

TENDER DOCUMENT
FOR
PROCUREMENT OF
SUPPLY, INSTALLATION AND COMMISSIONING OF CCTV SYSTEM,
NETWORKING, NETWORK SECURITY WORK
JIWAJI UNIVERSITY, GWALIOR



REGISTRAR
JIWAJI UNIVERSITY
GWALIOR - 474011 (M.P.)

जीवाजी विश्वविद्यालय, ग्वालियर

Sino./Store/2024/909

Date: 21/11/2024

प्रथम ऑनलाइन ई-निविदा आमंत्रण

जीवाजी विश्वविद्यालय, ग्वालियर के लिए अधिकृत विक्रेता अथवा निर्माता से www.mptenders.gov.in पर ऑनलाइन निविदा आमंत्रित की जाती है, जो कि www.mptenders.gov.in से डाउनलोड की जा सकती है, इसके अतिरिक्त विश्वविद्यालय की वेबसाइट www.jiwaji.edu पर भी देखी जा सकती है, विवरण निम्नानुसार है:

निविदा प्रपत्र समस्त टर्म्स एंड कंडीशन्स एवं विवरण सहित www.mptenders.gov.in वेबसाइट पर नीचे दी गयी राशि ऑनलाइन टेण्डर फीस जमा करने पर डाउनलोड की जा सकती है।

Sino.	Tender ID/MP/JUG Tender No.	Description of work	Work	EMD	Cost of Tender (Non refundable)
1.	2024_JIWAJL_383761_1	SUPPLY, INSTALLATION AND COMMISSIONING OF CCTV SYSTEM, NETWORKING, NETWORK SECURITY WORK	01	2,70,000.00	2,500.00

- ऑनलाइन निविदा प्रपत्र क्रय करने की प्रारम्भिक दिनांक **25/11/2024** शाम 5:00 बजे है।
- ऑनलाइन निविदा प्रपत्र क्रय करने की अंतिम दिनांक **16/12/2024** शाम 5:00 बजे तक है।
- ऑनलाइन निविदा जमा करने का अंतिम दिनांक **16/12/2024** शाम 5:00 बजे तक है।
- निविदा प्रपत्र ऑनलाइन वेबसाइट <https://mptenders.gov.in/> पर जमा किए जाएंगे।
- निविदा शुल्क ऑनलाइन जमा करना अनिवार्य है।
- निविदाकर्तागण से अनुरोध है कि निविदा से संबंधित संशोधन, शुद्धि पत्र आदि वेबसाइट पर ही अपलोड किए जाएंगे, अतः वेबसाइट पर अध्ययन रहें।
- निविदा में दर्शाये दिनांक निविदा खोली जावेगी समय पर/, निविदा खोलने के उपरांत तकनीकी निविदा में योग्य पाये गए निविदाकर्ताओं एवं वित्तीय निविदा की जानकारी वेबसाइट के माध्यम से बाद में सूचित की जावेगी।
- कुलसचिव, जीवाजी विश्वविद्यालय को बिना कोई कारण बताये निविदा स्वीकृतरहीकरण /अस्वीकृत / का अधिकार होगा। करने


कुलसचिव

NOTICE INVITING TENDER DETAILS

Sino.	Description	
1.	Department name	Jiwaji University Gwalior -474011 (M.P.)
2.	Tender Number	JU/COE /Tender/2024
3.	Tender Subject	SUPPLY, INSTALLATION AND COMMISSIONING OF CCTV SYSTEM, NETWORKING, NETWORK SECURITY WORK
4.	Period of Contract	One Year
5.	Form of contract	Schedule Wise
6.	Tender type	Open
7.	Tender category	Products (both hardware and software)
8.	EMD/Bid Security (INR)	2,70,000.00
9.	EMD/Bid security Payable to	Registrar, Jiwaji University, Gwalior -474011 (M.P.) EMD has to be paid online through www.mptenders.gov.in
10.	Tender fee (non-refundable)	The tender fee to be submitted online through www.mptenders.gov.in paid in the favor of Registrar, Jiwaji University, Gwalior.
11.	Downloading of Tender Documents	www.mptenders.gov.in /www.jiwaji.edu

12.	Tender Publish date	25/11/2024 at 05.00 PM
13.	Bid Documents download start Date	26/11/2024 at 05.00 PM
14.	Bid Submission Start date	26/11/2024 at 05.00 PM
15.	Bid Submission End date	16/12/2024 at 05.00 PM
16.	Submission of E-Bid	www.mptenders.gov.in For delay, University cannot be held responsible.
17.	Technical Specification Bid Opening Date	20/12/2024 (11:00 AM)
18.	Price Bid Opening	www.mptenders.gov.in
19.	Place of Technical Bid Opening	In the Administration Block of Jiwaji University. Gwalior
20.	Officer Inviting Bids/Contact Person	Registrar, Jiwaji University Gwalior - 474 011, (M.P.)
21.	Eligibility Criterion	As per the tender document (Annexure -02)
22.	Procedure For Bid Submission	e-BID has to be submitted through www.mptenders.gov.in . Documents in support of Technical Specifications along with make and models of all the items as per the list mentioned in Annexure -05 duly mentioning the make. Supporting documents of standard certifications. Annexure-02 of tender document duly signed with office seal as a token of acceptance of our standard terms and conditions List of customers, to whom the bidder had supplied identical materials in the past along with P.O. details and performance report. Annexure -08 of the bidding document has to be submitted to The Registrar, Jiwaji

		University Gwalior. Registrar will not hold any risk and Responsibility for non-visibility of the scanned document or the loss in transit.
23.	General Terms and Conditions	As per tender document

TENDER FEES (To be submitted online)

Sino.	Description of work	Cost of Tender (Non-refundable)
1.	SUPPLY, INSTALLATION AND COMMISSIONING OF CCTV SYSTEM, NETWORKING, NETWORK SECURITY WORK	2, 500.00

Contents of the Tender Document

1. Schedule of Quantity	Annexure-01
2. Eligibility Criteria & Special terms and conditions	Annexure-02
3. List of Documents to be enclosed	Annexure-03
4. List of Addresses	Annexure-04
5. Technical Specifications	Annexure-05
6. Instructions to Bidders	Annexure-06
7. General Purchase Conditions	Annexure-07
8. Statement of Deviations	Annexure-08
9. Guidelines for Submission of Bank Guarantee	Annexure-09
10. Bank Guarantee Performa for Performance Security	Annexure-10
11. Technical Bid Form	Annexure-11
12. Proforma of Performance Bank Guarantee	Annexure-12
13. Format of Contract Agreement	Annexure-13
14. Commercial Bid form	Annexure-14

Annexure – 01

Schedule of Quantity

S.No.	Description of work	Quantity
1.	SUPPLY, INSTALLATION AND COMMISSIONING OF CCTV SYSTEM, NETWORKING, NETWORK SECURITY WORK	01

Annexure -02

As per Ministry of Home Affairs Advisory by O.M. No. IV-24011/22/2020-

Prov-I/270 dated 26 April, 2024

STC FOR Camera for CCTV System (V2)

1) Note to Buyers:-

- I) (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's. 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 to be issued by Standardization 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.
- I) (B).**Buyers are also expected to strictly ensure compliance to the MHA advisory issued by O.M. No. IV-24011/22/2020-Prov-I/270 dated 26 April, 2024. Wherein inter alia following is stipulated.
- i.** All Government agencies are advised that henceforth they may procure their CCTVs and allied solutions and hardware on the basis of the Public Procurement Order-2017 and ensure the security of CCTV systems as mentioned in the above said notifications.
 - ii.** Further, MeitY has issued Advisory vide O.M. dated W-43/11/2021-IPHW dated 11 Mar 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 guideline outlined within the ambit of the Public Procurement Orders to safeguard the overall security and integrity of CCTV Cameras.
- II)** Buyer is expected to apply all relevant filters against "Golden/Filterable" parameters to clearly define the technical requirements.

- a) **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 into vague contract. Accordingly any bid not having specific value against the GOLDEN parameters resulting into limited competition or higher cost to the exchequer or incomplete/vague contract, the Buyer shall be solely responsible.
- b) **For Procurement through DIRECT/L1:** Buyers are advised to apply filters/ selections allowing all the values which are considered meeting or are better than their technical requirements. For any violation of the above if resulting into limited competition or higher cost to the exchequer, the Buyer shall be solely responsible.
- III) (a): Buyer intended for buying Camera for CCTV System (V2) with optional accessories, optional features shall use BID/RA. This optional kind of parameters which are multi-select for 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 of accessories other than the bid/RA requirement due to the fact that the contract gets generated based on the catalogue uploaded by the OEM/seller. This type of optional parameters is to enable the seller without creating multiple catalogues for given base model shaving capabilities to be upgraded.
- (b): Direct/L1 procurement with 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 buyer has not exercised their right to choose by specifying the same in bid/RA.
- IV) The buyer shall also refer to GTC Clause4. xiii. (W). The ATC / additional specification if any added by the buyer shall not be contradictory to the Gem category specifications / technical particulars (TP).
- V) Buyer/ consignee shall verify all the parameters/ specifications including the specifications which are to be as per the OEM brochure before issuing of CRAC.
- VI) 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: -

- I) (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 declared values are contradictory to the specifications provided elsewhere in the TP; the specification claimed in the TP shall supersede to the seller declared values.
- II) Also, same model shall not be uploaded across catalogues with unreasonable / contradictory offerings.
- III) In case any discrepancy is observed in the offered / uploaded products, OEM dashboard of the respective Brand may be removed, and account shall be suspended as per IM policy.

ELIGIBILITY CRITERIA AND SPECIAL TERMS AND CONDITIONS

1. ELIGIBILITY CRITERIA FOR OEM AND TENDERERS:

1. OEM Company for Camera & NVR should have its own company registered in India (under Incorporation of Companies Act, 1956/ 2013) since last 10 year. Any representation through a Dealer/ Distributor/ Subsidiary/ consortium shall not be treated as OEM. CCTV OEM should have manufacturing in India since last Five years and Foreign CCTV OEM should have manufacturing unit globally from last 10 Years. (Documentary evidence should be submitted). This has to be supported by necessary statutory documents.
2. The OEM of the IP Camera, NVR and Network Switches should not be blacklisted or banned by any country or government department in any country. The OEM should not have any cheating or fraud case filed against their company for their respective product line.
3. CCTV Camera OEM should be fulltime member of ONVIF Features and quoted models should be listed on official website of OEM Brand and Its Datasheet.
4. The CCTV OEM should have CMMI Level 5 or above certification
5. The CCTV OEM should have below ISO Certifications for Quality, Environment, Security management and Health & Safety Management system for manufacturing of all types of Cameras & NVR. All the CCTV Components (Camera, NVR, etc.) should be from same OEM for

seamless integration and ease of operation. The Bidders shall attach the copy of the OEM's ISO Certificate along with the bid ISO 9001:2015, ISO 14001:2015, ISO 27001:2013, ISO 45001:2018.

- 6.** The Camera OEM should comply with General Data Protection Regulation (GDPR). OEM should have valid EPR (Extended Producer Responsibility) License/ Authorization No. from Central Pollution Control Board for Electrical & Electronic Equipment E-Waste. OEM needs to submit its certificate with technical bid.
- 7.** The CCTV OEM should have its office and service/ support center in Gwalior Location from past 5 years for better services. Required sales, service tax number/ certificate to be provided along with the bid.
- 8.** The Camera OEM should be an affiliated Industry Training Partner of an appropriate active and approved training council of NSDC in the field of electronic security / CCTV/ Video Surveillance or similar for a period of a minimum of two years. The Bidder should have a minimum of 2 technical resources in their payroll and should be certified by Camera OEM. The certificate may be verified with the OEM. The Bidder shall submit a copy of documentary evidence of certificate of affiliation / MOU / relevant supporting document issued by the council in the name of OEM. The certificate may be verified with the relevant issuing authority.
- 9.** To demonstrate the reliability and credibility of CCTV OEM, they must have supplied a minimum of 500 IP CCTV cameras to any State Government, Central Government, or Public Sector Undertaking in India over the past seven years as of the bid submission date. Purchase order copies and supply evidence should accompany the submission.
- 10.** All CCTV cameras offered in the project should be UL, CE, FCC, RoHS and BIS certified.
- 11.** The Bidder(s) must propose 'Makes' that are in compliance to 'Make in India' guidelines of Government of India. The following are key Guidelines/Advisories/ Orders / Notifications published by Department of Expenditure (Ministry of Finance)/CERT-IN/MeitY/DIPP/DOT, Government of India and any Guidelines /Advisories/ Orders / Notifications published by Government for Reference. PPP-Make in India

Order, from Department of Industrial Policy and Promotion Procurement dated 23 July 2020 (F.No.6/18/2019-PPD, Ministry of Finance, Department of Expenditure Public Procurement Division)

10. Bidders are required to attach an undertaking to the tender document confirming that the firm has not been blacklisted by any Agency or Government Department in India.
11. Bidders must upload a cancelled Cheque, GST Certificate, and Last 3 Months GST Tax Return.
12. Prices shall be inclusive of all taxes, duties, Complete Installation (if increased in bid) and GST on a door delivery basis. No additional transportation or any other charges will be paid by the Buyer.
13. Bidders must be authorized Resellers of the OEM Brand, Bid specific Manufacture Authorization Format Certificate is Compulsory for this GEM Bid.
14. All disputes are subject to the jurisdiction of the Court of Gwalior.
15. Products should be of a reputed brand, Bidders should submit service and installation declarations as per our requirements, Bidders should be willing to modify products as per our requirements.
16. All Camera, Recorder, Poe, Cable, Rack & Display panel should be from single OEM for better and smooth connectivity.
17. The Buyer Reserves the right to cancel the bid at any stage of the procurement process if the material or products do not meet our Quality and specifications, the buyer reserves the right to reject the material and cancel the awarded bid.
18. Firewall device OEM should have UK CA, CE, RoHS and IP40 certificates.
19. OEM of all Passive components should have CE, FC, RoHS Certificates.

