

**OFFICE OF THE REGISTRAR :: DIBRUGARH UNIVERSITY
DIBRUGARH :: ASSAM
PIN: 786 004**



BID DOCUMENT

FOR

**NAME OF THE WORK: Supply Installation and Commissioning of Centralized CCTV
Surveillance System at Dibrugarh University**

e-TENDER No: DU/DR(Admn.)/Camp. Sec./2014/165/ 249

Date: 08/08/2024

CUT-OUT SLIP

Technical Bid

NAME OF THE WORK: Supply Installation and Commissioning of Centralized CCTV Surveillance System at Dibrugarh University

e-TENDER No: DU/DR(Admn.)/Camp. Sec./2014/165/249

Date: 08/08/2024

SUBMISSION DUE DATE & TIME : 11/09/2024 up-to 05.30 P.M.

FROM:

TO:

NAME& ADDRESS:

THE REGISTRAR
DIBRUGARH UNIVERSITY
DIBRUGARH, ASSAM

(To be pasted on the envelope containing hardcopy of “Technical Bid”)



OFFICE OF THE REGISTRAR :: DIBRUGARH UNIVERSITY :: DIBRUGARH

No. DU/DR(Admn.)/Camp. Sec./2014/165/249

Date: 08/08/2024

e-Tender Notice

Open tenders are invited through e-tendering process from Manufacturers of nationally / internationally reputed brand or its authorized dealer / distributor for **Supply Installation and Commissioning of Centralized CCTV Surveillance System at Dibrugarh University**. For details, please visit the website [https:// assamtenders.gov.in](https://assamtenders.gov.in)

Detailed specification of the items, terms & conditions *etc.* are given as Annexure at Part-B. Last date of submission of Tender as per annexure at Part-B with all relevant papers is **11/09/2024 up-to 05:30 PM** to be submitted at the office of the Registrar, Dibrugarh University, Dibrugarh, Assam.

Availability of Bid papers	From 11/09/2024	
Last date for receipt of Bid	11/09/2024 upto 5:30 P.M.	
Time & Date of opening of Bid	12/09/2024 at 02:30 P.M.	
Place of opening of Bid	Office of the Registrar, DU	
Cost of Tender Document	Rs. 1000/-(Non-refundable)	To be paid online at
EMD	Rs. 3,00,000.00	assamtenders.gov.in

The tender should be separately submitted in 02 (two) parts, *i.e.* **Part - I TECHNICAL BID** and **Part – II FINANCIAL BID**. The technical bid shall be opened on the above-mentioned date and time and the financial bid of only those bidders who qualify in technical bid shall be opened on the same date or at a later date which shall be intimated to the tenderer whose technical bids are found to be valid. Dibrugarh University reserves all the rights to reject any or all the tenders without assigning any reason thereof.

The Bidder shall submit both technical and financial bids on-line at assamtenders.gov.in portal. One hard copy of technical bid along with supporting documents and clearly marked as **“HARD COPY of Technical bid”** shall have to be submitted at the office of the Registrar, D.U. **Hard copy of Financial Bid or Cost of Tender Document/EMD as Draft/Cheque etc, will not be sent to Dibrugarh University under any circumstance.** In the event of discrepancy between online & manual technical bid, sending of hard copy of financial bid or sending of Cost of Tender Document/EMD as Draft/Cheque etc the bid will be disqualified.

-Sd-
Registrar
Dibrugarh University

Copy to:

1. The Chairperson, Tender Opening Committee, D.U., for information.
2. The Deputy Registrar (F&A) i/c, D.U. for information.
3. The Programmer, D.U., with a request to upload the e-Tender Notice at D.U. website.
4. Office File

-Sd-
Registrar
Dibrugarh University

PART A - TERMS AND CONDITIONS

A1. General Information

The tender bids duly complete in all respects, along with the necessary documents should be submitted to the Registrar, Dibrugarh University. The Technical Bids so received shall be opened on **12/09/2024 at 02:30 P.M.** in the Office of the Registrar, Dibrugarh University in the presence of the representatives of the bidders. The Financial bids of the Bidders shall be opened on the same date or at a later date to be intimated to the bidders whose Technical Bids are found to be valid. Right to reject any or all Tenders, without assigning any reason thereof is reserved by Dibrugarh University.

A2. Terms and Conditions of Supply:

1. All the manufacturers/ authorized dealers should also give a brief profile about their company and the facilities available with them of the quoted items. Their turnover and important firms/ Government Institutes/ P.S.U.s *etc.* to which they are supplying quoted items, should also be mentioned.
2. The last date and time for the submission of the bids is 11/09/2024 up-to 5:30 P.M and the bids shall be valid for 90 days.
3. Technical specifications of the instruments/equipments are given in **Annexure-I** to these papers (Part B) and the required quantities are listed in **Annexure-II**.
4. Supplier should read carefully and understand all the instructions and terms and conditions, *etc.* before participating in the bid.
5. Suppliers shall mandatorily submit the following documents in their '**Technical Bid**':
 - i) **A Brief Profile of the Company/Firm** along with their addresses and contact details of a responsible representative for any query/correspondence.
 - ii) A duly filled and signed **Check-List** as shown in **Annexure-III**
 - iii) VAT/TIN/GST Registration Certificate.
 - iv) PAN Card
 - v) Proof of submission of Tender Fee/EMD at assamtenders.gov.in or Documentary proof justifying its exemption (e.g., MSME/NSIC/SSI/*etc.*).
 - vi) **Detailed Technical Specifications** of each item/service/work offered by the Supplier. The document should be duly superscribed as "**Offered Technical Specifications**" and presented in the format as suggested in **Annexure-IV**
 - vii) Technical compliance sheet in a tabular format as shown in **Annexure-V** and duly superscribed as "**Technical Compliance Sheet.**"
 - viii) **Technical Literature** regarding the offered products including Brochures/Datasheets/ Pictures/Sketch/Diagrams *etc* with a cover page duly superscribed as "**Technical Literature**".
 - ix) Valid **Authorization** specific to this tender from **Original Equipment Manufacturer (OEM)** or Declaration in case OEM itself is the bidder.
 - x) The bidder must submit bank solvency certificate issued by a Nationalized Bank.
 - xi) All valid documentary proof of eligibility as per '**Bidders Eligibility Criteria**' mentioned in this Tender Document.
6. **Please read carefully** that the Supplier shall submit their '**Financial Bid**' **ONLINE ONLY** in the BoQ format uploaded to the assamtenders.gov.in portal against this particular tender. They **SHOULD NOT** send hardcopy of price bid to the University under any circumstance. Defying this clause will lead to **DISQUALIFICATION** of their bid. In the Commercial Bid rates should be mentioned as per BoQ. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the unprotected cells with their respective financial quotes, GST as applicable (total GST per

item to be inserted in BoQ) and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the file name. If the BoQ file is found to be illicitly modified by the bidder, the bid will be rejected.

7. The Technical Bid shall be opened, on 12/09/2024 at 02:30 P.M. or on the next working day if the offices of the University remain closed due to any reason.
8. Financial bids of bidders who qualify in the Technical Bid evaluation will be open on the same date or at a later date to be intimated to the bidders. Lowest bidder will be selected on basis of total cost of the work and not item-wise comparison.
9. The delivery and installation should be completed within 3 month or as specified from placing of the order. No extension shall be granted to the contractors/suppliers for the period of delivery, under any circumstances.
10. If the supplier fails to deliver the article as per the delivery schedule, the University shall be free to procure the balance/undelivered supply, at the risk and cost of the supplier, from other such suppliers.
11. The goods, articles, materials supplied by the supplier shall be accepted after inspection by an officer authorized by the competent authority. No articles/materials which do not conform to the specifications laid down in the terms and conditions or damaged in transit shall be accepted.
12. The bills of the suppliers shall be paid by the University after all the materials/articles/equipments have been received and installed, tested and commissioned along with proper documentation.
13. An amount equal to **10% of the total order value** shall be retained by Dibrugarh University as **Security Deposit for a period of 3 Years** from the date of completion of work. Any penalty imposed on the vendor shall be deducted from the Security Deposit.
14. Vendor must provide an undertaking that any service request will be addressed within three working days. Any delay beyond three days must be compensated by extending the warranty period with equivalent number of days.
15. The tendering firm must provide proof of documents for executing similar works earlier.
16. In the event of any breach of the terms and conditions of the supply, the University may terminate the contract placed with the supplier and forfeit the security deposit of the supplier.
17. Authorization from the respective Original Equipment Manufacturer (OEM) for the quoted products to be provided mentioning the tender enquiry no. and date.
18. Copy of product literature and catalogue, testing report, BEE rating, ISO etc. to be provided.
19. The quantity as mentioned at Part-B (Annexure-II) may be increased or decreased at the time of placing Order as per requirement.
20. Bidders are advised to study all technical and commercial aspects, instructions, forms, terms and specifications carefully in the tender document. Failure to furnish all information required in the Tender Document or submission of a bid not substantially responsive to the Tender document in every respect will be at the bidders' risk and may result in the rejection of the bid.
21. This tender document is not transferable.
22. **Participation in the tender process implies that the bidder has read and understood this bid document and that the bidder will abide by the rules and regulations of Dibrugarh University.**

A3. Bidder's Eligibility Criteria:

- 1) The Bidder must be Company/Firm incorporated under the Indian Companies act 1956 or Indian Partnership Act 1932
- 2) The Bidders should have an Annual Average Turnover of not less than Rs. 6.5 Cr in the last three financial years. Documentary evidence in this regard should be enclosed along with Technical Bid.
- 3) The Bidder should have executed at least two numbers of Security Surveillance/Networking orders, in Govt./Semi-Govt. Institution, of total value not less than Rs.1.3 Cr in the last three financial years.

- 4) The Bidder should have valid ISO 9001 Certificate. Certificate must be enclosed along with the technical bid.
- 5) The Bidder & OEM should not have been blacklisted in anywhere in India or abroad. A self – declaration letter by the Bidder (From Director/VP/CEO of the company), on the company’s letter head should be submitted along with technical bid

A4. Scope of Work:

1. Supply, Installation, Testing and Commissioning of a Centralized IP CCTV Surveillance System at Dibrugarh University.
2. A centralized monitoring and control setup shall be established at the Office of the Security Officer or any specified site at Dibrugarh University. This setup shall be enabled to view all installed CCTV camera live view or playback recorded video, retrieve/backup recorded video to any external storage device, control any installed PTZ Camera.
3. IP Cameras, active and passive network equipments, outdoor poles and brackets for Cameras, power backup and all other devices of the Surveillance System shall be installed at locations as specified by Dibrugarh University.
4. A new physical IP network shall be created for connecting the devices of the Centralized IP CCTV Surveillance System and the existing data network of the university will not be allowed to be utilized for transmitting CCTV video streams to the central storage server.
5. Provide onsite warranty and maintenance service for the Equipments as per warranty terms. A full-time onsite service personnel shall be assigned for onsite maintenance for a specified period as per purchase order placed by the Dibrugarh University. All complains must be attended within 24 hours.

