Able to manage trough Web-GUI, Compact CLI and Telnet.	
40	Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON).	
41	Should have dual Image support to enhance the reliability of the switch.	
42	Switch should support dynamic host configuration protocol (DHCP) auto configuration of multiple switches through a boot server eases switch deployment.	
43	Should have SNTP/NTP protocol for time synchronization.	
44	Switch should be IPv6 Ready Compliance.	
45	Should support Link Layer Discovery Protocol (LLDP) and LLDP-MED.	

11. Iron Pole

S.N.	**Iron Pole**	**Compliance (Yes/No)**
1	7 Mtr. Galvanized iron octagonal pole - bottom 130mm, top 70mm, base plate 220X220X12mm, foundation bolt 20X600X4 nos., camera mounting bracket	