2. SPECIAL TERMS AND CONDITIONS:

Scope of Work:- Tender is for Supply, Installation, Testing, Commissioning of CCTV Security / Wi-Fi System, Networking work, network security & Annual Maintenance Contract for Five Years for Supplied Equipments and Six Years Existing IP Network/ CCTV Equipments at Jiwaji University, Gwalior.

1. OEM of supplied all items must be ISO Certified.

2. The participating bidders should have GST registration. Registration certificate copy should be attached.
3. The Bidder must have a minimum average turnover of Rs. 50 Lakhs in the last three financial years.
4. The bidder or CCTV OEM must have executed the supply of minimum 500 IP Cameras in single order in any State / Central Govt./PSU, Copy of order should be attached.
5. Main CCTV components : 2MP IP Dome Camera,2MP IP Bullet Camera,8MP High Definition Camera,32 Ch Network Video Recorder (NVR),8 Ch Network Video Recorder (NVR),16 Port Smart Switch,8+2 Port Giga Switch,4+2 Port Giga Switch,6U Network Rack with Accessories,4U Network Rack with Accessories,Cat6 Cable 305 M Box should be same OEM, All these product should be Make in India (MII).
6. Passive component :Related to fiber work /Network management i.e. Optical Fiber Cable, 6 Core, SM, 6 Port LIU, Loaded, 2 Port LIU, Loaded, SC Pigtail/Coupler, Optical Fiber Patch Cord, SM, 3M, Media Convertor, Wireless access Point POE Based be from same OEM only.
7. Make and model offered for main CCTV Components shall be submitted by bidder along with data sheet and it should be available on OEM website. Same 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.
8. Bidder shall not be black listed or should not have a pending case or pending complaint of irregularity in India or abroad, by any global international body like world bank / international monetary fund / world health organization etc., or any Indian state/ central governments departments or public sector undertaking of India. The same will send (Hard copy) to the buyer on 100 Rs Stamp Paper with Notary acknowledgment within 5 days of the Bid end date. The softcopy of the same should be uploaded with the Bid.
9. The bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the bid document, etc and corrigendum if any.
10. Manufacturer authorization: For CCTV Main Component and Firewall device is mandatory wherever authorized distributors/ dealers are submitting the bid, Manufacturers Authorization Form (MAF) certificates with OEM details such as name designation, address, email id and phone no. required to be furnished along with the tender.Bid specific MAF is also mendatory for passive component.
11. The Bidder should also upload an undertaking on Rs 500/- stamp paper with Notary that the information given and the certificates uploaded are true and the bidder will supply the material as per the offer only and there will not be any deviation in supplied and offered items. The hard copy of the same must reach to the buyer within 5 days of the Bid end date.

12. Technical Compliance of CCTV Main Component and Firewall device should be uploaded on OEM letter head.
13. All vendors are directed to do a site-survey for CCTV Camera/Active/Passive/Old CCTV Equipments before participating. An approved signed copy of site survey report from buyer department shall be uploaded along with the bid. Bid received without site survey certificate shall be rejected.
14. Bidder will provide maintenance services for 6 years after successful installation/Commissioning of the project i.e.1 year for warranty and 5 Years for AMC and 6 year AMC for existing CCTV Security system.
15. Payment Terms:-
 - (A) The payment of 50 % cost of material supplied & 100% taxes shall be released against the Delivery of items at site as per the order and their inspection by Jiwaji University
 - (A). The balance payment of 50 % of the material supplied and 100% of Installation and commissioning charges on completion of Installations and site acceptance by Jiwaji University.
 - (C) 100% payment for Annual Maintenance Contract (AMC) for 5/6years will be release on submission of 100% Performance Bank Guarantee of the AMC PO value at the time of start of warranty and AMC.
17. Demolition of old /Faulty/Nonworking CCTV Camera must be done by bidder and this will be done in proper manner. Any damage/repair happen will be repaired by bidder without any additional cost.
18. Bidder have to resolve any fault or issue with in 24 hrs of complaint

Annexure-3

List of Documents to be enclosed

The following documents should be submitted along with the bidding form otherwise the tenders are liable to be disqualified.

1. All the Supporting documents in respect of Eligibility criteria i.e. Registration / Incorporation Certificate in support of the existence of the company for required number of years as per the tender schedule eligibility criteria. List mentioning the addresses and contact persons with phone numbers of the service centers present in India.
2. Supporting Documents indicating that the bidder is the Manufacturer or the OEM/ Authorized representative of the corresponding items/products. IT returns for the last three Assessment years
3. Annexure-02 duly signed & office Seal affixed as a token of acceptance of Special Terms and Conditions.
4. The Registrar Jiwaji University, Gwalior will not hold any risk and responsibility for non-visibility of scanned document or **non receipt of hardcopies** or loss in transit.
5. The Documents that are received in time will only be considered for Technical Bid Evaluation.
6. The bidder will be disqualified at any stage of the tender process, if found to have misled or furnished false information in the forms/Statement/Certificate submitted in proof.
7. The Registrar, Jiwaji University, Gwalior does not bind himself to accept the lowest or any tender and he reserve the right to reject any offer without assigning any reason.
8. If bidder does not upload any document/Certificate bidder will be disqualify.

TENDERER SEAL

Address for the CCTV, NETWORKING

Entire Campus

Jiwaji University
Gwalior- 474011 (M.P.)

Item 1:2 MP Indoor Vandal Dome Camera

Qty: 55

SN.	Features	Detailed Specifications
1.	Image Sensor	1/2.8" 2MP PS CMOS Image Sensor (0.9071 Centimeter)
2.	Minimum Illumination	0.006 Lux@F1.6(Color, 30IRE), 0.0006 Lux@F1.6(B/W, 30IRE) 0 lux (IR on)
3.	RAM	512 MB
4.	ROM	128 MB
5.	White Balance	Auto, natural, street lamp, outdoor, manual, regional custom
6.	Lens	2.7mm~13.5mm
7.	Gain Control(AGC)	Auto
8.	Lens Type	Motorized
9.	Iris Type	Fixed
10.	Max. Aperture	F1.6
11.	Lens Mount	φ14
12.	Close Focus Distance	0.8 Meter
13.	DORI Distance	W: 44.1 Meter (Detect), 17.7 Meter (Observe), 8.8 Meter (Recognize), 4.4 Meter (Identify) T: 144.8 Meter (Detect), 57.9Mtr. (Observe) 29.0Mtr. (Recognize), 14.5 Meter (Identify)
14.	Back Light Compensation	BLC / HLC / WDR(120dB)
15.	Angle of View	H: 109°-30°, V: 56°-17°, D: 131°-35°
16.	stream Capability	H.265 Quad Stream
17.	S/N Ratio	>56 Db
18.	Video Format	PAL/NTSC
19.	Video Compression	H.264+, H.265, H.264, H.264H, H.264B, MJPEG (Only supported by the sub stream)
20.	Image Stabilization	Electronic Image Stabilization (EIS)
21.	Motion detection	OFF/ON (4 areas, Rectangular)
22.	Two-Way Talk	Yes
23.	Audio Input	1Ch. (RCA port)
24.	Audio Output	1Ch. (RCA port)

25.		
26.	Audio	Built-in Mice
27.	Alarm IN	1 channels in: 5mA 3V-5V DC
28.	Alarm Out	1 channel out: 300mA 12V DC
29.		
30.	Protocol	SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP V1/ V2/ V3/, TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, ONVIF (Profile S, Profile G, Profile T), unicast, multicast
31.	IVS (Optional)	Tripwire, Intrusion, Object Abandon/ Missing, SMD, Face Detection.
32.	Alarm Event	Motion/tampering detection, audio detection, network disconnection detection, IP conflict detection, memory card state detection, memory space detection
33.	Cyber Security	AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, WSSE, account lockout, syslog, video encryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot.
34.	Mirror Function	Support
35.	Storage	SFTP, NAS, Micro SD card (Max. 512GB)
36.	IR Distance	40 Meter
37.	Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)
38.	Defog	Support
39.	Scene Self-adaptation (SSA)	Support
40.	Weatherproof Standard	IP67, IK10
41.	Operating Temperature	-30 °C to +60 °C (-22 °F to +140 °F)
42.	Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)

Item 2:2 MP IP Outdoor Bullet

CameraQty: 80

S.N#	Feature	Specification
1.	Image Sensor	1/2.8" 2MP PS CMOS Image Sensor (0.9071 centimeter)
2.	Minimum Illumination	0.006 Lux@F1.6(Color, 30IRE), 0.0006 Lux@F1.6(B/W, 30IRE) 0 lux (IR on)
3.	RAM	512 MB

4.	ROM	128 MB
5.	White Balance	Auto, Natural, Street lamp, Outdoor, Manual, Regional Custom
6.	Lens	2.7 mm–13.5 mm
7.	Gain Control (AGC)	Auto
8.	Lens Type	Motorized
9.	Iris Control	Fixed
10.	Max. Aperture	F1.6
11.	Lens Mount	φ14
12.	Close Focus Distance	0.8 Meter
13.	DORI Distance	Wide: 44.1Mtr. (Detect) 17.7Mtr. (Observe) 8.8Mtr. (Recognize), 4.4Mtr(Identify) Tele: 144.8Mtr(Detect), 57.9Mtr(Observe), 29.0Mtr(Recognize), 14.5Mtr(Identify)
14.	Back Light Compensation	BLC / HLC / WDR(120dB)
15.	Angle of View	Horizontal: 109°–30°, Vertical: 56° –17°, Diagonal: 131° –35°
16.	stream Capability	H.265 Quad Stream
17.	S/N Ratio	>56 Db
18.	Video Format	PAL/NTSC
19.	Image Stabilization	Electronic Image Stabilization (EIS)
20.	Motion detection	OFF/ON (4 areas, Rectangular)
21.	Two-Way Talk	Yes
22.	Audio Input	1Ch. (RCA port)
23.	Audio Output	1Ch. (RCA port)
24.	Audio	Built-in Mice
25.	Alarm IN	1 channels in: 5mA 3V–5V DC
26.	Alarm Out	1 channel out: 300mA 12V DC
27.	Protocol	SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP V1/ V2/ V3/, TCP/IP, PP Poe, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, ONVIF (Profile S, Profile G, Profile T), unicast, multicast
28.	IVS (Optional)	Tripwire, Intrusion, Object Abandon/ Missing, SMD, Face Detection.
29.	Alarm Event	Motion/tampering detection, audio detection, network disconnection detection, IP conflict detection, memory card state detection, memory

		space detection
30.	Cyber Security	AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, WSSE, account lockout, syslog, video encryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot.
31.	Mirror Function	Support
32.	Storage	SFTP, NAS, Micro SD card (Max. 512GB)
33.	IR Distance	60 Meter
34.	Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)
35.	Defog	Support
36.	Scene Self-adaptation (SSA)	Support
37.	Weatherproof Standard	IP67, IK10
38.	Operating Temperature	-30 °C to +60 °C (-22 °F to +140 °F)
39.		
40.	Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)

Item 3: 8 MP Outdoor Bullet Cameras

Qty: 27

S.N#	Feature	Specification
1.	Image Sensor	1/2.7" 2MP PS CMOS Image Sensor (0.9071 centimeter)
2.	Minimum Illumination	0.006 Lux@F1.6(Color, 30IRE), 0.0006 Lux@F1.6(B/W, 30IRE) 0 lux (IR on)
3.	Effective Pixels	3840 (H) × 2160 (V)
4.	Shutter Speed	Auto/Manual, 1/3s - 1/100000s
5.	RAM	512 MB
6.	ROM	128 MB
7.	White Balance	Auto, Natural, Street lamp, Outdoor, Manual, Regional Custom
8.	Lens	2.7 mm-13.5 mm
9.	Gain Control (AGC)	Auto
10.	Lens Type	Motorized
11.	Iris Control	Fixed
12.	Max. Aperture	F1.6
13.	Lens Mount	φ14