Note:

- a) Bidders are advised to read carefully the Terms and Conditions of supply before recording the rates in this Schedule.
- b) No erasures or overwriting shall be allowed, unless they are authenticated under the full signature and the seal of the tenderer.
- c) The University reserves the right to:
 - I. Accept/reject any/all tenders without assigning any reason thereof.
 - II. Revise the quantities at the time of placing the order without change in the rate quoted by the bidder.
 - III. Add/modify/relax or waive any of the conditions stipulated in the tender document whenever deemed necessary to ensure greater competition.
 - IV. Award the contract to one or more bidders for the items covered by the tender.
 - V. Reject any work done by the supplier if found to be of low quality/not conforming to industry standard practices and norms or any other justifiable reason.

Appellate Authority:

First Appellate Authority	Second Appellate Authority
The Registrar Dibrugarh University Dibrugarh-786004, Assam Phone No. 0373- 2370231	Secretary to the Govt. of Assam, Finance Department Address: 2 nd Floor, F-Block, Finance Department, Janata Bhawan, Dispur, Assam-06 Phone no 0361-2237455

Part –B

ANNEXURE -I

Detailed Technical Specifications*:

*(*each item of this list must be offered by the supplier, otherwise the bid will be considered incomplete)*

1. Video Management Device

Feature	Specification
Main Processor	Industry embedded micro-controller
Operating System	Embedded LINUX
Operation Interface	WEB (PCAPP), local GUI
AI by Camera	Should Supports AI by camera function: Human face detection, human face recognition, video metadata (human/vehicle/non-motorized vehicle), perimeter protection
AI by Device	Should Supports AI by IVSS function: Human face detection, human face recognition, video metadata (human/vehicle/non-motorized vehicle), perimeter protection
Perimeter Function (AI by Device)	128 Ch Or Higher
Perimeter Function (AI by camera)	256 Ch Or Higher
Human Face Properties	Supports 6 properties: Gender, age range (6 levels), glasses, expression (8 types), mouth mask, and beard
Face Detection Performance (AI by Device) (1080P) (Channel No)	64 Ch Or Higher
Face Detection Performance (AI by camera) (Channel Number)	160 Ch Or Higher
Face Database Capacity	Minimum 50 face databases with 300,000 face pictures in total
Human face recognition performance (AI by device) (1080P) (Channel Number)	Minimum 64-channel with normal IP camera 160-channel with face detection IP camera (Totally 160
Human Face Recognition Performance (AI by Device) (1080P)(Channel Number)	Minimum 64-channel with normal IP camera 160-channel with face detection IP camera (Totally 160 face pictures analyzed per second)
Human Face Recognition Performance (AI by camera) (Channel Number)	160 Ch Or Higher
Plate Database Capacity	50 plate databases with 300,000 plate numbers in total Supports black list/white list
Plate Detection Performance by ITC Camera (Channel No)	64 Ch.
Human Body Properties	Top color, top type, bottom color, bottom type, cap, bag, age, gender, and umbrella
Vehicle Properties	Supports 9 properties: Plate, plate color, vehicle body, vehicle brand, driver calling, seatbelt status, decoration
General Alarm	Motion detect, tampering, local alarm

Anomaly Alarm	IPC offline alarm, storage error, HDD full, IP conflict, MAC conflict, login lock, AI module temperature alarm, AI module offline, fan malfunction
Intelligent Alarm	Human face detection, human face recognition, video metadata (person/vehicle/ non-motorized vehicle), perimeter protection (intrusion, tripwire), plate recognition
Alarm Linkage	Record, snapshot (full image), local external alarm output, IPC external alarm out- put, access & control, audio prompt, buzzer, log, preset, email
Non-motorized Vehicle	Supports 4 properties: Vehicle type, vehicle color, people amount, and helmet
Metadata Performance (AI by Device) (1080P) (Channel No)	32 Ch.
Metadata Performance (AI by camera)	64 Ch.
Remote Connection	256 Ch Or Higher
Network Bandwidth	Incoming bandwidth: 512 Mbps, Recording bandwidth: 384Mbps, Outgoing bandwidth: 128Mbps
Resolution	12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080P/960P/720P/D1/CIF/QCIF
Decoding Capability	6-channel 12MP (20fps)/7-channel 12MP (15fps)/6-channel 8MP (30fps)/12-channel 8MP (15fps)/7-channel 6MP (30fps)/9-channel 5MP (30fps)/11-channel 5MP (25fps)/12-channel 4MP (30fps)/18-channel 4MP (20fps)/19-channel 3MP (25fps)/12-channel 1080P (60fps)/24-channel 1080P (30fps)/36-channel 720P (30fps)
Video Output	1-channel VGA output, 3-channel HDMI output, VGA 1/HDMI 1 outputs the same video source, Supports 4K output
Multi-screen Display	Customized display, Max. 36-channel local live view: Max. 16-channel PCAPP live view
Video Compression	Smart H.265+/Smart H.264+/H.265/H.264
Audio Compression	G.711A/G.711U/PCM/G726
Protocol	HTTP, HTTPS, TCP/IP, IPv4, RTSP, UDP, SMTP, NTP, DHCP, DNS, DDNS, P2P
Interoperability	ONVIF (Profile S, T and G), CGI, SDK
Network Mode	NIC binding mode such as multiple-address mode, load balance, fault-tolerance, etc
Multiple-channel Playback	Max. 16-channel playback
Record Search	Search video detection/manual record/10 alarm/intelligent event/all record file
Storage Medium	Internal HDD, SAS disk array enclosure
Backup Method	HDD, peripheral USB storage device
Playback Function	Play, pause, stop, fast forward, fast backward, reverse play, frame by frame play Full-screen, backup (clip/file), snapshot, digital zoom, audio on/off
HDD Group	24
Storage Capacity	The device must have minimum 160TB HDD capacity from day 1
RAID	RAID 0/1/5/6/10
Audio Input	1 Ch. (reserved)
Audio Output	1-channel, speaker output, audio linkage output
Alarm Input	16 Ch.
Alarm Output	8 Ch.
Internal HDD	24 slots, SATA3.0/SAS. Max.10T/HDD

eSATA	1 Port
SAS	2 SAS (3.0) Port
RS232	1 port, for debug or transparent COM data
RS485	1 port, control peripheral PTZ and so on Supports various protocols
USB	4 Ports 2 USB2.0 port at the front panel and 2 USB3.0 port at the rear panel
HDMI & VGA	3 ports. 4K output & 1 Port VGA
Network	4 RJ-45 10/100/1000Mbps self-adaptive Ethernet ports
Power	2 Ports
Operating Altitude	5000 m
Working Environment	0°C to +45 °C (+32 °F to +113 °F)/10%RH-90% RH
Warranty	3 Years On Site Warranty

2. 4 MP 150 Mtr IR PTZ Camera

Feature	Specification
Image Sensor	1/2.8" PS CMOS (0.9071 centimeters) Or better
Effective Pixels	2560 (H) × 1440 (V), 4 Megapixels or Higher
S/N Ratio	≥55dB
RAM & ROM	1GB & 2GB or Higher
Minimum Illumination	Color: 0.005 lux@F1.6 B/W: 0.0005 lux@F1.6 0 lux (IR light on)
Max. Aperture	F1.6–F4.0
Focal Length	Minimum ~4.8mm to ~154mm
White Balance	Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/Natural light/Street lamp
Focus Control	Auto/Semi-Auto/Manual
Close Focus Distance	0.8m- 5.0m
Iris Control	Auto/Manual
DORI Distance	2124m (Detect), 839m (Observe), 425m (Recognize), 212m (Identify)
Angle of View	H: 55.81°–2.37°; V: 31.92°–1.34°; D: 63.71°–2.71°
Electronic Shutter	1/1s~1/30,000s
AGC control	Auto / Manual
Back Light Compensation	BLC / HLC / WDR(120dB)
Optical Zoom	32x
Digital Zoom	16x
Pan Travel	0°~360° endless, Pan Speed: 0.1° ~180° /s
Tilt Travel	-15° ~ +90°,auto flip 180°, Tilt Speed: 0.1° ~200°/sec
Manual Speed	Pan: 0.1° ~300° /s; Tilt: 0.1° ~120° /s
Presets	300
Preset Speed	Pan: 400° /s; Tilt: 300° /s
Power-off Memory	Support
Bit Rate	H.264: 3 Kbps–20480 Kbps ; H.265: 3 Kbps–20480 Kbps
Special Features	Electronic Defog, Up to 300 Presets, 5 Pattern, 8 Tour (up to 32 presets per tour), 5 Auto Scan
IR Range	IR Range 150 Mtr or Better
IR Number	4
Privacy Masking	Up to 24 areas, and up to 8 areas in the same view
Idle Motion	Preset/Tour/Pattern/Scanning

Day/Night: IR Cut Filter	Auto (ICR) / Color / B/W
Video Compression	H.265; H.264+; H.264B; H.264M; H.264H; MJPEG (sub stream)
Streaming Method	Unicast/Multicast
Resolution	4MP (2560 × 1440); 3MP(2048 × 1536); 1080P (1920 × 1080); 720P (1280 × 720); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240)
Video Streaming	Main stream: 4M/3M/1080P/1.3M/720P (1–25/30 fps) Sub stream1: D1/CIF (1–25/30 fps) Sub stream2: 2MP/1.3MP/720P (1–25/30 fps)
Audio Compression	G.711a; G.711Mu; G.726; AAC; MPEG2-Layer2; G722.1; G729; G723
Motion Detection	Support
ROI	Support
SMD PLUS	Support
Smart Capture	Support human, motor vehicle and non-motor vehicle image capture.
Audio Streaming	1/1 channel In/Out
Auto Tracking	Support
Alarm	2/1 channel In/Out
Alarm Linkage	Capture; preset; tour; pattern; recording; triggering on-off value output; audio; sending email
Face Detection	Support
Alarm Event	Motion/tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection; power exception detection
Perimeter Protection	Tripwire and intrusion. Support alarm triggering by target types (human and vehicle). Support filtering false alarms caused by animals, rustling leaves, bright lights, etc.
Protocols	HTTP; HTTPS; IPv4; RTSP; UDP; SMTP; NTP; DHCP; DNS; DDNS; IPv6; 802.1x; QoS; FTP; UPnP; ICMP; SNMP; SNMP v1/v2c/v3 (MIB-2); IGMP; ARP; RTCP; RTP; PPPoE; RTMP; TCP;ONVIF Profile S&G&T; CGI
Networking	RJ-45 (10/100Base-T)
Browser	IE: IE7 and later Chrome: 42 and earlier Firefox: 52 and earlier Safari
User/ Host	20 (total bandwidth 64M)
Operating Temperature	-40°C ~ +70°C (-40°F to 158°F)
Operating Humidity	≤95%
Smart Phone	iPhone, iPad, Android Phone
Memory Slot	Micro SD card (upto 256GB card support)
Weather Proof Standard	IP67; IK10; 6000V lightning proof; surge protection; voltage transient protection
Power Source	24 VDC, 2.5 A (± 25%) PoE+ (802.3at)
Power Consumption	Basic: 13 W Max.: 22 W (illuminator + PTZ working)
Warranty	3 years on site

3. Bullet Camera 5 MP 60 Mtr

Feature	Specification
Image Sensor	1/2.7" 5 Megapixel progressive CMOS (6.858 centimeters) Or Higher
Minimum Illumination	0.005 Lux@F1.5
Effective Pixels	2592 (H) ×1944 (V)
Shutter Speed	Auto/Manual, 1/3 s~1/100000s
White Balance	Auto/natural/street lamp/outdoor/manual/regional custom
Lens	2.7mm~13.5mm Motorized

Max. Aperture	F1.5
Iris Type	Fixed Aperture
DORI Distance	W- 64.0m (Detect) 25.6m (Observe) 12.8m (Recognize) 6.4m (Identify) T- 222.0m (Detect) 88.8m (Observe) 44.4m (Recognize) 22.2m (Identify)
Gain Control (AGC)	Auto/Manual
Video Compression	H.265+/H.265/H.264+/H.264/H.264H; H.264B; MJPEG
Angle of View	Horizontal: 99°-26° Vertical: 72° -20° Diagonal: 133° -33°
Back Light Compensation	BLC / HLC / WDR (120dB)
Video Streaming	Main stream (2592 × 1944@1~20 fps) (2688 × 1520@1~25/30 fps) sub stream (704 × 576@1~25/30 fps) third stream (1280 × 720@1~25/30 fps)
Resolution	5MP (2592 × 1944); 4MP (2688 × 1520); 3MP (2304 × 1296); 1080P (1920 × 1080); 1.3MP (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Motion detection	OFF/ON (4 areas, rectangular)
Privacy Mask	4 areas
ICR	ICR auto switch
ROI	Yes (4 areas)
Audio Input	1 Ch.
Audio Output	1 Ch.
Audio Compression	G.711a/ G.711Mu/ AAC/ G.726
Alarm IN	1 channel in: 5mA 3V-5V DC
Alarm Out	1 channel out: 300mA 12V DC
Bit Rate	H.264: 3 Kbps-8192 Kbps H.265: 3 Kbps-8192 Kbps
Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS, UPnP, NTP, Multicast, ICMP, IGMP, NFS, PPPoE, SNMP, ONVIF, CGI, P2P
Cyber Security	Video encryption; firmware encryption; configuration encryption; Digest; WSSE; account lockout; security logs; IP/MAC filtering; generation and importing of X.509 certification; syslog; HTTPS; 802.1x
Scene Self-adaptation (SSA)	Yes
Smart Detection	Tripwire; intrusion (Recognition of human and vehicle)
Intelligent Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos
Mirror	Yes
Ethernet	RJ-45 (10/100Base-T)
Event Trigger	Motion detection, video tampering, scene changing, audio detection, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, voltage detection
User Account	20 users
Smart Phone	iPhone, iPad, Android Phone
IR	IR Range of 60 Mtr., Smart IR or Higher
No of IR LEDs	4
Browser	IE IE8, IE9, IE11, Google Chrome, Firefox
Micro SD	FTP; Micro SD Card (support max. 256 GB); NAS
Operating Temperature	-30°C to +60°C (-22°F to +140°F)
Humidity	Less than 95% RH
Power Source	12V DC/PoE

Power Consumption	<9.8W
Weatherproof Standard	IP67
Casing	Metal
Warranty	3 years on site

4. Bullet Camera 5 MP 50 Mtr AI

Feature	Specification
Minimum Illumination	0.005 Lux@F1.5
Shutter Speed	Auto/Manual, 1/3 s–1/100000 s
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
Lens	2.7 -13.5mm Motorized Lens or Higher
Close Focus Distance	0.8m
Aperture Type	Auto
Mount Type	Board-in
Max. Aperture	F1.5
Lens Type	Motorized
DORI Distance	W- 64m (Detect) 26m (Observe) 13m (Recognize) 6m (Identify) T- 212m(Detect) 85m (Observe) 42m (Recognize) 21m (Identify)
Gain Control (AGC)	Auto/Manual
Video Compression	H.265, Smart H.264+, H.264, H.264B, H.264H, MJPEG (only supported by sub stream)
Mirror	Off/On
S/N Ratio	> 56dB
Back Light Compensation	BLC/ HLC/ WDR (120dB)
Angle of View	H: 100°–28°, V: 72°–21° (2592 × 1944) H: 104°–29°, V: 55°–16° (2688 × 1520)
Video Streaming	Main stream: 2592 × 1944@(1-20 fps)/2688 × 1520@(1-25/30 fps) /1920 × 1080@(1-50/60 fps) Sub stream: D1@(1 fps–50/60 fps) Third stream: 1080p@(1 fps–50/60 fps) *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.
Resolution	2592 × 1944/2688 × 1520/2560 × 1440/2304 × 1296/1080P (1920 × 1080)/1.3M (1280 × 960)/720P (1280 × 720)/D1 (704 × 576/704 × 480)/VGA (640 × 480)/CIF (352 × 288/352 × 240)
Motion detection	Off/On (4 Zone, Rectangle)
Privacy Mask	Off/On (4 Area, Rectangle)
ICR	Auto (ICR)/Color/B/W
ROI	Off/On (4 Zone)
Audio Input	1 Channel
Audio Compression	G.711a, G.711Mu, AAC, G.726, G.723
Audio Output	1 Channel
Alarm IN	2 channel In: 5mA 5V DC
Alarm Out	1 channel Out: 300mA 12V DC

Protocol	IPv4; IPv6; HTTP; HTTPS; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; PPPoE; 802.1x; SNMP; ONVIF (Profile S/Profile G/Profile T), CGI, Milestone, Genetec
Smart Detection	Object Abandoned/Missing, Heat Map
Ethernet	RJ-45 (10/100Base-T)
Face Detection	Face detection; track; optimization; snapshot; report high quality picture; face enhancement; face exposure; face attribute extract, 6 attributes and 8 expressions: Gender, age, glasses, expressions (anger, calm, happiness, sadness, disgust, surprise, confusion and fear), mask, beard; face matting setting: face, single inch photo; three snapshot methods: real-time snap- shot, optimization snapshot, quality priority; face angle filter; optimization time setting
Event Trigger	Motion detection, Video tampering , Scene changing, Network disconnection , IP address conflict, Illegal Access, Storage anomaly
Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; Defocus Detection; scene changing; intrusion; tripwire; abandoned object; missing object; fast moving; parking detection; loitering detection; people gathering; audio detection; people counting; face detection; voltage detection; People counting in area; Stay alarm; People No. exception detection; Queue Management
Perimeter Protection	Tripwire; intrusion; fast moving (the three functions support the classification and accurate detection of vehicle and human); loitering detection; people gathering; parking detection
People Counting	Supports the counting of enter number, leave number, and pass number, and displaying and outputting yearly/monthly/daily reports. Support the counting of number in area, and 4 rules configuration. Count number of people or stay time and link alarm. Support queue management, and 4 rules configuration. Count number of people or stay time and link alarm.
SDK and API	Yes
OTA (Online Device Upgrade)	Support
Cloud Health Monitoring System (HMS)	Support
User Account	20 Users
IR	IR Range of 50 Mtr or higher
Smart Phone	iPhone, iPad, Android Phone
Micro SD	NAS; FTP; SFTP; Micro SD card 256GB
Operating Temperature	-30°C~+60°C, Less than 95% RH
Power Source	DC 12V (±30%), PoE (802.3af), ePoE
Power Consumption	<10.9W
Weatherproof Standard	IP67 & IK10
Casing	Metal, plastic
Warranty	3 years on site

5. 4 MP Automatic Number Plate Recognition (ANPR) Camera

Feature	Specification
Image Sensor	1/1.8" Progressive Scan CMOS
Shutter Mode	Single shutter

Electronic Shutter Speed	1/25 s–1/100000 s (manual/auto) or better
Lens	5 mm–30 mm motorized vari-focal lens or higher
Exposure Mode	Full auto, customized auto, customized
Iris Control	Fixed iris/manual iris/auto iris/P iris
Image Resolution	2688 × 1520 (OSD black strip excluded)
Video Resolution	4M (2688 × 1520)/1080P (1920 × 1080)/UXGA (1600 × 1200)/720P (1280 × 720)/D1 (704 × 576)/CIF (352 × 288)
Video Frame Rate	Main stream (2688 × 1520@25fps) Sub stream (1600 × 1200@25fps)
Video Bit Rate	H.264: 32kbps–32767kbps; H.265: 32kbps–32767kbps; MJPEG: 512kbps–32767kbps
Video Compression	H.265/H.264M/H.264H/H.264B/MJPEG
Picture Encoding Format	JPEG or better
WDR	90dB or better
White Balance	Auto/outdoor/manual/local white balance/natural light/street light
Noise Reduction	2DNR/3DNR
HLC	Shall support HLC
Bad Pixel Correction	Shall support Bad Pixel Correction
Edge Enhancement	Shall support Edge Enhancement
Composite Image	Supports composing 1, 2, 3, or 4 pictures
Trigger Mode	Video detection/radar
OSD Overlay	Motor vehicles: Time, location (video channel location), lane (number, direction), plate (number and color), speed, region, vehicle color, vehicle logo, vehicle type, Non-motor vehicles: Helmet, passenger overloading
Storage	FTP, SD card (maximum 256GB@Class10)
Event Trigger	Storage full, storage error, external alarm, no storage card, license plate blocklist, illegal access, network disconnection, and IP conflict
Automatic Network Replenishment (ANR)	Platform, FTP (TF card is required)
Image Tampering Prevention	Yes. Watermark and verification shall be available for videos and images
Time Synchronization	Shall support time synchronization over NTP
Security	Authorized username and password, MAC address binding, HTTPS encryption, and network access control
Drawing Detection Line	Supports automatically drawing detection lines
Auto Registration	Shall support auto registration
Target Detection	Motor vehicles and non-motor vehicles
Face Detection	Face cutout of driver and front-seat passenger of motor vehicles, and non-motor vehicle driver
License Plate Recognition	Adopts self-developed algorithm to recognize license plates combining numbers and letters
Vehicle Type Recognition	Vehicle head: Coach bus, medium bus, SUV, MPV, pickup, heavy truck, medium truck, car, van, and light truck Vehicle tail: SUV, car, van, coach bus, pickup, cargo truck, mini truck, tank truck, and mixer truck
Vehicle Color Recognition	White, pink, black, red, yellow, gray, blue, green, amber, purple, brown, silver gray (color can- not be recognized in IR mode during night time)