14.	Close Focus Distance	0.8 Meter
15.	DORI Distance	Wide: 44.1Mtr. (Detect) 17.7Mtr. (Observe) 8.8Mtr. (Recognize), 4.4Mtr(Identify) Tele: 144.8Mtr(Detect), 57.9Mtr(Observe), 29.0Mtr(Recognize), 14.5Mtr(Identify)
16.	Backlight Compensation	BLC / HLC / WDR(120dB)
17.	stream Capability	H.265 Quad Stream
18.	S/N Ratio	>56 dB
19.	Video Format	PAL/NTSC
20.	Resolution	8M (3840 × 2160), 5M (3072 × 1728), 5M (2592 × 1944), 4M (2688 × 1520), 3M (2048 × 1536), 3M (2304 × 1296), 2M (1920 × 1080), 1.3M (1280 × 960), 1M (1280 × 720), D1 (704 × 576/704 × 480), VGA (640 × 480), CIF (352 × 288/352 × 240)
21.	Image Stabilization	Electronic Image Stabilization (EIS)
22.	Motion detection	OFF/ON (4 areas, Rectangular)
23.	Two-Way Talk	Yes
24.	Audio Input	1Ch. (RCA port)
25.	Audio Output	1Ch. (RCA port)
26.	Audio	Built-in Mice
27.	Alarm IN	1 channels in: 5mA 3V-5V DC
28.	Alarm Out	1 channel out: 300mA 12V DC
29.	OSD	Camera title, Date & Time
30.	Protocol	SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP V1/ V2/ V3/, TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, ONVIF (Profile S, Profile G, Profile T), unicast, multicast
31.	IVS (Optional)	Tripwire, Intrusion, Object Abandon/ Missing, SMD, Face Detection.
32.	Alarm Event	Motion/tampering detection, audio detection, network disconnection detection, IP conflict detection, memory card state detection, memory space detection
33.	Cyber Security	AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, WSSE, account lockout, syslog, video encryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot.
34.	User/Host	20 (Total bandwidth: 80 Mbps)
35.	Browser	Microsoft Edge and Chrome

36.	Mirror Function	Support
37.	Storage	SFTP, NAS, Micro SD card (Max. 512GB)
38.	Frame Rate	Main stream: 8MP/5MP/4MP/2MP/1.3MP/1MP@(1-25/30 fps) Sub stream: D1/VGA/CIF@(1-10 fps) Third stream: 2MP/1.3MP/1MP@(1-15fps) Fourth stream: D1/VGA/CIF@(1-10 fps)
39.	IR Distance	60 Meter
40.		
41.	Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)
42.	Defog	Support
43.	Scene Self-adaptation (SSA)	Support
44.	Weatherproof Standard	IP67, IK10
45.	Operating Temperature	-30 °C to +60 °C (-22 °F to +140 °F)
46.	Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)

Item 4: 32 CH Network Video Recorder (NVR)

Qty: 3

SN#	Feature	Detailed Specification
1.	Processor	Industrial-grade processor
2.	IP Camera Input	32 Channel
3.	Operating System	Embedded LINUX
4.	User Interface	Web, Local GUI
5.	Video Output	2-channel VGA, 4-channel HDMI video output. Simultaneous mode: max. Resolution of VGA1 and VGA2 is 1080p, max. Resolution of HDMI1 and HDMI2 is 4K, max. Resolution of HDMI3 is 8K, max. Resolution of HDMI4 is 1080p Heterogeneous mode: Simultaneous video source output for VGA1 and HDMI1 Simultaneous video source output for VGA2 and HDMI2, max. Resolution of VGA1 and VGA2 is 1080p, max. Resolution of HDMI1, HDMI2 and HDMI3 is 4K, max. resolution of HDMI4 is 1080p
6.	Compression	H.265; Smart H.264+; H.264; MPEG4; MJPEG

7.	Decoding Capability	2-channel 32 MP@30 fps; 2-channel 24 MP@30 fps; 4-channel 16 MP@30 fps; 8-channel 8 MP@30 fps; 16-channel 4 MP@30 fps; 32-channel 1080p@30 fps; 72-channel 720P@30 fps 160-channel D1@30fps
8.	AI by NVR	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus
9.	AI by Camera	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; object monitoring
10.	Resolution	32 MP; 24 MP; 16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 1080p; 720p; D1
11.	Network Bandwidth	AI disabled: 1024 Mbps incoming, 1024 Mbps recording and 800 Mbps outgoing AI enabled: 512 Mbps incoming, 512 Mbps recording and 400 Mbps outgoing
12.	Video Display Split	Main screen: 1/4/8/9/16/25/36 ; Sub screen: 1/4/8/9/16/25/36
13.	Perimeter Performance AI by NVR (Number of Channels)	24 channels, 10 IVS rules for each channel
14.	Perimeter Performance of AI by Camera (Number of Channels)	32 channels
15.	Face Attributes	Gender; age group; glasses; expressions; face mask; beard
16.	Face Detection Performance of AI by NVR (Number of Channels)	4 channels (up to 12 face images/s each channel)
17.	Face Detection Performance of AI by Camera (Number of Channels)	32 channels
18.	Face Database Capacity	Up to 40 face databases with 300, 000 images, with a total capacity of 48 G. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image.
19.	Face Recognition Performance of AI by NVR (Number of Channels)	1. 20 channels FD (by camera) + FR (by recorder), image stream: 20 face images/s 2. 4 channels FD (by recorder) + FR (by recorder), video stream: 12 face images/s

20.	Face Recognition Performance of AI by Camera (Number of Channels)	32 channels
21.	SMD Plus by NVR	32-channel: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change
22.	SMD Plus by Camera	32 channels
23.	Metadata Performance of AI by NVR (Number of Channels)	8 channels
24.	Metadata Performance of AI by Camera (Number of Channels)	32 channels
25.	Human Attributes	Top color, top type, hat, bag, age, gender and umbrella
26.	Motor Vehicle Attributes	License plate, plate color, vehicle model, vehicle logo, plate color, ornament, calling
27.	Non-motor Vehicle Attributes	Vehicle model, vehicle color, number of persons, helmet
28.	ANPR by Camera (Number of Channels)	32 channels
29.	License Plate Database Capacity	Blacklist and allow list: 20, 000
30.	Anomaly Alarm	Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan
31.	Intelligent Alarm	Face detection; face recognition; perimeter protection (intrusion and tripwire); SMD Plus alarms; ANPR; people counting; stereo analysis; crowd distribution; heat map
32.	General Alarm	Motion detection; video tampering; video loss; scene changing, PIR alarm, IPC external alarm
33.	Alarm Linkage	Record; snapshot; IPC external alarm output; buzzer; log, preset; email
34.	Audio Input	1-channel RCA
35.	Audio Output	2-channel RCA
36.	Audio Compression	G.711a; G.711u; PCM; G726
37.	Disk Group	Support
38.	Alarm Input	16 channel
39.	Alarm Output	8 channels

40.	Hard Disk	8 SATA ports, up to 16TB each. The maximum HDD capacity varies with environment temperature
41.	Multi-channel Playback	Up to 16 channels
42.	Record Mode	Manual; alarm; motion detection; scheduled
43.	Network Mode	Multi-address mode, load balance, fault tolerance and other network port binding modes
44.	Backup Method	Portable hard drive, eSATA disk, burner, USB device and network
45.	Playback Mode	1. Play, pause, stop, fast forward, fast backward, rewind, play by frame 2. Full screen, backup (cut/file), partially enlarge, audio on/off
46.	Smart Phone	iPhone, iPad, Android Phone
47.	Hot Swapping	Support
48.	RAID	RAID 0/1/5/6/10
49.	Ethernet	2 (10/100/1000/2500 Mbps Ethernet port, RJ-45)
50.	Interface Ports	4 (2 front USB 2.0 ports, 2 rear USB 3.0 ports), 4 HDMI, 2 VGA, 1 RS232, 1 RS485, 1 eSATA Port
51.	Protocols	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; DDNS; Alarm Server; IP Search, Multicast; Insta On cloud; Auto Registration; ICMP, IGMP, RTP, ISCSI, ONVIF (Profile T; Profile S; Profile G); CGI; SD
52.	Power Supply	100–240 VAC, 50-60 Hz
53.	Power Consumption	<18 W (without HDD)
54.	Operating Temperature	-10 °C to +55 °C (14 °F to +131 °F)
55.	Operating Humidity	10%–93% (RH)
56.	Dimensions	444.0 mm × 456.6 mm x 95.0 mm (17.48" × 17.98" × 3.74") (W × D × H)
57.	Weight	6.4 kg (without HDD)

Item 5: 8 CH Network Video Recorder (NVR)

Qty: 8

SN#	Feature	Detailed Specification
1.	Processor	Industrial-grade processor
2.	IP Camera Input	8 channel
3.	Operating System	Embedded LINUX
4.	User Interface	Web, Local GUI

5.	Video Output	1-channel VGA, 1-channel HDMI video output. Heterogeneous video source output for HDMI and VGA Supports 4K display
6.	Compression	H.265; Smart H.264+; H.264; MJPEG
7.		
8.	Decoding Capability	AI disabled: 2-channel 32 MP@20 fps; 2-channel 24 MP@20 fps; 4-channel 16 MP@30 fps; 5- channel 12 MP@30 fps; 8-channel 8 MP@30 fps AI enabled: 1-channel 32 MP@20 fps; 1- channel 24 MP@20 fps; 2-channel 16 MP@30 fps; 4-channel 12 MP@30 fps;4-channel 8 MP@30 fps; 8-channel 5 MP@30fps
9.	AI by NVR	Face detection; face recognition; perimeter protection; SMD Plus
10.	AI by Camera	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); perimeter protection; SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map
11.	Resolution	32 MP; 24 MP; 16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 1080p; 720p; D1; CIF; QCIF
12.	Network Bandwidth	AI disabled: 384 Mbps incoming, 384 Mbps recording and 384 Mbps outgoing AI enabled: 200 Mbps incoming, 200 Mbps recording and 200 Mbps outgoing
13.	Video Display Split	Main screen: 1/4/8/9, Sub screen: 1/4/8/9
14.	Perimeter Performance AI by NVR (Number of Channels)	4 channels, 10 IVS rules for each channel
15.	Perimeter Performance of AI by Camera (Number of Channels)	8 channels
16.	Face Attributes	Gender; age group; glasses; expressions; face mask; beard
17.	Face Detection Performance of AI by Recorder (Number of Channels)	2 channels (up to 12 face images/s each channel)
18.	Face Detection Performance of AI by Camera (Number of Channels)	8 channels
19.	Face Database Capacity	Up to 20 face databases with 20, 000 images, with a total capacity of 2.5 G. Name, gender,

		birthday, address, credential type, credential No., countries & regions and state can be added to each face image.
20.	Face Recognition Performance of AI by NVR (Number of Channels)	1. 8-channel FD (by camera) + FR (by nvr), image stream: 16 face images/s 2. 2-channel FD (by nvr) + FR (by nvr), video stream: 12 face images/s
21.	Face Recognition Performance of AI by Camera (Number of Channels)	8 channels
22.	SMD Plus by NVR	8 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change
23.	SMD Plus by Camera	8 channels
24.	Metadata Performance of AI by Camera (Number of Channels)	8 channels
25.	Human Attributes	Top color, top type, bottom color, bottom type, hat, bag, age, gender and umbrella
26.	Motor Vehicle Attributes	License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle interior, vehicle registration location
27.	Non-motor Vehicle Attributes	Vehicle model, vehicle color, number of persons, helmet
28.	ANPR by Camera (Number of Channels)	8 channels
29.	License Plate Database Capacity	1. Create up to 20, 000 plate numbers. 2. Block list and allow list
30.	Anomaly Alarm	Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan; cyber security exception
31.	Intelligent Alarm	Face detection; perimeter protection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map
32.	General Alarm	Motion detection; privacy masking; local alarm
33.	Alarm Linkage	Record; snapshot (panoramic); local alarm output; IPC external alarm output; access controller; audio; buzzer; log, preset; email
34.	Audio Input	1-channel RCA
35.	Audio Output	1-channel RCA
36.	Audio Compression	G.711a; G.711u; PCM; G726

37.	Disk Group	Support
38.	Alarm Input	4 channel
39.	Alarm Output	2 channel
40.	Hard Disk	2 SATA ports, up to 16TB. The maximum HDD capacity varies with environment temperature
41.	Multi-channel Playback	Up to 8 channels
42.	Record Mode	General, motion detection; intelligent; alarm; POS
43.	Backup Method	USB device and network
44.	Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback (face and motion detection)
45.	Smart Phone	iPhone, iPad, Android Phone
46.	Bit Rate	16Kbps ~ 20Mbps Per Channel
47.	Sync Playback	1/4/9
48.	Playback	Play, Pause, Stop, Rewind, Fast play, Slow play, Next file, Previous file, Next camera, Previous camera, Full screen, Repeat, Shuffle, Backup selection, Digital zoom
49.	Backup Mode	USB Device/Network
50.	Interface Ports	2 USB Ports (1 Rear USB 3.0, 1 Front USB 2.0), 1 RS232, 1 RS485
51.	Protocols	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; DDNS; Alarm Server; IP Search, Multicast; InstaOn cloud; Auto Registration, ONVIF 21.12(Profile T; Profile S; Profile G); CGI; SDK
52.	Ethernet	1 x (10/100/1000 Mbps Ethernet port, RJ-45)
53.	Power Supply	12 VDC, 4Amp
54.	Power Consumption	≤ 10 W (without HDD)
55.	Operating Temperature	-10 °C to +55 °C (14 °F to +131 °F)
56.	Operating Humidity	10%–93% (RH)
57.	Storage Temperature	-20 °C to +60 °C (-4 °F to +140 °F)
58.	Dimensions& Weight	375.0 mm × 284.4 mm x 56.0mm (14.76" × 11.20" × 2.20") (W × D × H) 1.57kg (without HDD)