Motor Vehicle Violation Capture	Overspeed, under speed, wrong-way driving, illegal lane change
Non-motor Vehicle Violation Capture	Overloading, not wearing a helmet
Traffic Flow Detection	Statistics of vehicle flow, average speed, vehicle type, lane occupancy, average time headway, average queue length, road status, and more; statistics can be exported in Excel
Traffic Event Detection	Parking violations of motor vehicles, wrong-way driving, and traffic congestion
Video Metadata	Motor vehicle: License plate, vehicle type, vehicle color, license plate color, vehicle logo, and more (color cannot be recognized in IR mode during nighttime) Non-motor vehicle: Type (two-wheelers, three-wheelers), color, wearing a helmet or not, passenger (1, 2, 3, or more passengers)
Network	1 RJ-45 Ethernet port, 10/100/1000M network transmission
Storage	Shall supports maximum up to 256GB TF card for local storage
RS-485	1 x RS485 to integrate 3rd party devices such as radar
RS-232	2 ports. G T R for serial debugging, and G T1 R1 for connecting to radar
Alarm Input / Output	3 / 2 Ch. Input/ output
Audio Input / Output	1 / 1 Cha. Input / Output for external audio device
IR Range	30 Mtr or better
Power Supply	12V DC, 36V DC, PoE
Power Consumption	≤ 8W
Operating Temperature	-40°C to +65°C (-40°F to +149°F)
Operating Humidity	10%–90%
Protection Grade	IP67
Warranty	3 years on site

6. 5 MP 40 Mtr Varifocal (VF) Dome Camera

Feature	Specification
Image Sensor	1/2.7" 5MP PS CMOS Image Sensor Or better
Effective Pixels	2592 (H) × 1944 (V)
Minimum Illumination	0.005 lux@F1.5(Color,30 IRE) 0.0005 lux@F1.5(B/W,30 IRE) 0 lux (Illuminator on)
Shutter Speed	Auto/Manual, 1/3s~1/100000s
ROM	64MB
RAM	256MB
Gain Control (AGC)	Auto/Manual
Iris Type	Fixed
Lens	2.7 mm–13.5 mm
Lens Type	Motorized lens
Close Focus Distance	0.8m
DORI Distance	W: 64.4m(Detect) 25.8m(Observe) 12.9m(Recognize) 6.4m(Identify) T: 221.4m(Detect) 88.6m(Observe) 44.3m(Recognize) 22.1m(Identify)
White Balance	Auto/natural/street lamp/outdoor/manual/regional custom
Back Light Compensation	BLC / HLC / WDR (120dB)
Stream Capability	2 Streams
Video Compression	H.265; Smart H.264+; H.264; H.264H; H.264B; MJPEG
Pan, Tilt, Rotation	Pan: 0°–355° Tilt: 0°–75° Rotation: 0°–355°
Angle of View	H: 100°–30° V: 72° –23° D: 134° –38°
S/N Ratio	>56 dB

Resolution	5M (2592 × 1944); 4M (2688 × 1520); 3M (2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Frame Rate	Main stream: 2592 × 1944@(1–20 fps)/2688 × 1520@(1–25/30 fps) Sub stream: 704 × 576@(1–25 fps)/704 × 480@(1–30 fps)
Noise Reduction	3D NR
Motion detection	OFF/ON (4 areas, rectangular)
Privacy Mask	4 areas
ICR	Auto (ICR)/Color/B/W
ROI	Supported (4 areas)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 3 kbps–8192 kbps H.265: 3 kbps–8192 kbps
Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; NTP; Multicast; ICMP; IGMP; ONVIF (Profile S, Profile G, Profile T); CGI; Genetec; Milestone
SDK and API	Should Support
Abnormality detection	Motion detection, video tampering, scene changing, no SD card, SD card full, SD card error, network disconnection, audio detection, IP conflict, illegal access, and voltage detection
Ethernet	RJ-45 (10/100Base-T)
Event Trigger	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; intrusion; tripwire; scene changing; audio detection; voltage detection; defocus detection; external alarm; SMD; Security Exception
Cyber Security	Video encryption; firmware encryption; configuration encryption; digest; WSSE; account lock-out; security logs; IP/MAC filtering; generation and importing of X.509 certification; syslog; HTTPS; 802.1x; trusted boot; trusted execution; trusted upgrade
Perimeter Protection	Intrusion, Tripwire (the two functions support the classification and accurate detection of vehicle and human)
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)
SMD Plus	Should Support
IR	IR Range of 40 Mtr.
IR Control	Auto; Manual
IR Number	2 (IR LED)
Scene Self-adaptation (SSA)	Supported
Audio Input	1 Ch. (RCA port)
Audio Output	1 Ch. (RCA port)
Audio Compression	G.711a; G.711Mu; PCM; G.726
Alarm Input	1 Ch. in: 5 mA 3–5 VDC
Alarm Output	1 Ch. out: 300 mA 12 VDC
Mirror Function	Supported
HMS	Supported
Storage	FTP, SFTP, NAS
Micro SD	Mirco SD card (Max. 256GB)
User/Host	20 (Total Bandwidth: 64M)
Browser	IE, Chrome, Firefox
Smart Phone	iPhone, iPad, Android Phone
Weatherproof Standard	IP67 & IK10

Operating Temperature	-30 °C to +60 °C (-22 °F to +140 °F)
Storage Temperature	-40 °C to +60 °C (-40°F to +140°F)
Humidity	≤95%
Power Source	12V DC/PoE(802.3af)
Power Consumption	Basic: 3.1 W (12 VDC); 4 W (PoE) Max (WDR + IR intensity + Intelligence on): 6.9 W (12 VDC); 8.1 W (PoE)
Casing	Metal
Warranty	3 years on site

7. Workstation

Feature	Specification
Processor	Latest Processor (Intel/AMD) with support for speeds of 4.5Ghz or higher, at least 6Cores and 18MB cache, 65W processor. Processor should not be launched prior to 2022.
Motherboard and chipset	Intel Q670 or equivalent AMD chipset. Motherboard make from the same OEM with Integrated discrete TPM 2.0 security.
RAM	8GB DDR5 or higher Upgradeable up to 16GB DDR5 without removing existing RAM
RAM upgradability	Minimum 2 physical DIMM slots with field replaceable memory.
HDD	Minimum 512GB M.2 PCIe SSD drive
Communication & I/O Ports	Minimum 1 x USB Type C port , Minimum 4 x USB 2.0 ports + minimum 4 x USB- Type A 3.2 Gen 1 ports; 1 audio-in/1 audio-out; or universal audio port 1 RJ-45 network connector (Gigabit LAN)
Keyboard & Mouse	Wired Keyboard with rupee symbol and Wired Scroll Mouse
Graphics	Dedicated Graphics at least AMD Radeon 6300 with 2GB DDR6 or higher
Sound card	High Definition Audio, Integrated HD Audio
Video Connector	1x Display Port and 1 x HDMI port to connect for presentation
Cabinet Form factor	Small form factor with volume 7-10Ltrs
Power Supply	Min. 300W Power supply with 90% Efficiency
Expansion Slots	Minimum 1 no. PCIe x16 ; 1 no. PCIe x1 ; Minimum 2 nos. M.2 slots
Wireless & Bluetooth	Integrated wireless supporting 802.11 a/b/g/n/ax network and Bluetooth v5.2 or higher
OS/Media and management software (from same OEM)	Factory pre-installed Windows 11 Professional (64 bit) with latest Service Pack and Preloaded License. Systems Hardware driver should be available in OEM website against the offered model. OS Declaration signed by VP/Director of OEM to be submitted with bid. Signatories email ID to be mentioned for validation.
Certification	For OEM: ISO 14001, ISO 9000, ISO 45001 for occupational hazard and safety (For India Factory) Quoted model should have UL, FCC, CE, Energy Star 8.0 , EPEAT India ,RoHS, Windows and RHEL/Ubuntu Linux (windows and Linux certification must available in the public domain against the quoted model name)
OS Support / Drivers	Support for Windows 10, 11 and downgraded version 32/64 bit; Linux latest edition (Ubuntu/RHEL). Quoted model's Hardware Drivers must be available in OEM website for download. Above asked OS certifications for the quoted model is must.
Warranty	3 (Three) Years onsite OEM Comprehensive Warranty. OEM Warranty should be visible in the OEM website in respect to each product serial number.

8. Signage Display 55 inch

Feature	Specification
Display Diagonal Size	Min 55 Inch / 54.60 Inch LED 60 Hz or higher
Active Display Area	1209.6(H) x 680.4(V)
Panel Technology	SVA / IPS
Resolution	UHD (3840 x 2160) or better
Pixel Pitch (mm)	0.105 x 0.315 or better
Brightness	350 nits or higher
Contrast Ratio	4000:1 or higher
Dynamic Contrast Ratio	100000:1 or better
Viewing Angle	178:178
Response Time (G-to-G)	Min 8 ms or better
Display Colors	Minimum 16.7 million or higher
Color Gamut	92 % or better
Maximum Pixel Frequency	594 MHz or better
Key Features	UHD Smart Display with Built-in Signage software, Super clear coating, built in WIFI, BT, internal storage, Auto source switching, Remote access facility through RDP, Office 365 or any virtual desktop software
Orientation Supported	Landscape as well as portrait
Built in Speaker	Min 2 Nos speakers each of 10 watt or better
Input RGB ports	DVI-D
Video port	Min 2 Nos HDMI ports
Secondary Video output	Stereo Mini Jack
WIFI & Blue tooth	Yes, Smart Display must have WIFI & Bluetooth
USB Port	Min 2 Nos USB ports
Other Ports	RS232C (In / Out) thru Stereo Jack, RJ45
Internal Media Player/ Video Decoder	Yes, should remain available. Should able to Support MPEG-1/2/4, H.263, H.264/AVC, UHD H.264/AVC, VC-1, AVS+, HEVC, JPEG, PNG, VP8, VP9
Audio Decoder	Should support AC3 (DD), MPEG
Certifications	ENERGY STAR 7.0, EMC, RoHS Compliant
Accessories	Display mounting on portable and movable stand
Warranty	3 Years On Site Warranty

9. Display 43 inch

Features	Specifications
Diagonal Size	43inchorabove
Panel Technology	60Hz E-LEDBLU or Equivalent
Resolution	3840*2160(4K UHD)
Static Contrast Ratio	4000:1
Viewing Angle	178:178
Response Time (GtoG)	8Ms or less
Display Colors	16.7M
Haze	2%or more

Operational Hour	Minimum 16 hrs. daily
Connectivity Input	Minimum Video- HDMI(3)
	Minimum USB-USB (1)
	RF-1 Terrestrial/ 1 Cable
Connectivity Output	Audio-Optical
External Control	RJ45
Power Supply	AC110-120V50/60Hz
Power consumption Max	125watt or better
Key Features	3 Bezel-less, Slim look, WiFi embedded, Bluetooth supported, Supported different apps, YouTube, content management through Mobile application, Video quality: HDR10+, display should support android mobile and windows PC mirroring without any additional software or dongle
Certification	Product should have BIS, FCC, CE
	OEM should have ISO 9001:2015, ISO14001:2015, ISO45001:2018
Warranty	3yrs onsite

10. 24 Port PoE+ Switch

Features & Specification
The LAN switch shall be rack mountable with 24 Nos. 10/100/1000 Base-T ports with 4 Nos. 10 Gig SFP+ Ports from day 1. (Each Switch Should be populated with 2 No. Single Mode Fiber Transceiver)
The LAN switch shall be available with minimum 128 Gbps Switching Fabric.
The LAN switch shall have minimum packet forwarding rate of 95 Mpps at 64-byte packet length.
The LAN switch shall support minimum 16K MAC addresses.
There shall be 1000 IGMP groups.
The switch shall be able to work on both Ipv4 and Ipv6 (dual stack) from day one.
The LAN Switch must have 24x 802.3at/af-compliant PoE+ ports with a total PoE power supply of 382 Watt.
All ports in the switch shall operate at wire-speed / line-rate.
The LAN switch shall support IEEE 802.1Q VLAN encapsulation. Maximum 4K VLAN Groups.
It shall support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors.
It shall support centralized VLAN Management. VLANs created on the Core Switches shall be propagated to all the other switches automatically, thus reducing the overhead of creating / modifying / deleting VLANs in all the switches in turn eliminating the configuration errors & troubleshooting.
It shall support 802.1d, 802.1p, 802.1Q, 802.1s, 802.1w, 802.1x, 802.1ab, 802.3ad.
It shall support spanning-tree root guard or any other industry standard protocol to prevent other edge switches becoming the root bridge.
It shall support IGMP snooping v1, v2, v3 and Link Aggregation Protocol (LACP).
It shall Support 802.3ah Ethernet Link OAM for Detection of Unidirectional links and to disable them to avoid problems such as spanning tree loops
It shall be able to discover the neighbouring device of the same vendor giving the details about the platform, IP Address, Link connected through etc., thus helping in troubleshooting connectivity problems.
It shall support for Switch port auto recovery (Err disable) to automatically re- enable a link that is disabled because of a network error.
It shall support Multicast VLAN registration.
It shall support LLDP / LLDP-MED including client location information. It shall exchange link and device information in multi-vendor networks.

It shall support configuration rollback to replace current configuration with any saved configuration file.
It shall support configurable maximum transmission unit (MTU) of up to 9000bytes, with a maximum Ethernet frame size of 9018 bytes (Jumbo frames) for bridging on Gigabit Ethernet ports.
It shall support auto sensing speed on 10/100/1000 ports, auto negotiating half/full-duplex on all ports and Auto-MDIX.
The LAN switch shall have per-port broadcast, multicast, and unicast storm control.
It shall have standard 802.1p CoS and DSCP classification using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 TCP or UDP port number.
There shall be eight egress queues per port to enable differentiated management of up to eight traffic types.
There shall be Weighted Round Robin (WRR) or any other industry standard protocol to provide congestion avoidance.
There shall be strict priority queuing mechanisms.
Granular Rate Limiting functions to guarantee bandwidth in increments shall be as low as 64 Kbps.
Rate limiting support based on source and destination IP address, source and destination MAC address, Layer 4 TCP and UDP information, or any combination of these fields, using QoS ACLs (IP ACLs (Ipv4 and Ipv6) or MAC ACLs), class maps, and policy maps shall be available. ACL should be based on user defined packet content (Max. 6bytes length user defined).
There shall be support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.
There shall be support for Automatic Quality of Service for easy configuration of QoS features for critical applications.
The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.
The LAN switch shall support for Admission Control features to improve the networks' ability to automatically identify, prevent, and respond to security threats and also to enable the switches to collaborate with third-party solutions for security-policy compliance and enforcement before a host is permitted to access the network.
It shall support port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports. It shall also support VLAN based filters.
It shall support unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. It shall support Unicast and Multicast MAC addresses and associated VLANs.
It shall support unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.
It shall support IGMP filtering which shall provide multicast authentication by filtering out no subscribers and limits the number of concurrent multicast streams available per port.
It shall support for SSHv2, SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.
The switch shall support 2 sessions of Port Mirroring based on port basis / VLAN basis to support intrusion prevention system deployment in different VLANs. It shall support bidirectional data on mirror port which allows IDS to take action when an intruder is detected.

It shall support RADIUS authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration.
It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network / It shall support SNMP Trap for new MAC notification.
It shall support DHCP snooping to allow administrators to ensure consistent mapping of IP to MAC addresses. This can be used to prevent attacks that attempt to poison the DHCP binding database, and to rate limit the amount of DHCP traffic that enters a switch port.
It shall support DHCP Interface Tracker (Option 82) to augment a host IP address request with the switch port ID.
It shall support port security to secure the access to an access or trunk port based on MAC address. After a specific timeframe, the aging feature should remove the MAC address from the switch to allow another device to connect to the same port.
It shall support multilevel security on console access to prevent unauthorized users from altering the switch configuration.
It shall support BPDU Guard feature, to shut down Spanning Tree Protocol Port Fast-enabled interfaces when BPDUs are received to avoid accidental topology loops.
It shall support Spanning-Tree Root Guard (STRG) to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.
It shall support for up to 512 access control entries (ACEs).
The LAN switch shall have CLI support to provide a common user interface and command set with all routers and switches of the same vendor.
It shall have Remote Monitoring (RMON v1 and v2) software agent to support for enhanced traffic management, monitoring, and analysis.
It shall have support for RMON groups through the use of a mirrored port, which permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyser or RMON probe.
It shall have layer 2 trace route to ease troubleshooting by identifying the physical path that a packet takes from source to destination or it shall support OAM 802.3ah.
It shall support Trivial File Transfer Protocol (TFTP) and File Transfer Protocol (FTP) to reduce the cost of administering software upgrades by downloading from a centralized location.
It shall support Simple Network Time Protocol/Network Timing Protocol (SNTP/NTP) to provide an accurate and consistent timestamp to all intranet switches.
It shall support RMON v1 and v2 standards.
It shall support SNMPv1, SNMPv2, and SNMPv3 and Telnet interface to deliver comprehensive in-band management, and a CLI-based management console to provide detailed out-of-band management.
It shall support IPV6 management. ACL and QoS and Ipv6 Neighbour Discovery.
It Shall Support SDN Platform and have Provision to be Work Standalone or Controller Based and support Zero-Touch Provisioning (ZTP)
Must have 3 years warranty and support

11. 8 Port Switch POE with 2 SFP port (Industrial Switch)

Technical Specification
Device should support IEEE 802.3z:1000BASE-X Gigabit Ethernet(optical fiber) IEEE 802.3ad: Standard method for performing link aggregation IEEE 802.3x:Flow control IEEE 802.1d:STP Spanning Tree IEEE 802.1s:MSTP Spanning Tree IEEE 802.1w:RSTP Spanning Tree IEEE 802.3af

Device must have at least 8 Gigabit RJ45 PoE+ Ports with 2 SFP Ports with auto negotiation/auto MDI/MDIX
Device must be populated with 2 nos fiber SFP SM 1Gig transceiver from day 1
Device must support POE 802.3af/at with Minimum 50 W of total PoE Power Budget
Device should have Packet Forwarding Speed 100 Mpps or more
Device should have MAC address table of 8K or more
Device should Support QOS features like Port-based, 802.1p and DSCP priority
Device should Support QOS features like 8 priority queues
Device should Support SP, WRR, RR, priority scheduling algorithm
Device should Support QOS features Port/Flow- Control
Support user access : HTTPS,SSL V3,TLS V1,SSH V1/V2
Device should Support Layer 2 features like IGMP Snooping V1/V2
Support IPv6 Ping IPv6 Tracert
Device should Support 802.3ad
Device should Support Spanning Tree features like STP/RSTP/MSTP
Device should Support BPDU Filtering/Guard and TC/Root Protech, Loop back detection and 802.3x Flow Control
Device should Supports VLAN: 4K VLAN,802.1Q VLAN MAC VLAN
Device should support Support static, dynamic, filtering address table
Housing: IP40 grade protection, corrugated high strength metal housing Installation: DIN rail mounting
Working temperature: -40~75
Device should be certified by FCC, CE and RoHS
Should have warranty and support for 3 Years

12. 8 Port Switch POE With 2 SFP port

Technical Specification
Device should support IEEE 802.1w, IEEE 802.1q, IEEE 802.1p, IEEE 802.1x, IEEE 802.3ad, IEEE 802.3x, IEEE 802.1d, IEEE 802.1s, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab Standards and Protocols
Device must have at least 8 Gigabit RJ45 PoE+ Ports with 2 SFP Ports with auto negotiation/auto MDI/MDIX
Device must be populated with 2 nos fiber SFP SM 1Gig transceiver from day 1
Device must support POE 802.3af/at with Minimum 150 W of total PoE Power Budget
Device should have Switching Capacity of 20 Gbps and Packet Forwarding Rate 14.8 Mpps or more
Device should have MAC address table of 8K or more
Device should support jumbo frame of 9KB
Device should Support QOS features like Port-based, 802.1p and DSCP priority
Device should Support QOS features like 8 priority queues
Device should Support QOS features Queue scheduling: SP, WRR, SP+WRR
Device should Support QOS features Port/Flow- based Rate Limiting
Device should Support Voice VLAN
Device should Support Layer 2 features like IGMP Snooping V1/V2/V3
Device should Support 802.3ad LACP and Up to 8 aggregation groups containing 8 ports per group
Device should Support Spanning Tree features like STP/RSTP/MSTP
Device should Support BPDU Filtering/Guard and TC/Root Protech, Loop back detection and 802.3x Flow Control
Device should Supports up to 512 VLANs simultaneously of 4K VLAN IDs
Device should support ACL features like L2 to L4 package filtering based on source and destination
Device should support ACL features like MAC address, IP address, TCP/UDP ports, 802.1p, DSCP, protocol and VLAN ID Time Range Based
Device should support security features like SSH v1/v2 and SSL v2/v3/TLSv1
Device should support features like Broadcast/Multicast/Unknown unicast Storm Control
Device should support security features like 802.1x and Radius Authentication, IP-Mac-Port VID Binding, ARP Inspection, DHCP Snooping and DoS Defend
Device should support AAA and Time Setting like SNTP, TFTP & Web
Device should support Web-based GUI and CLI management

Device should support SNMP v1/v2c/v3, compatible with public MIBs and RMON (1, 2, 3, 9 groups)
Device should support CPU Monitoring and Port Mirroring
Device should support System Diagnose, SYSLOG & Public MIBS
Device should be certified by FCC, CE and RoHS
Should have warranty and support for 3 Years