Item 6: 16+2 Port Giga Switch

Qty: 10

SN#	Feature	Detailed Specification
1.	Uplink Ports	2, 1000Mbps; Transmission Distance: 0-100m
2.	Network Standard	IEEE802.3i/802.3u/802.3x/802.3ab

3.	Switch Capacity	12 Gbps Full duplex
4.	Packet Forwarding Rate	1.488Mpps/port
5.	PoE Ports	4, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port Transmission distance:0~100m
6.	Network Ports	6
7.	MAC Address Table	2K
8.	Transmission Distance	0-100m/100Mbps
9.	PoE Standard	IEEE802.3af, IEEE802.3at
10.	PoE Power Supply	1/2(+), 3/6(-)
11.	PoE Power Budget	48W
12.	PoE Feature	All ports support MDI/MDIX
13.	VLAN	Support
14.	Watchdog	Support
15.	Power Indicator	Light on: Powering Light off: No Power
16.	VLAN Indicator	Green light on: VLAN mode Light off: normal mode
17.	Port 1-10 indicator	Light off: Link is disconnected Red light on: Powering but data disconnected Light flash quickly: Data Transmitting
18.	Forwarding Mode	Store-and-forward
19.	ESD	Air discharge: 1.5KV Contact discharge: 1.5KV
20.	Anti-Thunder Level	Common mode: 2KV Differential mode: 2KV
21.	Power Source	Built-in Power Supply, Input: 100-240V AC, 50/60Hz
22.	Power Consumption	<5W
23.	Operating Temperature	-10°C 50°C
24.	Storage Temperature	-40°C~70°C
25.	Humidity	10%-95%, non-condensing
26.	Color	Black
27.	Dimensions & Weight	202mm x 140mm x 45mm (L x W x H) 0.7Kg (not include input cable & packaging)

Item 7: 8+2 Port Giga Switch

Qty: 18

SN#	Feature	Detailed Specification
1.	Uplink Ports	2 x 1000Mbps RJ45 ports + 2 x 1000Mbps SFP ports
2.	Network Standard	IEEE802.3i/802.3u/802.3x/802.3af/802.3ab/ IEEE 802
3.	Switch Capacity	24Gbps Full duplex
4.	Packet Forwarding Rate	1.488Mpps/port

5.	PoE Ports	8, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port
6.	Network Ports	12 port
7.	Transmission Distance	0-100m/1000Mbps or Port 7-8 Max. 250m/10Mbps via Cat.5e or more under Extend mode
8.	MAC Address List	2k
9.	PoE Feature	All ports support MDI/MDI
10.	PoE Standard	IEEE802.3af, IEEE802.3at
11.	PoE watchdog	Supported
12.	PoE Power Supply	1/2(+), 3/6(-)
13.	PoE Power Budget	96W
14.	Ethernet Port Light	Green light off: Link is disconnected Green light on: Link is connected Green light flash: Data Transmitting
15.	Surge Protection	Common mode/RJ45 port: 4KV Differential mode/RJ45 port: 2KV Common mode/Power board: 2K Differential mode/Power board: 2KV
16.	Forwarding Mode	Store-and-forward
17.	Power Source	Input: 100-240V AC, 50/60Hz, Bult-in Power Supply
18.	Operating Temperature	-10°C ~50°C
19.	Power Consumption	<5W
20.	LEDs Indicator	Light on: Power On Light off: No Power
21.	Storage Temperature	-40°C ~70°C
22.	ESD	Air discharge: 8KV Contact discharge: 6KV
23.	Humidity	10%-95%, non condensing
24.	Dimensions	220 x 161 x 44 mm
25.	Color	Black
26.	Weight	0.95 Kg (without packaging)

Item 8: 4+2 Port Giga Switch

Qty: 04

SN#	Feature	Detailed Specification
1.	Uplink Ports	2, 1000Mbps; Transmission Distance: 0-100m
2.	Network Standard	IEEE802.3i/802.3u/802.3x/802.3ab
3.	Switch Capacity	12 Gbps Full duplex
4.	Packet Forwarding Rate	1.488Mpps/port
5.	PoE Ports	4, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port Transmission distance:0~100m

6.	Network Ports	6
7.	MAC Address Table	2K
8.	Transmission Distance	0-100m/100Mbps
9.	PoE Standard	IEEE802.3af, IEEE802.3at
10.	PoE Power Supply	1/2(+), 3/6(-)
11.	PoE Power Budget	48W
12.	PoE Feature	All ports support MDI/MDIX
13.	VLAN	Support
14.	Watchdog	Support
15.	Power Indicator	Light on: Powering Light off: No Power
16.	VLAN Indicator	Green light on: VLAN mode Light off: normal mode
17.	Port 1-10 indicator	Light off: Link is disconnected Red light on: Powering but data disconnected Light flash quickly: Data Transmitting
18.	Forwarding Mode	Store-and-forward

Item 9: 6 U Network Rack with Accessories

Qty-3

SN#	Features	Detailed Specifications
1.	PDU 5Amp/6 Socket - 1 Pc, Cooling Fan - 1 Pcs, Cantilever Tray (220mm Depth) DIN RAIL - 1 Pc	W*D*H=550*500*6U

Item 10: 4 U Network Rack with Accessories

Qty-28

SN#	Features	Detailed Specifications
1.	1U Cantilever Tray (220mm Depth): 1 No. ,3 Socket PDU 5 Amp: 1 No.	W*D*H=550*400*240

Item 11: Cat 6 Cable (Double Jacket)**Qty-30**

SN#	Feature	Detailed Specification
1.	Conduct Type	Solid Bare Electrolytic Grade Copper
2.	Nominal Conductor Diameter	24 AWG (0.48mm ± 0.020mm)
3.	Insulation	Polyethylene (HDPE)
4.	Separator	Each pair separated with a cross separator
5.	Pairing	2 insulated conductors twisted together
6.	Inner Jacket	PVC
7.	Outer Jacket	PE
8.	Colour of Jacket	Black
9.	Approximate OD	5.8mm ± 0.1mm
10.	Thickness of Outer Jacket	0.55mm ± .05mm
11.	Thickness of Inner Jacket	0.45mm ± .05mm
12.	Impedance	100±15% Ω
13.	Rip Cord	No
14.	Sequential Marking	Every Meter
15.	Characteristic Impedance	100 ±15Ω
16.	Nominal Velocity of Propagation	69%
17.	Resistance Unbalance	5% Max
18.	Conductor Resistance	≤9.38/100m
19.	Resistance Unbalance	5% Max
20.	Capacitance Unbalance	330pF/100m
21.	Bending Radius	< 8 x Cable Diameter at -20° ±1°C
22.	Delay Skew	<45 Ns
23.	Mutual Capacitance	<5.6nf/100m
24.	Packing	305 Metres
25.	Temperature Rating	-15 to 60°C
26.	Storage Temperature	-15 to 60°C
27.	Pulling Force	11.5Kg

Item 12:**Technical Specifications for firewall upgraded up to 250 Users****Qty: 01**

S. No	Features of Firewall
1	The Firewall must be appliance based and should facilitate multiuser environment which should support current network traffic as well as future growth

2	Firewall appliance should be supplied with at least 6 x GE RJ45 ports, 1 x RJ45 and shared media WAN ports. In addition, it should have dedicated 1GE RJ-45 interfaces for Management and, 1 x USB Port
3	Firewall should support at least 250 users support.
4	The Firewall solution should support dynamic NAT, PAT, DHCP, DNS.
5	The proposed system shall be able to operate on either Transparent (bridge) mode to minimize interruption to existing network infrastructure or NAT/Route mode.
6	The physical interface shall be capable of link aggregation, otherwise known as the IEEE 802.3ad standard, allows the grouping of interfaces into a larger bandwidth 'trunk'.
7	The proposed system should have integrated Traffic Shaping functionality
8	The proposed system should support
	a) IPSEC VPN
	b) SSL VPN
	c) PPTP VPN
	d) L2TP VPN
9	Should support Route-based VPN
10	Should support automatic ISP failover as well as ISP load sharing
11	Firewall should have capability of intelligent routing and failover of traffic on ISP links based on Application Visibility and link Performance SLAs
12	The firewall should support static, policy base, identity based, Multicast routing and dynamic routing.
13	HTTP, HTTPS, SMTP, SMTPs, POP3, POP3s, IMAP, FTP etc.
14	Should support Policy based routing (PBR)
15	Should support Net flow exportation
16	The proposed system should be able to block or allow file size based on configurable thresholds in web policy.
17	Should have Anti-Spam Capability to detect and block Spam Emails over IMAP, SMTP, POP3, MAPI
18	Should have Web Filter Capability
19	Should have App base control
20	Should have Keyword-based web filtering
21	Should have Adware protection
22	Should have Malware protection
23	Should have IoT safeguard
24	Should have DDoS prevention
25	Should have Access control list (ACL) and filtering

26	Should have Stateful firewall
27	Web filtering should support local categories & category rating override to customize the filters.
28	Should have Custom category (IP, port, domain
29	Should have Time scheduling and time quota
30	Should have Advanced NAT
31	Should have MAC binding/IP reserving
32	Logging & reporting
33	Should have Central management portal
34	Should support Log Forwarding to an external device/syslog server
35	Warranty and Support
36	The proposed solution should be quoted with 5 years support from OEM for regular Firmware Updates and 24x7 TAC Support
37	OEM should have UK CA, CE, RoHS, IP40 Certificates.

Hardware Specification of firewall

S. No	Description	Parameter Value
1	Power consumption	35 W
2	Humidity	5-95%
3	Storage temperature	40oC ~ +70oC
4	Operating temperature	0oC ~ 40oC
Hardware specification		
6	Dimension	430x280x45 mm
7	Weight	3.5 kg
8	Mounting	Desktop
9	Ethernet interface	6xGbe RJ45
10	USB	2xUSB 2.0
11	Console	Yes
12	Power	AC 100-240V ~ 50/60Hz 13A

Item 13: Optical Fiber Cable

Qty:1500 meter

SN#	Features	Detailed Specifications
1.	Cable Type	Optical Fiber Cable, 6 Core, SM

Item 14: 6 Port LIU

Qty: 2 No.

SN#	Features	Detailed Specifications
1.	Material	Cold Rolled Sheet 1.2 mm
2.	Thickness	1.4 mm
3.	Operating Temperature	40°C to +85°C

Item 15:2 Port LIU

Qty: 14 No.

SN#	Features	Detailed Specifications
1.	Material	Cold Rolled Sheet 1.2 mm
2.	Thickness	1.4 mm
3.	Operating Temperature	-40°C to +85°C

Item 16: SC Pigtail/Coupler

Qty.24 No

SN#	Features	Detailed Specifications
1.	Requirement	As per onsite requirement

Item 17 : Optical Fiber Patch Cord, SM, 3M

Qty:10 Nos

SN#	Features	Detailed Specifications
1.	Fiber Type	Single Mode
2.	Polishing	UPC, APC
3.	Connector	FC, LC, SC, ST, E2000..and so on

Item 18:1/100 MEDIA CONVERTER

Qty:10 Nos

SN#	Features	Detailed Specifications
1.	Network Speed	10/100/1000 Mbps
2.	Fiber Type	Single Mode
3.	Dimension (W x H x D)	140mm*110*30mm

Item 19: Wireless access Point POE Based**Qty:12**

SN#	Features	Specifications
1.	Frequency band	2.4 GHz, 5 GHz
2.	Wireless standards	IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, IEEE 802.11ac
3.	2.4 GHz data rate	1 - 300 Mbps
4.	5 GHz data rate	6 - 867 Mbps
5.	Ethernet port	1*10/100/1000 Base-TX port
6.	Button	1*Reset
7.	LED indicator	1*SYS
8.	Water proof level	IP65
9.	Lightning protection	6000 V
10.	Max. power consumption	11.5 W (Full-load)
11.	Power supply standard	IEEE 802.3af/at & 24V, 0.5A Passive PoE
12.	Antenna	2*5dBi, RP-SMA Connector
13.	2.4 GHz Max. output power	26 +/- 1.5 dBm
14.	2.4 GHz 802.11n (MCS7) RX sensitivity	26 +/- 1.5 dBm
15.	5 GHz Max. output power	26 +/-1.5 dBm
16.	802.11b RX sensitivity	-93 dBm
17.	2.4 GHz 802.11n (MCS7) RX sensitivity	-72 dBm
18.	5 GHz 802.11a RX sensitivity	-93 dBm
19.	5 GHz 802.11n (MCS7) RX sensitivity	-74 dBm
Software Specifications		
1.	Operating modes	AP, Client+AP
2.	Max. No. of SSID	2.4 GHz: 8, 5 GHz: 4
3.	Hide SSID	Supported

4.	WEP	Supported
5.	WPA	-PSK AES/TKIP
6.	Max. connected clients	2.4 GHz upto128, 5 GHz up to 256

Item 20 : GI Pole

Qty: 10

S.N#	Technical Specifications
1.	GI Pole, 12 Feet height, 50mm Dia with RCC Foundation