13. Pigtail

Standard Pigtail for OFC termination & connection

14. 24 Port LIU fully Loaded

Feature & Specification
The Fiber Rackmount LIU loaded having Adapter panel fixed on drawer base frame, with Adapters and with Pigtails and assembled with splice tray as per the Loaded fiber port requirement and their applicable accessories.
Suitable to mount at different positions (depth wise) on standard 1U 19 inch racks. Drawer type to pull out for easy maintenance when assembled in racks.
Cold Rolled Steel material with black powder coating
Three types of cable entry holes for different size cables through cable glands, covered with rubber cable grommets/covers.
Splicing of 24 fibers in each plastic fiber splicing trays with integrated cable spool design.
Non removable top cover and no rear cover. Drawer type to pull out for better access of interior.
As per the Loaded fiber port requirement, Loaded 24 (SC Simplex) adapters with SC SIMPLEX Pigtails on rackmount ports.
As per the Loaded fiber port requirement Accessories kit consists of Cable management rings/Cable saddles, Cable glands (PG13.5, 2 nos), Splice rods, Blanking clips, Velcro ties, Cable ties, Cable inlet/outlet hole covers(2 types, 2 nos each)
Cable management rings/Cable saddles can be mounted inside the rackmount, no provision to mount outside in front of the adapter panel.
Suitable for storing up to 1 meter of 900 µm tight buffered fiber pigtail per adapter.
Panel Dimensions : 482 x 220 x 44.3 mm (Length x Width x Height)
Splice Tray Dimensions : 220 x 90 x 15 mm (Length x Width x Height)
Port identification numbers printed on the Adapter panel
Standards: Comply as per ANSI/TIA-568-C.3, ISO/IEC 11801, RoHS Compliant.
Operating Temperature: -20 °C to +70° C
Installation Temperature : -20 °C to +70° C
Warranty : 3 years

15. 6 Port LIU Fully Loaded

Feature & Specification
The Fiber Rackmount LIU loaded having Adapter panel fixed on drawer base frame, with Adapters and with Pigtails and assembled with splice tray as per the Loaded fiber port requirement and their applicable accessories.
Suitable to mount at different positions (depth wise) on standard 1U 19 inch racks. Drawer type to pull out for easy maintenance when assembled in racks.
Cold Rolled Steel material with black powder coating
Three types of cable entry holes for different size cables through cable glands, covered with rubber cable grommets/covers.
Splicing of 24 fibers in each plastic fiber splicing trays with integrated cable spool design.
Non removable top cover and no rear cover. Drawer type to pull out for better access of interior.

Feature & Specification
As per the Loaded fiber port requirement, Loaded 6 (SC Simplex) adapters with SC SIMPLEX Pigtails on rackmount ports.
As per the Loaded fiber port requirement Accessories kit consists of Cable management rings/Cable saddles, Cable glands (PG13.5, 2 nos), Splice rods, Blanking clips, Velcro ties, Cable ties, Cable inlet/outlet hole covers(2 types, 2 nos each)
Cable management rings/Cable saddles can be mounted inside the rackmount, no provision to mount outside in front of the adapter panel.
Suitable for storing up to 1 meter of 900 µm tight buffered fiber pigtail per adapter.
Panel Dimensions : 482 x 220 x 44.3 mm (Length x Width x Height)
Splice Tray Dimensions : 220 x 90 x 15 mm (Length x Width x Height)
Port identification numbers printed on the Adapter panel
Standards: Comply as per ANSI/TIA-568-C.3, ISO/IEC 11801, RoHS Compliant.
Operating Temperature: -20 °C to +70° C
Installation Temperature : -20 °C to +70° C
Warranty : 3 years on site

16. LC/SC Duplex Fiber Patch Cord

Feature	Specification
patch cord	Fiber optic patch cord with two core (Duplex) fiber cable terminated with LC connector at one end and SC connector at other end
connectors	The terminated connectors in assemblies are designed and are compatible with industry standards (ANSI/TIA-568-C.3, ISO/IEC 11801).
Characteristics	Have good geometrical characteristics of apex offset & radius of curvature & fiber height 100% factory terminated and tested for optical characteristics & fiber end face finish.
Fiber type G	Fiber type G. 652D standard. OS2 (9/125 µm Corning Clear Curve),
Buffer Diameter	0.9 ± 0.05 mm, Jacket Thickness : 0.35 ± 0.05 mm, Strength Member as Aramid yarn
Cable Diameter	2.0 x 3.8 ± 0.2 (Duplex)
Jacket	color : Yellow, Jacket Material : LSZH, Length : 3 Mtr
Connector Ferrule	Ceramic, Apex Offset should be <50µm, Fiber height should be ±100nm
Connector Repeatability	≤ 0.2dB with 1,000 times mating cycles.
Connector cable retention :	50 N (11.24 lbs), Crush resistance : 100N/100mm, Bend Radius: 20xDiameter of cable Attenuation : ≤ 0.36 dB/km (@1310 nm), ≤ 0.25 dB/km (@1550 nm) Chromatic Dispersion : ≤ 3.5 ps/nm.km (@1285 - 1330 nm), ≤ 18 ps/nm.km (@1550 nm)
Zero Dispersion	Wavelength : 1300 - 1324 nm
Cut-off Wavelength	≤ 1260 nm
Mode Field Diameter	9.2 ± 0.4 µm (@1310 nm) , 10.4 ± 0.5 µm (@1550 nm)
Insertion Loss	(@1310 &1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≤ 0.3 dB Return Loss (@1310 &1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≥ 50 dB
Standards	IEC 60332-1, ANSI/TIA-568-C.3, ISO/IEC 11801,RoHS Compliant
Installation Temperature : -	20 °C to +70° C, Operating Temperature : -20 °C to +70° C
Warranty	3 years on site

17. Single Mode 6 Core Armoured OFC

Feature & Specification
06-Core, Single mode 9/125 micron primary coated buffers, 10G Ethernet OS2, Armoured Loose Tube, ECCS (Electrolytic Chrome Coated Steel) Tape, Jelly Filled Loose Tube.
Two Steel Wires/Rods embedded in outer periphery of the jacket as strength members. UV Stabilised jacket and protected from Rodent attacks
Complying to ANSI/TIA-568-C.3, ISO/IEC 11801, Telecordia GR-20 Core, ITU-T REC G.652D, IEC 60793-1/60794-1, EN 50173, RoHS Compliant
Suitable for use in indoor/outdoor ducts, direct burial and backbone cabling
Loose tube material : Polybutylene Terephthalate (PBT) with Natural/White Colour having Inner Diameter/Outer Diameter 1.7/2.5 ± 0.1 mm
Peripheral strength member as two steel wires/rods having dimensions as 0.6 ± 0.05 mm
Moisture Barrier as Water Swellable Tape, Armouring ≥ 0.150 mm (ECCS Tape), Number of Ripcords as 01 no polyester based yarns.
Outer sheath material as HDPE/LSZH with diameter as 7.5/8.5 ± 0.5 mm having thickness of 1.5mm nominal
Weight of the cable for 04/06/08/12 core (HDPE/LSZH): 65.0/75.0 ± 10 kg/km, for 24 core (HDPE/LSZH): 75.0/95.0 ± 5 kg/km
Fiber colour and Loose tube colour as per ANSI/TIA standards.
Tensile Strength : 1000 N, Crush Resistance : 4000 N/100mm
Minimum bend radius : 20 x Diameter (during installation), Minimum bend radius : 10 x Diameter (during full load)
Fiber Type : G. 652D (OS2)
Attenuation : ≤ 0.38 dB/km (@1310 nm), ≤ 0.25 dB/km (@1550 nm)
Chromatic Dispersion : ≤ 3.5 ps/nm.km (@1285 - 1330 nm), ≤ 18 ps/nm.km (@1550 nm)
Zero Dispersion Wavelength : 1300 - 1324 nm
Zero Dispersion Slope : ≤ 0.092 ps/nm ² .km
Polarisation Mode Dispersion : ≤ 0.2 ps/Vkm
Cut-off Wavelength : ≤ 1260 nm
Mode Field Diameter : 9.2 ± 0.4 μm (@1310 nm) , 10.4 ± 0.4 μm (@1550 nm)
Core Cladding Concentricity Error : ≤ 0.8 μm
Cladding Diameter : 125 ± 1 μm , Coating Diameter : 245 ± 10 μm
Cladding Non-circularity : ≤ 1 %
Installation Temperature : -20 °C to +70° C, Operating Temperature : -20 °C to +60° C
Cable Size and Standard Length: 4F to 12F : 4.0 kms ± 10% 24F : 2.0 kms ± 10%
Warranty : 3 years on site

18. HDPE Conduit

Feature & Specification
HDPE Conduit 32mm, PE.100 AND PN10 grade

19. OFC Route Marker

Feature & Specification
Concrete OFC Route markers should be installed at every 50 m of Digging

20. Cat6 UTP Cable Armoured –Outdoor

Feature	Specification
Conduct Type	Solid Bare Electrolytic Grade Copper
Nominal Conductor Diameter	23 AWG (0.555 ± 0.015mm)
Insulation	Polyethylene (HDPE)
No. of Pair	4 Pair Twisted Together
Pairing	Twisted into Two core
Color of Inner Jacket	Natural
Inner Jacket	PVC
Outer Jacket	LD
Color of Sheath	Black/Gray/Blue
Approximate OD	9.30 ± 0.50mm
Armour	Aluminium (0.6mm)
Cross Filler	HDPE
Sequential Marking	At Every Meter
Resistance Unbalance	5% Max
Conductor Resistance	93.5Ω/1000 Mtr@20°C Max
Mutual Capacitance	5.6nf/100Mtr. Max
Packing	305 Mtrs
Temperature Rating	-20 to +60°C
Installation Temperature	0 to +50°C
Storage Temperature	-20 to +75°C
NVP	69%
Impedance	100±15% Ω
Worst Cable Skew	45ns/ 100mtr.
Warranty	3 years on site

21. UTP Cat6 Cable

Feature	Specification
Conduct Material	Annealed Bare Copper
Shape of Conductor	Solid
Number of Wires	1
Wires Diameter Nom.	0.51 ± .025mm
Insulation Material	Polyethylene
Diam (Nom.)	0.90 ± 0.05mm
Pairs Colour	Blue / White - Blue, Orange / White-Orange, Green / White - Green & Brown / White- Brown
Laying	4 Pair laid Together with cross filler
OUTER SHEATH Material	PVC ST-1
Thickness Nominal	0.50mm
Aprox Overall Diam. of Cable	6.00mm
Rip Cord	Rip Cord to be provide under outer sheath
Color	Black/Gray/Blue
Characteristics Impedance	100 ± 15 Ohms
Signal Propagation Delay	555ns At 10 MHz, ns/100 mtr
Dley Skew	50 max. (ns/100m)

Packing Length	305 Mtr.
Sequential Length Marking	Support
NEXT Min.	1MHz : 72.30, 10MHz : 57.30, 20MHz : 52.80, 100MHz : 42.30, 250MHz : 36.30
Attenuation Max.	1MHz : 2.0db/100 m, 10MHz : 6.0db/100 m, 20MHz : 8.50db/100 m, 100MHz : 19.80db/100m, 250MHz : 32.80db/100 m
Warranty	3 years on site