Item 21 : PVC Conduit

Qty: 3600 Meter

S.N#	Technical Specifications	Qty	Unit
1.	PVC Conduit / Channel / Pipe, 25 mm	3600	Meter

Item :22 HDPE Pipe

Qty: 1100 Meter

S.N#	Technical Specifications	Qty	Unit
1.	HDPE Pipe, 25mm	1100	Meter

Item: 23 Hard Disk 4 TB

Qty:18 Nos

S.N#	Technical Specifications	Qty	Unit
1.	4TB Hard Disk Drive (SATA) (Surveillance)	18	Nos

Item: 24 Cat6 I/O Box Complete

Qty:60 Nos

S.N#	Technical Specifications	Qty	Unit
1.	Cat6 I/O Box Complete	60	Nos

Item: 25 Interactive Display Panel 75 Inch

Qty:1 Nos

Feature	Specification
Display Size	75 inch
Aspect Ratio	16:9
Backlight	DLED
Resolution	3840 x 2160 (4K)
Effective Display Area	75": 1650 x 928 mm
Brightness	350 Cd/m ² ;
Contrast Ratio	Static Contrast: VA: 4000(typ.); IPS: 1200(typ.)
Response Time	Display : 8ms, Touch screen : ≤6ms
Glass Thickness	4MM AG
Display Color	1.07Billion
Viewing Angle	178°(H)/178°(V)
Refresh Rate	60 Hz
Surface Hardness	>7H
Haze	4-8%
Transparency	88%±3
Attachment Method	Zero Bonding
Surface Treatment	Anti-Glare
Screen sharing	E-share not activated, need to be charged
Color gamut	72%NTSC
BT	BT 5.0
Operating System	Android 13
CPU	A55 x 4
CPU Frequency	1.9 G
GPU	Mali G52 MP2
supportive system	Windows, Mac, Android, Linux, Chrome
Feature	Specification
RAM &	8 GB
ROM	32 GB(Optional 128GB)
Wi-Fi	Wi-Fi 5 802.11a/b/g/n/ac

Lifespan	≥50000 hours
Ports	Front: USB2.0 Type-B*1 USB3.0 Type-A *3 TYPE-C*1 (USB) HDMI IN *1 (4K 60fps) Rear: USB2.0 Type-A*1 USB3.0 Type-A *1 HDMI IN*2 (4K 60fps) RS232*1 USB Touch Type-B 2.0 *1 AV IN *1 AV OUT *1 Audio Out 3.5MM*1 SPDIF OUT Coax*1 RJ45*1 OPS slot*1
Touch Technology Type	IR
Touch Points	Android 20 Windows 40
Valid Touch	Φ 2mm
Writing Mode	Finger + Pen
Speaker Power	15W*2
Built-in Speaker	2
Number of Microphones	8 Mice
Installation	Wall mount; mobile bracket
Power Supply	AC100-240V
Casing	Metal
Dimensions	1707.52mm x 1012.8mm x 116.5mm
Weight	53KG±1

Item: 26 AMC

S.N#	Technical Specifications	Qty	Unit
1.	5 Years AMC Charges after expiry of 1 Y warranty period of the supplied items	01	Job

Item: 27 AMC

S.N#	Technical Specifications	Qty	Unit
1.	6 Years AMC Charges for existing CCTV Security System (Complete CCTV/ Network System)	01	Job

Technical Compliance Sheet

Item 1:2 MP Indoor Vandal Dome Camera

Qty: 55

SN.	Features	Detailed Specifications	Compliance Yes/No
1.	Image Sensor	1/2.8" 2MP PS CMOS Image Sensor (0.9071 Centimeter)	
2.	Minimum Illumination	0.006 Lux@F1.6(Color, 30IRE), 0.0006 Lux@F1.6(B/W, 30IRE) 0 lux (IR on)	
3.	RAM	512 MB	
4.	ROM	128 MB	
5.	White Balance	Auto, natural, street lamp, outdoor, manual, regional custom	
6.	Lens	2.7mm~13.5mm	
7.	Gain Control(AGC)	Auto	
8.	Lens Type	Motorized	
9.	Iris Type	Fixed	
10.	Max. Aperture	F1.6	
11.	Lens Mount	φ14	
12.	Close Focus Distance	0.8 Meter	
13.	DORI Distance	W: 44.1 Meter (Detect), 17.7 Meter (Observe), 8.8 Meter (Recognize), 4.4 Meter (Identify) T: 144.8 Meter (Detect), 57.9Mtr. (Observe) 29.0Mtr. (Recognize), 14.5 Meter (Identify)	
14.	Back Light Compensation	BLC / HLC / WDR(120dB)	
15.	Angle of View	H: 109°-30°, V: 56°-17°, D: 131°-35°	
16.	stream Capability	H.265 Quad Stream	
17.	S/N Ratio	>56 Db	
18.	Video Format	PAL/NTSC	
19.	Video Compression	H.264+, H.265, H.264, H.264H, H.264B, MJPEG (Only supported by the sub stream)	
20.	Image Stabilization	Electronic Image Stabilization (EIS)	
21.	Motion detection	OFF/ON (4 areas, Rectangular)	

22.	Two-Way Talk	Yes	
23.	Audio Input	1Ch. (RCA port)	
24.	Audio Output	1Ch. (RCA port)	
25.			
26.	Audio	Built-in Mice	
27.	Alarm IN	1 channels in: 5mA 3V-5V DC	
28.	Alarm Out	1 channel out: 300mA 12V DC	
29.			
30.	Protocol	SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP V1/ V2/ V3/, TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, ONVIF (Profile S, Profile G, Profile T), unicast, multicast	
31.	IVS (Optional)	Tripwire, Intrusion, Object Abandon/ Missing, SMD, Face Detection.	
32.	Alarm Event	Motion/tampering detection, audio detection, network disconnection detection, IP conflict detection, memory card state detection, memory space detection	
33.	Cyber Security	AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, WSSE, account lockout, syslog, video encryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot.	
34.	Mirror Function	Support	
35.	Storage	SFTP, NAS, Micro SD card (Max. 512GB)	
36.	IR Distance	40 Meter	
37.	Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)	
38.	Defog	Support	
39.	Scene Self-adaptation (SSA)	Support	
40.	Weatherproof Standard	IP67, IK10	
41.	Operating Temperature	-30 °C to +60 °C (-22 °F to +140 °F)	
42.	Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)	

Item 2: 2 MP IP Outdoor Bullet Camera**Qty: 80**

S.N#	Feature	Specification	Compliance Yes/No
1.	Image Sensor	1/2.8" 2MP PS CMOS Image Sensor (0.9071 centimeter)	
2.	Minimum Illumination	0.006 Lux@F1.6(Color, 30IRE), 0.0006 Lux@F1.6(B/W, 30IRE) 0 lux (IR on)	
3.	RAM	512 MB	
4.	ROM	128 MB	
5.	White Balance	Auto, Natural, Street lamp, Outdoor, Manual, Regional Custom	
6.	Lens	2.7 mm–13.5 mm	
7.	Gain Control (AGC)	Auto	
8.	Lens Type	Motorized	
9.	Iris Control	Fixed	
10.	Max. Aperture	F1.6	
11.	Lens Mount	φ14	
12.	Close Focus Distance	0.8 Meter	
13.	DORI Distance	Wide: 44.1Mtr. (Detect) 17.7Mtr. (Observe) 8.8Mtr. (Recognize), 4.4Mtr(Identify) Tele: 144.8Mtr(Detect), 57.9Mtr(Observe), 29.0Mtr(Recognize), 14.5Mtr(Identify)	
14.	Back Light Compensation	BLC / HLC / WDR(120dB)	
15.	Angle of View	Horizontal: 109°–30°, Vertical: 56° –17°, Diagonal: 131° –35°	
16.	stream Capability	H.265 Quad Stream	
17.	S/N Ratio	>56 Db	
18.	Video Format	PAL/NTSC	
19.	Image Stabilization	Electronic Image Stabilization (EIS)	
20.	Motion detection	OFF/ON (4 areas, Rectangular)	
21.	Two-Way Talk	Yes	
22.	Audio Input	1Ch. (RCA port)	
23.	Audio Output	1Ch. (RCA port)	
24.	Audio	Built-in Mice	

25.	Alarm IN	1 channels in: 5mA 3V-5V DC	
26.	Alarm Out	1 channel out: 300mA 12V DC	
27.	Protocol	SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP V1/ V2/ V3/, TCP/IP, PP Poe, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, ONVIF (Profile S, Profile G, Profile T), unicast, multicast	
28.	IVS (Optional)	Tripwire, Intrusion, Object Abandon/ Missing, SMD, Face Detection.	
29.	Alarm Event	Motion/tampering detection, audio detection, network disconnection detection, IP conflict detection, memory card state detection, memory space detection	
30.	Cyber Security	AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, WSSE, account lockout, syslog, video encryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot.	
31.	Mirror Function	Support	
32.	Storage	SFTP, NAS, Micro SD card (Max. 512GB)	
33.	IR Distance	60 Meter	
34.	Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)	
35.	Defog	Support	
36.	Scene Self-adaptation (SSA)	Support	
37.	Weatherproof Standard	IP67, IK10	
38.	Operating Temperature	-30 °C to +60 °C (-22 °F to +140 °F)	
39.			
40.	Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)	

Item 3: 8 MP Outdoor Bullet Cameras

Qty: 27

S.N#	Feature	Specification	Compliance Yes/No
1.	Image Sensor	1/2.7" 2MP PS CMOS Image Sensor (0.9071 centimeter)	
2.	Minimum Illumination	0.006 Lux@F1.6(Color, 30IRE), 0.0006 Lux@F1.6(B/W, 30IRE) 0 lux (IR on)	
3.	Effective Pixels	3840 (H) × 2160 (V)	
4.	Shutter Speed	Auto/Manual, 1/3s - 1/100000s	
5.	RAM	512 MB	
6.	ROM	128 MB	
7.	White Balance	Auto, Natural, Street lamp, Outdoor, Manual, Regional Custom	
8.	Lens	2.7 mm–13.5 mm	
9.	Gain Control (AGC)	Auto	
10.	Lens Type	Motorized	
11.	Iris Control	Fixed	
12.	Max. Aperture	F1.6	
13.	Lens Mount	φ14	
14.	Close Focus Distance	0.8 Meter	
15.	DORI Distance	Wide: 44.1Mtr. (Detect) 17.7Mtr. (Observe) 8.8Mtr. (Recognize), 4.4Mtr(Identify) Tele: 144.8Mtr(Detect), 57.9Mtr(Observe), 29.0Mtr(Recognize), 14.5Mtr(Identify)	
16.	Backlight Compensation	BLC / HLC / WDR(120dB)	
17.	stream Capability	H.265 Quad Stream	
18.	S/N Ratio	>56 dB	
19.	Video Format	PAL/NTSC	
20.	Resolution	8M (3840 × 2160), 5M (3072 × 1728), 5M (2592 × 1944), 4M (2688 × 1520), 3M (2048 × 1536), 3M (2304 × 1296), 2M (1920 × 1080), 1.3M (1280 × 960), 1M (1280 × 720), D1 (704 × 576/704 × 480), VGA (640 × 480), CIF (352 × 288/352 × 240)	
21.	Image Stabilization	Electronic Image Stabilization (EIS)	

22.	Motion detection	OFF/ON (4 areas, Rectangular)	
23.	Two-Way Talk	Yes	
24.	Audio Input	1Ch. (RCA port)	
25.	Audio Output	1Ch. (RCA port)	
26.	Audio	Built-in Mice	
27.	Alarm IN	1 channels in: 5mA 3V-5V DC	
28.	Alarm Out	1 channel out: 300mA 12V DC	
29.	OSD	Camera title, Date & Time	
30.	Protocol	SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP V1/ V2/ V3/, TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, ONVIF (Profile S, Profile G, Profile T), unicast, multicast	
31.	IVS (Optional)	Tripwire, Intrusion, Object Abandon/ Missing, SMD, Face Detection.	
32.	Alarm Event	Motion/tampering detection, audio detection, network disconnection detection, IP conflict detection, memory card state detection, memory space detection	
33.	Cyber Security	AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, WSSE, account lockout, syslog, video encryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot.	
34.	User/Host	20 (Total bandwidth: 80 Mbps)	
35.	Browser	Microsoft Edge and Chrome	
36.	Mirror Function	Support	
37.	Storage	SFTP, NAS, Micro SD card (Max. 512GB)	
38.	Frame Rate	Main stream: 8MP/5MP/4MP/2MP/1.3MP/1MP@(1-25/30 fps) Sub stream: D1/VGA/CIF@(1-10 fps) Third stream: 2MP/1.3MP/1MP@(1-15fps) Fourth stream: D1/VGA/CIF@(1-10 fps)	
39.	IR Distance	60 Meter	
40.			
41.	Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)	

42.	Defog	Support	
43.	Scene Self-adaptation (SSA)	Support	
44.	Weatherproof Standard	IP67, IK10	
45.	Operating Temperature	-30 °C to +60 °C (-22 °F to +140 °F)	
46.	Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)	

Item 4: 32 CH Network Video Recorder (NVR)

Qty: 3

SN#	Feature	Detailed Specification	Compliance Yes/No
1.	Processor	Industrial-grade processor	
2.	IP Camera Input	32 Channel	
3.	Operating System	Embedded LINUX	
4.	User Interface	Web, Local GUI	
5.	Video Output	2-channel VGA, 4-channel HDMI video output. Simultaneous mode: max. Resolution of VGA1 and VGA2 is 1080p, max. Resolution of HDMI1 and HDMI2 is 4K, max. Resolution of HDMI3 is 8K, max. Resolution of HDMI4 is 1080p Heterogeneous mode: Simultaneous video source output for VGA1 and HDMI1 Simultaneous video source output for VGA2 and HDMI2, max. Resolution of VGA1 and VGA2 is 1080p, max. Resolution of HDMI1, HDMI2 and HDMI3 is 4K, max. resolution of HDMI4 is 1080p	
6.	Compression	H.265; Smart H.264+; H.264; MPEG4; MJPEG	
7.	Decoding Capability	2-channel 32 MP@30 fps; 2-channel 24 MP@30 fps; 4-channel 16 MP@30 fps; 8-channel 8 MP@30 fps; 16-channel 4 MP@30 fps; 32-channel 1080p@30 fps; 72-channel 720P@30 fps 160-channel D1@30fps	

8.	AI by NVR	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus	
9.	AI by Camera	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; object monitoring	
10.	Resolution	32 MP; 24 MP; 16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 1080p; 720p; D1	
11.	Network Bandwidth	AI disabled: 1024 Mbps incoming, 1024 Mbps recording and 800 Mbps outgoing AI enabled: 512 Mbps incoming, 512 Mbps recording and 400 Mbps outgoing	
12.	Video Display Split	Main screen: 1/4/8/9/16/25/36 ; Sub screen: 1/4/8/9/16/25/36	
13.	Perimeter Performance AI by NVR (Number of Channels)	24 channels, 10 IVS rules for each channel	
14.	Perimeter Performance of AI by Camera (Number of Channels)	32 channels	
15.	Face Attributes	Gender; age group; glasses; expressions; face mask; beard	
16.	Face Detection Performance of AI by NVR (Number of Channels)	4 channels (up to 12 face images/s each channel)	
17.	Face Detection Performance of AI by Camera (Number of Channels)	32 channels	
18.	Face Database Capacity	Up to 40 face databases with 300, 000 images, with a total capacity of 48 G. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image.	

19.	Face Recognition Performance of AI by NVR (Number of Channels)	1. 20 channels FD (by camera) + FR (by recorder), image stream: 20 face images/s 2. 4 channels FD (by recorder) + FR (by recorder), video stream: 12 face images/s	
20.	Face Recognition Performance of AI by Camera (Number of Channels)	32 channels	
21.	SMD Plus by NVR	32-channel: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change	
22.	SMD Plus by Camera	32 channels	
23.	Metadata Performance of AI by NVR (Number of Channels)	8 channels	
24.	Metadata Performance of AI by Camera (Number of Channels)	32 channels	
25.	Human Attributes	Top color, top type, hat, bag, age, gender and umbrella	
26.	Motor Vehicle Attributes	License plate, plate color, vehicle model, vehicle logo, plate color, ornament, calling	
27.	Non-motor Vehicle Attributes	Vehicle model, vehicle color, number of persons, helmet	
28.	ANPR by Camera (Number of Channels)	32 channels	
29.	License Plate Database Capacity	Blacklist and allow list: 20, 000	
30.	Anomaly Alarm	Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan	
31.	Intelligent Alarm	Face detection; face recognition; perimeter protection (intrusion and tripwire); SMD Plus alarms; ANPR;	

		people counting; stereo analysis; crowd distribution; heat map	
32.	General Alarm	Motion detection; video tampering; video loss; scene changing, PIR alarm, IPC external alarm	
33.	Alarm Linkage	Record; snapshot; IPC external alarm output; buzzer; log, preset; email	
34.	Audio Input	1-channel RCA	
35.	Audio Output	2-channel RCA	
36.	Audio Compression	G.711a; G.711u; PCM; G726	
37.	Disk Group	Support	
38.	Alarm Input	16 channel	
39.	Alarm Output	8 channels	
40.	Hard Disk	8 SATA ports, up to 16TB each. The maximum HDD capacity varies with environment temperature	
41.	Multi-channel Playback	Up to 16 channels	
42.	Record Mode	Manual; alarm; motion detection; scheduled	
43.	Network Mode	Multi-address mode, load balance, fault tolerance and other network port binding modes	
44.	Backup Method	Portable hard drive, eSATA disk, burner, USB device and network	
45.	Playback Mode	1. Play, pause, stop, fast forward, fast backward, rewind, play by frame 2. Full screen, backup (cut/file), partially enlarge, audio on/off	
46.	Smart Phone	iPhone, iPad, Android Phone	
47.	Hot Swapping	Support	
48.	RAID	RAID 0/1/5/6/10	
49.	Ethernet	2 (10/100/1000/2500 Mbps Ethernet port, RJ-45)	
50.	Interface Ports	4 (2 front USB 2.0 ports, 2 rear USB 3.0 ports), 4 HDMI, 2 VGA, 1 RS232, 1 RS485, 1 eSATA Port	
51.	Protocols	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; DDNS; Alarm Server; IP Search, Multicast; Insta On cloud; Auto	

		Registration; ICMP, IGMP, RTP, ISCSI, ONVIF (Profile T; Profile S; Profile G); CGI; SD	
52.	Power Supply	100–240 VAC, 50-60 Hz	
53.	Power Consumption	<18 W (without HDD)	
54.	Operating Temperature	-10 °C to +55 °C (14 °F to +131 °F)	
55.	Operating Humidity	10%–93% (RH)	
56.	Dimensions	444.0 mm × 456.6 mm x 95.0 mm (17.48" × 17.98" × 3.74") (W × D × H)	
57.	Weight	6.4 kg (without HDD)	

Item 5: 8 CH Network Video Recorder (NVR)

Qty: 8

SN#	Feature	Detailed Specification	Compliance Yes/No
1.	Processor	Industrial-grade processor	
2.	IP Camera Input	8 channel	
3.	Operating System	Embedded LINUX	
4.	User Interface	Web, Local GUI	
5.	Video Output	1-channel VGA, 1-channel HDMI video output. Heterogeneous video source output for HDMI and VGA Supports 4K display	
6.	Compression	H.265; Smart H.264+; H.264; MJPEG	
7.			
8.	Decoding Capability	AI disabled: 2-channel 32 MP@20 fps; 2-channel 24 MP@20 fps; 4-channel 16 MP@30 fps; 5- channel 12 MP@30 fps; 8-channel 8 MP@30 fps AI enabled: 1- channel 32 MP@20 fps; 1- channel 24 MP@20 fps; 2-channel 16 MP@30 fps; 4-channel 12 MP@30 fps; 4- channel 8 MP@30 fps; 8-channel 5 MP@30fps	
9.	AI by NVR	Face detection; face recognition; perimeter protection; SMD Plus	
10.	AI by Camera	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); perimeter protection; SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map	

11.	Resolution	32 MP; 24 MP; 16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 1080p; 720p; D1; CIF; QCIF	
12.	Network Bandwidth	AI disabled: 384 Mbps incoming, 384 Mbps recording and 384 Mbps outgoing AI enabled: 200 Mbps incoming, 200 Mbps recording and 200 Mbps outgoing	
13.	Video Display Split	Main screen: 1/4/8/9, Sub screen: 1/4/8/9	
14.	Perimeter Performance AI by NVR (Number of Channels)	4 channels, 10 IVS rules for each channel	
15.	Perimeter Performance of AI by Camera (Number of Channels)	8 channels	
16.	Face Attributes	Gender; age group; glasses; expressions; face mask; beard	
17.	Face Detection Performance of AI by Recorder (Number of Channels)	2 channels (up to 12 face images/s each channel)	
18.	Face Detection Performance of AI by Camera (Number of Channels)	8 channels	
19.	Face Database Capacity	Up to 20 face databases with 20,000 images, with a total capacity of 2.5 G. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image.	
20.	Face Recognition Performance of AI by NVR (Number of Channels)	1. 8-channel FD (by camera) + FR (by nvr), image stream: 16 face images/s 2. 2-channel FD (by nvr) + FR (by nvr), video stream: 12 face images/s	
21.	Face Recognition Performance of AI by Camera	8 channels	

	(Number of Channels)		
22.	SMD Plus by NVR	8 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change	
23.	SMD Plus by Camera	8 channels	
24.	Metadata Performance of AI by Camera (Number of Channels)	8 channels	
25.	Human Attributes	Top color, top type, bottom color, bottom type, hat, bag, age, gender and umbrella	
26.	Motor Vehicle Attributes	License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle interior, vehicle registration location	
27.	Non-motor Vehicle Attributes	Vehicle model, vehicle color, number of persons, helmet	
28.	ANPR by Camera (Number of Channels)	8 channels	
29.	License Plate Database Capacity	1. Create up to 20, 000 plate numbers. 2. Block list and allow list	
30.	Anomaly Alarm	Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan; cyber security exception	
31.	Intelligent Alarm	Face detection; perimeter protection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map	
32.	General Alarm	Motion detection; privacy masking; local alarm	
33.	Alarm Linkage	Record; snapshot (panoramic); local alarm output; IPC external alarm output; access controller; audio; buzzer; log, preset; email	
34.	Audio Input	1-channel RCA	
35.	Audio Output	1-channel RCA	

36.	Audio Compression	G.711a; G.711u; PCM; G726	
37.	Disk Group	Support	
38.	Alarm Input	4 channel	
39.	Alarm Output	2 channel	
40.	Hard Disk	2 SATA ports, up to 16TB. The maximum HDD capacity varies with environment temperature	
41.	Multi-channel Playback	Up to 8 channels	
42.	Record Mode	General, motion detection; intelligent; alarm; POS	
43.	Backup Method	USB device and network	
44.	Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback (face and motion detection)	
45.	Smart Phone	iPhone, iPad, Android Phone	
46.	Bit Rate	16Kbps ~ 20Mbps Per Channel	
47.	Sync Playback	1/4/9	
48.	Playback	Play, Pause, Stop, Rewind, Fast play, Slow play, Next file, Previous file, Next camera, Previous camera, Full screen, Repeat, Shuffle, Backup selection, Digital zoom	
49.	Backup Mode	USB Device/Network	
50.	Interface Ports	2 USB Ports (1 Rear USB 3.0, 1 Front USB 2.0), 1 RS232, 1 RS485	
51.	Protocols	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; DDNS; Alarm Server; IP Search, Multicast; InstaOn cloud; Auto Registration, ONVIF 21.12(Profile T; Profile S; Profile G); CGI; SDK	
52.	Ethernet	1 x (10/100/1000 Mbps Ethernet port, RJ-45)	
53.	Power Supply	12 VDC, 4Amp	
54.	Power Consumption	≤ 10 W (without HDD)	
55.	Operating Temperature	-10 °C to +55 °C (14 °F to +131 °F)	
56.	Operating Humidity	10%–93% (RH)	
57.	Storage Temperature	-20 °C to +60 °C (-4 °F to +140 °F)	

58.	Dimensions& Weight	375.0 mm × 284.4 mm x 56.0mm (14.76" × 11.20" × 2.20") (W × D × H) 1.57kg (without HDD)	
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Item 6: 16+2 Port Giga Switch

Qty: 10

SN#	Feature	Detailed Specification	Compliance Yes/No
1.	Uplink Ports	2, 1000Mbps; Transmission Distance: 0-100m	
2.	Network Standard	IEEE802.3i/802.3u/802.3x/802.3ab	
3.	Switch Capacity	12 Gbps Full duplex	
4.	Packet Forwarding Rate	1.488Mpps/port	
5.	PoE Ports	4, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port Transmission distance:0~100m	
6.	Network Ports	6	
7.	MAC Address Table	2K	
8.	Transmission Distance	0-100m/100Mbps	
9.	PoE Standard	IEEE802.3af, IEEE802.3at	
10.	PoE Power Supply	1/2(+), 3/6(-)	
11.	PoE Power Budget	48W	
12.	PoE Feature	All ports support MDI/MDIX	
13.	VLAN	Support	
14.	Watchdog	Support	
15.	Power Indicator	Light on: Powering Light off: No Power	
16.	VLAN Indicator	Green light on: VLAN mode Light off: normal mode	
17.	Port 1-10 indicator	Light off: Link is disconnected Red light on: Powering but data disconnected Light flash quickly: Data Transmitting	
18.	Forwarding Mode	Store-and-forward	
19.	ESD	Air discharge: 1.5KV Contact discharge: 1.5KV	
20.	Anti-Thunder Level	Common mode: 2KV Differential mode: 2KV	

21.	Power Source	Built-in Power Supply, Input: 100-240V AC, 50/60Hz	
22.	Power Consumption	<5W	
23.	Operating Temperature	-10°C 50°C	
24.	Storage Temperature	-40°C~70°C	
25.	Humidity	10%-95%, non-condensing	
26.	Color	Black	
27.	Dimensions & Weight	202mm x 140mm x 45mm (L x W x H) 0.7Kg (not include input cable & packaging)	