22. 24 Port fully loaded Patch panel

Feature & Specification
The Cat-6 transmission performance is in compliance and Exceeds ANSI/TIA/EIA-568-C.2 Standard. Supports 1000-Base-T.
90 Degree (Top Entry) Punch Down Design for Convenient Network Terminations.
Ease of Installation with built in Rear Cable Management.
Removable Module Design
6x4 Module Specially Designed Jack Configuration
Contacts pins and IDC mountings assembled in Patented PCBs by Solderless Press-fit process. PCB: FR4, 1.6mm Thickness 2 Layers
Jack Wire: 30μgold plating over 40μ ~ 80μ nickel plating (Square Wire, 360°plated)
IDC Conductor : 0.5 mm Phosphor Bronze (Base Material), 100μ Tin Plating
Contact Compatibility : 22~26 AWG Stranded and Solid Wires
1U Patch Panel to Mount In any Standard Rack. Panel Frame : SPCC Powder Coating In Matt Finish Black Color.
Housing : High Impact Flame Retardant Plastic, UL 94V-0 Rated
Easy Port Labeling Identification Provision
Electrical Characteristics:
Current Rating : 1.5amps
Insulation Resistance : >= 500mΩ
Contact Resistance : <=10mΩ
DC Resistance : <=0.1Ω
DC/AC Volt Endurance : DC 1000V/AC 750V 1 Min
Mechanical Characteristics:
Plug Insertion Life : >= 750 Cycles with FCC Compliant RJ-45 Plug
Plug & Jack Contact : >= 100 Grams with FCC Compliant RJ-45 Plug Force
Plug Retention Force : >= 11 LBF
Durability : 200 Termination Cycles
Operating Temperature : -10 Degree ~ 60 Degree
Operating Humidity : 10% ~ 90% RH
Storage Temperature : -40 Degree ~ 68 Degree
Standard Verification:
ANSI/TIA-568-C.2
ISO/IEC 11801:2002/AMMD.2:2010
ISO/IEC 60603-7 Compliant
RoHS Directive 2002/95/EC/Compliant
UL LISTED
Warranty : 3 years

23. PVC Casing & Capping

Feature & Specification
ISI Mark PVC Casing, Capping, Conduit with connectors & Joints etc

24. Indoor Rack

Feature	Specification
Wall Mount Rack	6U Wall Mount rack with
	Front door & power strip with minimum 4 nos. 5/15Amp
	Min 2 nos. fan on top etc.
Warranty	3 years on site

25. Outdoor Rack

Feature	Specification
Rack Enclosure:	Sizes The cabinet shall be of 600W/600D/ 6U/ Height
	Outdoor cabinet shall be made from CRCA (IS 513 Grade) reputed make
	The cabinet shall be single skin welded rigid construction.
	The cabinet construction shall be with vandal proof construction
	Two pairs of with 19" angles with "U" marking shall be provided for mounting the switch /equipment's
	Front steel door with swing handle lock & Pad lock
	Air inlet provision with external IP Hood & washable filter arrangement shall be provided on the door
	Side & rear panels Fixed & non-removable.
	Floor, Pole and wall mount options are provided in the cabinet
	Roof Canopy shall be provided for each cabinet, should not be open able from externally
	Appropriate gap shall be provided between the Top cover & canopy for hot air exhaust.
	2X 90 cfm, 230 VAC fans shall be provided on top cover for hot air exhaust
	1Ph 230V, 16A, 2U, Standard Rack Mount Power Distribution Unit with 6 x Indian Round Pin socket, 5/15A, 16A MCB, 3.6 KVA rating, 1.5/3 meter Power cord with Indian Plug
	Cabinet shall comply IP55 standards
	Enclosures shall be provided powder coating 7 tank pretreatment with "Nano Ceramic process" for longer life. Powder coating minimum 60 to 80Microns
	Confirms DIN 41494
ISO 9001-2000, ISO 14001-2015, 45001:2018	
ROHS compliant (Restriction of Hazardous Substances).	
OEM Authorization specific to this tender should be submitted along with the bid	
Warranty	3 years on site

26. 27U Floor Standing Rack

Feature	Specification
Rack Enclosure	27U Fully Loaded Rack along with Complete Accessories
	27U 600mm(W) x 1000mm Depth Rack with
	Front Glass Door 27U 600W
	Rear Door - 27U 600W
	Cam Lock - Square Slot
	Fan : Four Fan
	Monitor Tray
	Ventilation : 495W-700Dm, Metal
	Cable Manager - 01U
	Plastic Cable Loop's
	Power Distribution Unit : 06/16 Amp Indian-Standard -06 Socket-Single Pole / Screw Mountable . 16 Amp MCB
ALTERNATING CURRENT - 16AMP 3 pIN pLUG WITH pOWER cABLE 2.5 sq.mm 3 meter Length	
Earthing Strip - 150 mm Nickel Plating	
Warranty	3 Years On Site Warranty

27. 6KVA online UPS

Feature	Specification
CAPACITY	6KVA /P.F 0.9 or better
Technology	6 KVA online rack-mount UPS. UPS should have facility for installation as tower model easily (rack-tower convertibility). UPS should have provision for connecting up to 2 or more UPSs in parallel for capacity addition.
Rack height (U)	3U max
AC Input voltage range	180 – 280VAC, single phase UPS @100% load / or better 110 – 280VAC, single phase UPS @50% load / or better
UPS Efficiency at full load double conversion mode	≥94%
Input frequency range	40-70hz (auto sensing)
Ac output voltage	Configurable for 220:230:240 V
Output frequency	50/60 Hz ± 0.1 Hz (free run) and ± 3 Hz (sync to mains)
Wave form	Pure sine wave (output)
Input protection	Through circuit breaker
Surge Energy rate	480 Joules / or better
Harmonic distortion	<5%
Crest factor	3:1
Audible alarms	On battery; low battery alarm; overload
Battery back-up	Battery backup of upto 120 minutes on IT printer load using 12V SMF VRLA Batteries. VAH should be minimum 8000 VAH. Battery Qty, AH rating and DC voltage to be mentioned along with Datasheet
Battery make	Battery make: Exide/Quanta/Panasonic only
Environmental	Operating temperature: 0-40°C,
	Audible noise <60dB / or better
	Relative humidity: 0 ~ 95% non-condensing
Interface ports	Serial RS-232, USB, SNMP

Other features	Emergency Power Off (EPO) as standard
	Battery charger capacity minimum 6.5amp
Certification	The Bidders/OEM should have submitted valid License or certification mentioned below
	ISO 9001, ISO 14001
	UPS product datasheet, user manual to be submitted along with technical bid. The same is inherently required to evaluate technical specification. The datasheet, user manual & other technical documents should be easily accessible in OEM website
Warranty	3 years onsite warranty on UPS & 2 years on battery
OEM/Bidder's Credentials and After Sales Support Infrastructure	UPS OEM /Bidder should not have past history of being blacklisted / debarred from business from any Govt. OR PSU in India
	OEM Must have a dedicated toll free number & Service SLA
	UPS OEM should have office/service center in Assam for at least 05 years

28. 1 KVA Line Interactive UPS

Feature	Specification
Rating	1000va 600 watts or Higher
Input Voltage Range	145V to 290V
Input Frequency	45 to 65 Hz
Automatic Voltage Regulation	Yes, Trim & boost
Nominal Output Voltage	230V +/- 8%
Waveform	Stepped Sinewave
Output Frequency	On Line: Same as Input & On Battery 50/60Hz +/- 3Hz
Output Sockets	4 Three pin Sockets.
Surge Protection	UPS should be with Surge Protection min 255Joules
Battery Voltage & Rating	12V, 7ah * 2nos
Short Circuit Protection	Circuit Breakers
Battery Charging	90% in 4-6hrs
Battery Saver Mode	UPS should be with battery Saver Mode.
Cold Start	UPS Should be with Cold Start feature.
Visual Indicators	On/Off, Charging, Battery Saver & Replace battery
Environment	0-40C , 0-90% RH Non Condensing.
Preventive Feature	Thermal Run-Away Prevention
Audible Alarms	On Battery, Overload, Low Battery & Replace battery
Make In India	With Minimum 55% Local Content (Certificate Must be Enclosed).
Regulatory Approvals	BIS Approved, ROHS Compliance & ISO 9001, 14001 technical Compliance on OEM Letter must be submitted in Bid.
The bidder should submit documentary evidence in support of 100% compliance to the tender specifications	The bidder should submit the Datasheet and user/operation manual of the UPS system offered. The offered product's user manual, datasheet & brochure should be easily accessible on the OEM website else bid would be liable for rejection
Warranty	3 years on UPS & 2 Years Battery

29. Camera Pole

Feature & Specification
High quality corrosion resistant metal alloy pole suitable for mounting camera – Minimum 7 mtr or higher as per requirement of the site. The pole should be able to hold minimum 4 nos camera. To be erected with appropriate concrete foundation as per industry standards.

30. SD 128GB Memory card for camera

microSDXC with SD adapter, Read: upto 190 MB/s, Write: upto 90 MB/s

31. Installation

1	Fixing of Camera
2	Configuration & Fixing of switch
3	Termination & Fixing of LIU
4	Laying of OFC
5	UTP Cable laying through PVC Casing & Capping
6	Erection Of Outdoor Camera Pole
7	OFC Splicing per Core
8	Any other job required for proper functioning of the system or ease of operation and maintenance.
9	Installation ,Configuration, Project management, Documentation
10	3 years support post installation and commissioning

32. Quality and Conditions of Supply and Installation

Particulars	Conditions
Supply	<ol style="list-style-type: none">1. All items will be delivered on working days during office hours in the presence of a representative of the supplier. The University shall under no circumstance receive any item on non-working days or beyond office hours.2. All freight and labour charges will be borne by the supplier.3. Supplier shall be responsible for safety and security of the supplied items before handing-over the project.4. The University reserves the right to reject any sub-standard or faulty/damaged item supplied.
Installation	<ol style="list-style-type: none">1. All installation to be carried out by trained professionals of the supplier. The work will be supervised by designated officials of Dibrugarh University from time to time and any instructions issued in compliance with this tender document must be entertained.2. Quality of installation must be to the satisfaction of Dibrugarh University and all industry standards for quality to be followed.3. All occupational health and safety norms and regulations mandated by the Govt. of Assam to be strictly followed by all engaged work force. The supplier shall be responsible for any damage to life or property resulting from any accident during installation or any other phase of the work.4. No property of Dibrugarh University shall be damaged/ stained during installation. In the event any such occurrence, the supplier shall be liable to repair the damage at their own cost.5. All waste/rubbish generated during installation will be cleaned by the supplier at the end of each working day.6. Food and Lodging of all engaged work force to be arranged by the supplier.