Item 7: 8+2 Port Giga Switch

Qty: 18

SN#	Feature	Detailed Specification	Compliance Yes/No
1.	Uplink Ports	2 x 1000Mbps RJ45 ports + 2 x 1000Mbps SFP ports	
2.	Network Standard	IEEE802.3i/802.3u/802.3x/802.3af/802.3ab/ IEEE 802	
3.	Switch Capacity	24Gbps Full duplex	
4.	Packet Forwarding Rate	1.488Mpps/port	
5.	PoE Ports	8, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port	
6.	Network Ports	12 port	
7.	Transmission Distance	0-100m/1000Mbps or Port 7-8 Max. 250m/10Mbps via Cat.5e or more under Extend mode	
8.	MAC Address List	2k	
9.	PoE Feature	All ports support MDI/MDI	
10.	PoE Standard	IEEE802.3af, IEEE802.3at	
11.	PoE watchdog	Supported	
12.	PoE Power Supply	1/2(+), 3/6(-)	
13.	PoE Power Budget	96W	
14.	Ethernet Port Light	Green light off: Link is disconnected Green light on: Link is connected Green light flash: Data Transmitting	

15.	Surge Protection	Common mode/RJ45 port: 4KV Differential mode/RJ45 port: 2KV Common mode/Power board: 2K Differential mode/Power board: 2KV	
16.	Forwarding Mode	Store-and-forward	
17.	Power Source	Input: 100-240V AC, 50/60Hz, Bult-in Power Supply	
18.	Operating Temperature	-10°C ~50°C	
19.	Power Consumption	<5W	
20.	LEDs Indicator	Light on: Power On Light off: No Power	
21.	Storage Temperature	-40°C ~70°C	
22.	ESD	Air discharge: 8KV Contact discharge: 6KV	
23.	Humidity	10%-95%, non condensing	
24.	Dimensions	220 x 161 x 44 mm	
25.	Color	Black	
26.	Weight	0.95 Kg (without packaging)	

Item 8: 4+2 Port Giga Switch

Qty: 04

SN#	Feature	Detailed Specification	Compliance Yes/No
1.	Uplink Ports	2, 1000Mbps; Transmission Distance: 0-100m	
2.	Network Standard	IEEE802.3i/802.3u/802.3x/802.3ab	
3.	Switch Capacity	12 Gbps Full duplex	
4.	Packet Forwarding Rate	1.488Mpps/port	
5.	PoE Ports	4, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port Transmission distance:0~100m	
6.	Network Ports	6	
7.	MAC Address Table	2K	
8.	Transmission Distance	0-100m/100Mbps	
9.	PoE Standard	IEEE802.3af, IEEE802.3at	
10.	PoE Power	1/2(+), 3/6(-)	

	Supply		
11.	PoE Power Budget	48W	
12.	PoE Feature	All ports support MDI/MDIX	
13.	VLAN	Support	
14.	Watchdog	Support	
15.	Power Indicator	Light on: Powering Light off: No Power	
16.	VLAN Indicator	Green light on: VLAN mode Light off: normal mode	
17.	Port 1-10 indicator	Light off: Link is disconnected Red light on: Powering but data disconnected Light flash quickly: Data Transmitting	
18.	Forwarding Mode	Store-and-forward	

Item 9: 6 U Network Rack with Accessories

Qty-3

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	PDU 5Amp/6 Socket - 1 Pc, Cooling Fan - 1 Pcs, Cantilever Tray (220mm Depth) DIN RAIL - 1 Pc	W*D*H=550*500*6U	

Item 10: 4 U Network Rack with Accessories**Qty-28**

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	1U Cantilever Tray (220mm Depth): 1 No. ,3 Socket PDU 5 Amp: 1 No.	W*D*H=550*400*240	

Item 11: Cat 6 Cable (Double Jacket)**Qty-30**

SN#	Feature	Detailed Specification	Compliance
1.	Conduct Type	Solid Bare Electrolytic Grade Copper	
2.	Nominal Conductor Diameter	24 AWG (0.48mm ± 0.020mm)	
3.	Insulation	Polyethylene (HDPE)	
4.	Separator	Each pair separated with a cross separator	
5.	Pairing	2 insulated conductors twisted together	
6.	Inner Jacket	PVC	
7.	Outer Jacket	PE	
8.	Colour of Jacket	Black	
9.	Approximate OD	5.8mm ± 0.1mm	
10.	Thickness of Outer Jacket	0.55mm ± .05mm	
11.	Thickness of Inner Jacket	0.45mm ± .05mm	
12.	Impedance	100±15% Ω	
13.	Rip Cord	No	
14.	Sequential Marking	Every Meter	
15.	Characteristic	100 ±15Ω	

	Impedance		
16.	Nominal Velocity of Propagation	69%	
17.	Resistance Unbalance	5% Max	
18.	Conductor Resistance	≤9.38/100m	
19.	Resistance Unbalance	5% Max	
20.	Capacitance Unbalance	330pF/100m	
21.	Bending Radius	< 8 x Cable Diameter at -20° ±1°C	
22.	Delay Skew	<45 Ns	
23.	Mutual Capacitance	<5.6nf/100m	
24.	Packing	305 Metres	
25.	Temperature Rating	-15 to 60°C	
26.	Storage Temperature	-15 to 60°C	
27.	Pulling Force	11.5Kg	

Item 12:Firewall upgraded up to 250 Users

Qty: 01

SN#	Features of Firewall	Compliance Yes/No
1	The Firewall must be appliance based and should facilitate multiuser environment which should support current network traffic as well as future growth	
2	Firewall appliance should be supplied with at least 6 x GE RJ45 ports, 1 x RJ45 and shared media WAN ports. In addition, it should have dedicated 1GE RJ-45 interfaces for Management and, 1 x USB Port	
3	Firewall should support at least 250 users support.	
4	The Firewall solution should support dynamic NAT, PAT, DHCP, DNS.	

5	The proposed system shall be able to operate on either Transparent (bridge) mode to minimize interruption to existing network infrastructure or NAT/Route mode.	
6	The physical interface shall be capable of link aggregation, otherwise known as the IEEE 802.3ad standard, allows the grouping of interfaces into a larger bandwidth 'trunk'.	
7	The proposed system should have integrated Traffic Shaping functionality	
8	The proposed system should support	
	a) IPSEC VPN	
	b) SSL VPN	
	c) PPTP VPN	
	d) L2TP VPN	
9	Should support Route-based VPN	
10	Should support automatic ISP failover as well as ISP load sharing	
11	Firewall should have capability of intelligent routing and failover of traffic on ISP links based on Application Visibility and link Performance SLAs	
12	The firewall should support static, policy base, identity based, Multicast routing and dynamic routing.	
13	HTTP, HTTPS, SMTP, SMTPs, POP3, POP3s, IMAP, FTP etc.	
14	Should support Policy based routing (PBR)	
15	Should support Net flow exportation	
16	The proposed system should be able to block or allow file size based on configurable thresholds in web policy.	
17	Should have Anti-Spam Capability to detect and block Spam Emails over IMAP, SMTP, POP3, MAPI	
18	Should have Web Filter Capability	
19	Should have App base control	
20	Should have Keyword-based web filtering	
21	Should have Adware protection	
22	Should have Malware protection	
23	Should have IoT safeguard	
24	Should have DDoS prevention	
25	Should have Access control list (ACL) and filtering	
26	Should have Stateful firewall	
27	Web filtering should support local categories & category rating override to customize the filters.	
28	Should have Custom category (IP, port, domain	

29	Should have Time scheduling and time quota	
30	Should have Advanced NAT	
31	Should have MAC binding/IP reserving	
32	Logging & reporting	
33	Should have Central management portal	
34	Should support Log Forwarding to an external device/syslog server	
35	Warranty and Support	
36	The proposed solution should be quoted with 5 years support from OEM for regular Firmware Updates and 24x7 TAC Support	
37	OEM should have UK CA, CE, RoHS, IP40 Certificates.	

Hardware Specification of firewall			Compliance Yes/No
S. No	Description	Parameter Value	
1	Power consumption	35 W	
2	Humidity	5-95%	
3	Storage temperature	40oC ~ +70oC	
4	Operating temperature	0oC ~ 40oC	
	Hardware specification		
6	Dimension	430x280x45 mm	
7	Weight	3.5 kg	
8	Mounting	Desktop	
9	Ethernet interface	6xGbe RJ45	
10	USB	2xUSB 2.0	
11	Console	Yes	
12	Power	AC 100-240V ~ 50/60Hz 13A	

Item 13: Optical Fiber Cable**Qty:1500 meter**

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	Cable Type	Optical Fiber Cable, 6 Core, SM	

Item 14: 6 Port LIU**Qty: 2 No.**

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	Material	Cold Rolled Sheet 1.2 mm	
2.	Thickness	1.4 mm	
3.	Operating Temperature	40°C to +85°C	

Item 15:2 Port LIU**Qty: 14 No.**

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	Material	Cold Rolled Sheet 1.2 mm	
2.	Thickness	1.4 mm	
3.	Operating Temperature	-40°C to +85°C	

Item 16: SC Pigtail/Coupler**Qty.24 No**

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	Requirement	As per onsite requirement	

Item 17 : Optical Fiber Patch Cord, SM, 3M**Qty:10 Nos**

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	Fiber Type	Single Mode	
2.	Polishing	UPC, APC	
3.	Connector	FC, LC, SC, ST, E2000..and so on	

Item 18:1/100 MEDIA CONVERTER**Qty:10 Nos**

SN#	Features	Detailed Specifications	Compliance Yes/No
1.	Network Speed	10/100/1000 Mbps	
2.	Fiber Type	Single Mode	
3.	Dimension (W x H x D)	140mm*110*30mm	

Item 19: Wireless access Point POE Based**Qty:12**

SN#	Features	Specifications	Compliance Yes/No
1.	Frequency band	2.4 GHz, 5 GHz	
2.	Wireless standards	IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, IEEE 802.11ac	
3.	2.4 GHz data rate	1 - 300 Mbps	
4.	5 GHz data rate	6 - 867 Mbps	
5.	Ethernet port	1*10/100/1000 Base-TX port	
6.	Button	1*Reset	
7.	LED indicator	1*SYS	
8.	Water proof level	IP65	
9.	Lightning protection	6000 V	
10.	Max. power consumption	11.5 W (Full-load)	
11.	Power supply standard	IEEE 802.3af/at & 24V, 0.5A Passive PoE	
12.	Antenna	2*5dBi, RP-SMA Connector	

13.	2.4 GHz Max. output power	26 +/- 1.5 dBm	
14.	2.4 GHz 802.11n (MCS7) RX sensitivity	26 +/- 1.5 dBm	
15.	5 GHz Max. output power	26 +/- 1.5 dBm	
16.	802.11b RX sensitivity	-93 dBm	
17.	2.4 GHz 802.11n (MCS7) RX sensitivity	-72 dBm	
18.	5 GHz 802.11a RX sensitivity	-93 dBm	
19.	5 GHz 802.11n (MCS7) RX sensitivity	-74 dBm	
Software Specifications			
7.	Operating modes	AP, Client+AP	
8.	Max. No. of SSID	2.4 GHz: 8, 5 GHz: 4	
9.	Hide SSID	Supported	
10.	WEP	Supported	
11.	WPA	-PSK AES/TKIP	
12.	Max. connected clients	2.4 GHz upto 128, 5 GHz up to 256	

Item 20 : GI Pole**Qty: 10**

S.N#	Technical Specifications	Compliance Yes/No
1.	GI Pole, 12 Feet height, 50mm Dia with RCC Foundation	

Item 21 : PVC Conduit**Qty: 3600 Meter**

S.N#	Technical Specifications	Qty	Unit	Compliance Yes/No
1.	PVC Conduit / Channel / Pipe, 25 mm	3600	Meter	

Item :22 HDPE Pipe**Qty: 1100 Meter**

S.N#	Technical Specifications	Qty	Unit	Compliance Yes/No
1.	HDPE Pipe, 25mm	1100	Meter	

Item: 23 Hard Disk 4 TB**Qty:18 Nos**

S.N#	Technical Specifications	Qty	Unit	Compliance Yes/No
1.	4TB Hard Disk Drive (SATA) (Surveillance)	18	Nos	

Item: 24 Cat6 I/O Box Complete**Qty:60 Nos**

S.N#	Technical Specifications	Qty	Unit	Compliance Yes/No
2.	Cat6 I/O Box Complete	60	Nos	

Item: 25 Interactive Display Panel 75 Inch**Qty:1 Nos**

Feature	Specification	Compliance Yes/No
Display Size	75 inch	
Aspect Ratio	16:9	

Backlight	DLED	
Resolution	3840 x 2160 (4K)	
Effective Display Area	75": 1650 x 928 mm	
Brightness	350 Cd/m ² ;	
Contrast Ratio	Static Contrast: VA: 4000(typ.); IPS: 1200(typ.)	
Response Time	Display : 8ms, Touch screen : ≤6ms	
Glass Thickness	4MM AG	
Display Color	1.07Billion	
Viewing Angle	178°(H)/178°(V)	
Refresh Rate	60 Hz	
Surface Hardness	>7H	
Haze	4-8%	
Transparency	88%±3	
Attachment Method	Zero Bonding	
Surface Treatment	Anti-Glare	
Screen sharing	E-share not activated, need to be charged	
Color gamut	72%NTSC	
BT	BT 5.0	
Operating System	Android 13	
CPU	A55 x 4	
CPU Frequency	1.9 G	
GPU	Mali G52 MP2	
supportive system	Windows, Mac, Android, Linux, Chrome	
Feature	Specification	
RAM &	8 GB	
ROM	32 GB(Optional 128GB)	
Wi-Fi	Wi-Fi 5 802.11a/b/g/n/ac	
Lifespan	≥50000 hours	
Ports	Front: USB2.0 Type-B*1 USB3.0 Type-A *3 TYPE-C*1	