Surveillance Area Sectors

The installation sites are grouped into the following sectors:

Sector	Installation Sites
Sector 1	<ol style="list-style-type: none">1. Central Monitoring Setup2. Jyoti Batchora Gate3. DUIET Gate4. Second Gate (DODL)
Sector 2	<ol style="list-style-type: none">1. Jyomati Chatri Nivas2. Nalinibala Devi Chatri Nivas3. Aideo Handique Chatri Nivas4. Pushpalata Das Chatri Nivas5. Padmakumari Gohain Womens' Hostel6. Swaranalata Baruah Chatri Nivash7. Mamoni Raisom Goswami Chatri Nivash
Sector 3	<ol style="list-style-type: none">1. Padmanath Gohain Baruah Chatra Nivas2. Maffijuddin Ahmed Hazarika Chatra Nivas3. Miles Bronson Chatra Nivas4. Dr. Leela Gogoi Memorial Gobeshak Chatra Nivas5. Maniram Dewan Chatra Nivas
Sector 4	<ol style="list-style-type: none">1. DUIET Hostel 12. DUIET Hostel 23. Amal Prabha Das Chatri Nivas
Additional Items	<ol style="list-style-type: none">1. For Miscellaneous Locations2. For Standby/Ready Stock

Quantities Required

1. Sector 1

Sl. No.	Item	Qty
1	Display 55"	2
2	Video Management Server (250 Camera)	1
3	Workstation	2
4	24 Port LIU fully Loaded	1
5	24 Port Switch with 4 SFP	1
6	27U Floor Standing Rack	1
7	6KVA online UPS	1
8	24 Port Patch Panel	2
9	Pigtail	100
10	SD Memory card for camera 128GB	20
11	4 MP 150 Mtr IR PTZ Camera	2
12	5 MP 50 Mtr AI Bullet Camera	6
13	4Mp ANPR Camera:(Vehicle Detection)	4
14	Industrial 8 Port Switch	1
15	8 Switch Port POE	1
16	SFP	4
17	LC-LC Patch Cord	4
18	6 port LIU	2
19	OFC	1000
20	Outdoor Rack	1
21	Outdoor UTP	1
22	UTP	1
23	Indoor Rack 6U	1
24	Pole	1
25	1kva ups	2
26	HDEP Pipe	1000
27	PVC Casing & Capping	500
28	OFC Route Marker	20
29	43" Display	2
	Installation	
30	Fixing of Camera	10
31	Configuration &fixing of switch	2
32	Termination &fixing of LIU & OFC Splicing	3
33	Laying of OFC	1000
34	Utp Cable laying	600
35	Erection Of Outdoor Camera Pole	1
36	Installation, Project management, OFC termination, Weatherproof OFC Joint Enclosure, Fiber Chamber Civil Works, Documentation, 3 years' support	1

2. Sector 2

Sl. No.	Item	Qty
1	5 MP 60 Mtr Bullet Camera	16
2	8 Switch Port POE	4
3	SFP	8
4	LC-LC Patch Cord	8
5	6 port LIU	4
6	OFC	3500
7	Outdoor UTP	4
8	Indoor Rack 6U	3
9	Pole	2
10	1kva ups	4
11	HDEP Pipe	3500
12	PVC Casing & Capping	1000
13	OFC Route Marker	70
	Installation	
14	Fixing of Camera	16
15	Configuration & fixing of switch	4
16	Termination & fixing of LIU & OFC Splicing	4
17	Laying of OFC	3500
18	UTP Cale laying	1200
19	Erection Of Outdoor Camera Pole	2
20	Installation, Project management, OFC termination, Weatherproof OFC Joint Enclosure, Fiber Chamber Civil Works, Documentation, 3 years' support	1

3. Sector 3

Sl. No.	Item	Qty
1	5 MP 60 Mtr Bullet Camera	12
2	8 Switch Port POE	5
3	SFP	10
4	LC-LC Patch Cord	10
5	6 port LIU	5
6	OFC	2500
7	Outdoor Rack	0
8	Outdoor UTP	3
9	UTP	2
10	Indoor Rack 6U	5
11	1kva ups	5
12	HDEP Pipe	2500
13	PVC Casing & Capping	750
14	OFC Route Marker	50
	Installation	
15	Fixing of Camera	12
16	Configuration & fixing of switch	5
17	Termination & fixing of LIU & OFC Splicing	5
18	Laying of OFC	2500

19	Utp Cale laying	1500
20	Installation, Project management, OFC termination, Weatherproof OFC Joint Enclosure, Fiber Chamber Civil Works, Documentation, 3 years' support	1

4. Sector 4

Sl. No.	Item	Qty
1	5 MP 60 Mtr Bullet Camera	6
2	8 Switch Port POE	3
3	SFP	6
4	LC-LC Patch Cord	6
5	6 port LIU	3
6	OFC	4000
7	Outdoor UTP	2
8	UTP	1
9	Indoor Rack 6U	3
10	1kva ups	3
11	HDEP Pipe	4000
12	PVC Casing & Capping	500
13	OFC Route Marker	80
	Installation	
14	Fixing of Camera	6
15	Configuration & Fixing of switch	3
16	Termination & Fixing of LIU & OFC Splicing	3
17	Laying of OFC	4000
18	Utp Cale laying	900
19	Installation, Project management, OFC termination, Weatherproof OFC Joint Enclosure, Fiber Chamber Civil Works, Documentation, 3 years' support	1

5. Additional Items

Sl. No.	Item	Qty
1	5 MP 60 Mtr Bullet Camera (including 20 for Standby)	28
2	8 Switch Port POE	4
3	SFP	8
4	LC-LC Patch Cord	8
5	6 port LIU	4
6	OFC	1500
7	Outdoor UTP	2
8	UTP	1
9	Indoor Rack 6U	4
10	1kva ups	4
11	HDEP Pipe	1500
12	PVC Casing & Capping	500
13	OFC Route Marker	30
	Installation	
16	Fixing of Camera	8

17	Configuration & Fixing of switch	4
18	Termination & Fixing of LIU & OFC Splicing	4
19	Laying of OFC	1500
20	Utp Cale laying	900
21	Installation, Project management, OFC termination, Weatherproof OFC Joint Enclosure, Fiber Chamber Civil Works, Documentation, 3 years' support	1

ANNEXURE-III**CHECK-LIST***(For documents to be mandatorily submitted)*

Sl. No.	Particulars	SUBMITTED Please respond in YES/NO/Remark(if any)
1	Brief profile of the Company/Firm with contact details.	
2	Annexure III (copy of this check-list itself, duly filled-in and signed with company seal)	
3	Copy of PAN Card	
4	Copy of GST Registration Certificate	
5	Proof of submission of Tender Fee/EMD at assamtenders.gov.in or Documentary proof justifying its exemption (e.g., MSME/NSIC/SSI/etc.).	
6	Offered Technical Specifications in tabular format against each item in Annexure I	
7	Technical Compliance Sheet as in Annexure IV	
8	Technical Literature of each offered items.	
9	OEM Authorization/Declaration etc. specific to this tender.	
10	Proof of Incorporation under Indian Companies Act 1956 or Indian Partnership Act 1932	
11	Trade License or Certificate of Incorporation or Partnership Deed of the bidder	
12	Bank Solvency Certificate issued to the bidder by a Nationalized Bank.	
13	Copy of the audited Profit & Loss Statement & Balance Sheet of the firm and Certificate from the Chartered accountant clearly stating the turnover for last three financial years.	
14	Declaration regarding Non-Blacklist of Bidder/OEM anywhere in India or abroad on Bidders Letterhead.	

ANNEXURE-IV

Offered Technical Specifications

(Must be duly filled, signed by the bidder, affix its seal and be submitted with the Technical Bid)

Sl. No.	Particulars	Detailed Technical Specifications (Make and Model of offered items must be mentioned)
1	Video Management Device	
2	4 MP 150 Mtr IR PTZ Camera	
3	Bullet Camera 5 MP 60 Mtr	
4	Bullet Camera 5 MP 50 Mtr AI	
5	4 MP Automatic Number Plate Recognition (ANPR) Camera	
6	5 MP 40 Mtr Varifocal (VF) Dome Camera	
7	Workstation	
8	Signage Display 55"	
9	Display 43"	
10	24 Port PoE+ Switch	
11	8 Port Switch POE with 2 SFP port (Industrial Switch)	
12	8 Port Switch POE With 2 SFP port	
13	Pigtail – Standard Pigtail for OFC termination & connection	
14	24 Port LIU fully Loaded	
15	6 Port LIU Fully Loaded	
16	LC/SC Duplex Fiber Patch Cord	
17	Single Mode 6 Core Armoured OFC	
18	HDPE Conduit	
19	OFC Route Marker	
20	Cat6 UTP Cable Armoured –Outdoor	

21	UTP Cat6 Cable	
22	24 Port fully loaded Patch panel	
23	PVC Casing & Capping	
24	Indoor Rack	
25	Outdoor Rack	
26	27U Floor Standing Rack	
27	6KVA online UPS	
28	1 KVA Line Interactive UPS	
29	Camera Pole	
30	SD 128GB Memory card for camera	
31	Quality and Conditions of Supply and Installation	

Signature & Seal of Bidder

ANNEXURE-V**Technical Compliance Sheet**

(Must be duly filled, signed by the bidder, affix its seal and be submitted with the Technical Bid)

Sl. No.	Particulars	Compliance <i>Please respond in</i> YES/NO/Remarks (if any)
1	Video Management Device	
2	4 MP 150 Mtr IR PTZ Camera	
3	Bullet Camera 5 MP 60 Mtr	
4	Bullet Camera 5 MP 50 Mtr AI	
5	4 MP Automatic Number Plate Recognition (ANPR) Camera	
6	5 MP 40 Mtr Varifocal (VF) Dome Camera	
7	Workstation	
8	Signage Display 55"	
9	Display 43"	
10	24 Port PoE+ Switch	
11	8 Port Switch POE with 2 SFP port (Industrial Switch)	
12	8 Port Switch POE With 2 SFP port	
13	Pigtail – Standard Pigtail for OFC termination & connection	
14	24 Port LIU fully Loaded	
15	6 Port LIU Fully Loaded	
16	LC/SC Duplex Fiber Patch Cord	
17	Single Mode 6 Core Armoured OFC	
18	HDPE Conduit	
19	OFC Route Marker	
20	Cat6 UTP Cable Armoured –Outdoor	

21	UTP Cat6 Cable	
22	24 Port fully loaded Patch panel	
23	PVC Casing & Capping	
24	Indoor Rack	
25	Outdoor Rack	
26	27U Floor Standing Rack	
27	6KVA online UPS	
28	1 KVA Line Interactive UPS	
29	Camera Pole	
30	SD 128GB Memory card for camera	
31	Quality and Conditions of Supply and Installation	

I/We declare that all responses regarding Technical Compliance of above-mentioned items are made after **reading and understanding** the Technical Specifications and Scope of Work described in **Annexure I** of this tender document. **The responses made above are true for the items to be supplied and hides no underlying condition/information etc.**

Signature & Seal of Bidder