	(USB) HDMI IN *1 (4K 60fps) Rear: USB2.0 Type-A*1 USB3.0 Type-A *1 HDMI IN*2 (4K 60fps) RS232*1 USB Touch Type-B 2.0 *1 AV IN *1 AV OUT *1 Audio Out 3.5MM*1 SPDIF OUT Coax*1 RJ45*1 OPS slot*1	
Touch Technology Type	IR	
Touch Points	Android 20 Windows 40	
Valid Touch	Φ 2mm	
Writing Mode	Finger + Pen	
Speaker Power	15W*2	
Built-in Speaker	2	
Number of Microphones	8 Mice	
Installation	Wall mount; mobile bracket	
Power Supply	AC100-240V	
Casing	Metal	
Dimensions	1707.52mm x 1012.8mm x 116.5mm	
Weight	53KG±1	

Item: 26 AMC

S.N#	Technical Specifications	Qty	Unit	Compliance Yes/No
2.	5 Years AMC Charges after expiry of 1 Y warranty period of the supplied items	01	Job	

Item: 27 AMC

S.N#	Technical Specifications	Qty	Unit	Compliance Yes/No
2.	6 Years AMC Charges for existing CCTV Security System (Complete CCTV/ Network System)	01	Job	

‘INSTRUCTIONS TO BIDDERS’

Downloading of Tender Documents : : 26.11.2024 (05:00 PM)
E-Bid Submission Closing Date : : 16.12.2024 (05:00 PM)
Date of Opening of Technical Bids : : 20.12.2024 (11:00 AM)

The Instructions given below must be read very carefully, as failure in compliance with any of these may render the offer liable for rejection. If a bidder has any doubt about the meaning of any stipulation herein, General Purchase Condition, specification of *materials or any other enclosed* document, he should immediately obtain the clarification/information in writing.

1. Ernest money Deposit (EMD)

1/1. Offers must accompany online EMD submission slip (www.mptenders.gov.in) drawn- in favour of “Registrar, Jiwaji University, Gwalior”, .

1/2. The EMD shall be forfeited, if:

i) Bidder withdraws the bid before expiry of its validity.

ii) Successful bidder does not accept the order or fails to enter into a contract within validity period of offer.

iii) Successful bidder fails to furnish Security Deposit within one month of intimation/ date of issue of Purchase Order.

1/3. The EMD of unsuccessful bidders shall be returned as soon as the tenders are finalized.

2. Acceptance of University Payment Terms

The Standard Payment terms shall be –

2 (1) 100% of all inclusive price of the materials will be paid on receipt and acceptance of the material in good condition, installation and commissioning of supplied at site and after furnishing of Bank Guarantee / FDR for 3% of the contract covering the guarantee period subject to penal provisions applicable in case of delay in supply and commissioning as per the condition 2.4 of Annexure – 07.

GENERAL PURCHASE CONDITIONS

SECTION -I

GENERAL

- 1.1 The following terms and expressions used herein shall have the meaning as indicated therein Supplier / Vendors; shall mean the individual firm or company whether incorporated or otherwise in whose name the purchase order is addressed and shall include its permitted assignees and successors. Purchaser shall mean Registrar Jiwaji University, Gwalior – 474011.
- 1.2 **Reference :**
The purchase order number must appear on all the correspondence, packing slips, invoices, drawing or any other document or paper connected with the purchase order:
- 1.3 **Waiver :**
Any waiver by the purchaser of the terms and conditions of the purchase order shall not constitute any right for subsequent waiver of any other terms or conditions.
- 1.4 **Sub-letting and Assignment :**
The supplier shall not, save with prior consent in writing of the University/ sublet, transfer or assign this order or any part thereof or interest therein or benefit or advantage, thereof in any manner, whatsoever provided nevertheless that any such consent shall not relieve the supplier from any obligation, duty or responsibilities under the contract.
- 1.5 **Information provided by the University :**
All drawings, data and documentation that are given to the supplier by the University for the Execution of the order are the property of the University and shall be returned when demanded. Except for the purpose of executing the order of the University, the supplier shall ensure that the above documents are not used for any other purpose. The supplier shall further ensure that the information given by the University is not disclosed to any person, firm body, corporate and/or authority and make every effort to keep the above information strictly confidential. All such information shall remain the absolute property of the University.
- 1.6 **Supplier Liability :**
Supplier hereby accepts full responsibility and indemnifies the University and shall hold the University harmless from all acts of omission and commission on the part of the supplier, his agents, his subcontractors and employees in execution of the purchase order. The supplier also agrees to defend and hereby undertakes to indemnify the University and also hold it harmless from any and all claims for injury to or death of any and all persons including but not limited to his/her employees and for damage to

the property arising out of or in connection with the performance of the work under the purchase order.

1.7 Access to supplier's premises :

The University and/or its authorized representative shall be provided access to the supplier's and/or his sub-contractor's premises, at any time during the pendency of the purchase order, for expediting the supplies, inspection, checking etc.

1.8 Modifications :

The purchase order constitutes an entire agreement between the parties hereto. Any modification to this order shall become binding only upon the same being confirmed in writing duly signed by both the parties.

1.9 Inspection/Checking/Testing :

All materials to be supplied against this purchase order shall be subject to inspection/ checking /testing by the University or its authorized representative at all stages and places, before, during and after the manufacture. All these tests shall be carried out in the presence of authorize representative of the University. Supplier shall notify the University for inspection of materials when they are ready, giving at least 10 days notice. If upon receipt at our Stores, the material does not meet the specifications, they shall be rejected and returned to the supplier for repair/modification etc. or for replacement. In such cases all expenses including to-and- fro freight, re-packing charges, transit insurance etc shall be to the account of supplier.

Inspection by the authorized representative of the University or failure of the University to inspect the material/equipment shall not relieve the supplier of any responsibility or liability under this purchase order in respect of such material/ equipment and it shall not be interpreted in any way to imply acceptance thereof by the University.

1.10 Packing and Marking :

All materials shall be securely packed to the requirements of transportation by Air/Rail/Road. All exposed services/ connections/, protrusions shall be properly protected. All unexposed part shall be Packed with due care and the packages should bear the words 'handle with care'. The packing requirements of Air/Rail/Road transport shall be complied with so as to obtain clear Airway/Railway Receipt/Lorry Receipt i.e. without any qualifying remarks.

All packages and unpacked materials shall be marked with the name of Consignor, Consignee, purchase order No., gross and Net weight, sign of handling, if any, with indelible paint in English at least at two places. In case of bundles, metallic plates marked with the above details shall be tagged to such bundles.

1.11 Dispatch of Materials:

The supplier is responsible for the safe delivery of the goods in good condition at destination stores. The supplier should acquaint himself of the conditions relating to handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit.

1.12 **Validity of offers:**

The offers shall be valid for a period of 120 days from the date of opening of bids. The period of validity cannot be counted from any other date other than the date of opening the bids. During this period the bidder shall not be permitted to withdraw or vary his offer made and if the bidder does so, the EMD shall be forfeited.

1.13 **Jurisdiction:**

All and any disputes or difference arising out of or touching this order shall be decided only by the Courts or Tribunals situated in Gwalior.

1.14 The Registrar, Jiwaji University, Gwalior does not bind himself to accept the lowest or any tender and he reserves the right to reject any offer without assigning any reason.

SECTION-II FINANCIAL

2.1 Prices:

Prices quoted shall be inclusive of all taxes and firm till completion of the Programme .

2.2 Terms of payment:

2.2.1. Payments by the purchaser shall be made through Account payee cheques only.

2.2.2 If the supplier has received any overpayments by mistake or if any amounts are due to the University from the supplier due to any other reasons and when it is not possible to recover such amount under the present purchase order, the University reserves the right to collect the same from any other amounts and/ or Bank Guarantee given by the supplier due to or with the University.

2.3 Liquidated Damages/ Failure and Termination:

2.3.1 In the event of any delay in the supply of material beyond the stipulated date of completion including any extension permitted in writing, the University reserves the right to recover from the supplier a sum equivalent to 0.5% of the value of delayed materials for each week of delay and part thereof subject to a maximum of 5% of the total value of the order.

2.3.2 Alternatively, the University reserves the right to give the contract elsewhere at the sole risk and cost of the supplier and recover all such extra cost incurred by the University in procuring the materials from the other source.

2.3.3 Alternatively University may cancel the Purchase Order completely or partly without prejudice to its right under the alternatives mentioned above.

2.4 Delivery Schedule:

Time is essence of this order and no delay shall be allowed in the delivery time/ delivery schedule mentioned in the purchase order.

2.5 Performance Bank Guarantee:

The supplier shall ensure that all materials under this purchase order shall conform to University's requirements and specifications. An additional security in the form of Performance Bank Guarantee / FDR is essential for satisfactory performance of the equipment over a period of time. In view of this, the supplier shall be required to furnish a Bank Guarantee / FDR (3% of order value) as follows against any manufacturing defects/ poor workmanship/poor performance. In case any deficiencies are found during this period, the same shall be repaired/rectified/replaced free of cost. BG / FDR shall be from any Scheduled Bank or any other bank as approved by University from time to time in the prescribed Performa.

a. Bank Guarantee / FDR for 3% of the order value with validity up to warranty period from the date of installation of equipment.

The University shall at its discretion have recourse to the said bank guarantee / FDR for recovery of any or all amount due from, the supplier in connection with the purchase order including of guarantee obligations. Checking/approval of supplier's drawings, inspection and acceptance of materials/equipment furnishing to effect shipment and/or work done by erection, installation and commissioning of the equipment by University or any other agency on behalf of the University shall not in way relieve the

supplier from the responsibility for proper performance during the guarantee period.

2.6 **Insurance:**

Supplier shall arrange suitable insurance cover at his risk and cost for the transit of the equipment up to for installation and testing.

2.7 **Removal of rejected goods and Replacement:**

- a) If upon delivery, the material/equipment is found not in conformity with the specifications stipulated in the purchase order, whether inspected and approved earlier, or otherwise, such material/ equipment will be rejected by the University or his authorized representative. A notice to this effect shall be issued to the supplier, normally within 30 days from the date of receipt of materials at our Stores.
- b) Supplier shall arrange suitable replacement supplies and remove the rejected goods within 30 days from the date of notice failing which, the goods shall be dispatched to, vendor by road transport on 'Freight to pay basis at supplier's risk and cost.
- c) External damages or shortages that are prima-facie as a result of rough handling in transit or due to defective packing shall be intimated to the supplier within, a period of one month of the receipt of the materials, spares etc. In case of Internal defects, damages or shortages of any internal part, which cannot ordinarily be detected on a superficial visual examination, due to bad handling in transit of defective packing or any other reason, it should be intimated to the supplier within 3 months from the date of receipt of the material. In either case the damaged or defective material should be replaced by the supplier free of costs.
- d) If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the University may deem proper to afford, the University may without prejudice to its other rights and remedies arrange for repairs/rectification of the defective materials or replace them entirely and recover the expenditure incurred on account of these actions from the deposits such as EMD, SD and performance guarantees or other monies available with the University or by resorting to legal action.

2.8 **Force Majeure :-**

2.8.1 The supplier shall not be liable for delay or failing to supply the material for reasons of Force Majeure such as Act of God, Act of War, Act of Public Enemy, Natural Calamities, fires, Floods, Frost, Strikes. Lock outs etc. Only those causes which have duration of more than 7 days shall be considered for force Majeure.

2.8.2 The Supplier shall within 10 days from the beginning of such delay notify the University in writing the cause of delay. The University shall verify the facts and grant such extension of times facts justify.

2.8.3 No price variation shall be allowed during the period of force majeure and liquidated damages would not be levied for this period.

At the option; of University, the order may be cancelled. Such cancellation, would be without any liability whatsoever on the part of the University. In the event of such cancellation, supplier shall refund any amount advanced or paid to him by the University and deliver back any materials issued to him by the University and release facilities, if any, provided by the University.

DEVIATIONS

Bidder's Name and Address : _____

To

The Registrar,

Jiwaji University

Gwalior – 474011 (M.P.)

Dear Sir,

Sub :- Supply of _____ against enquiry

No. _____ Dated _____.

We confirm that following are the only deviations and variations, from any exception to specifications and tender documents for the above mentioned subject supplies against enquiry offer. These deviations and variations are exhaustive. Except for these deviations, the entire supplies shall be executed as per specifications and tender documents. Further, we agree those additional conditions, if any, found in our offer other than those stated below, save that pertaining to any rebates offered shall not be given effect to.

S.No.	Description of Deviation Conditions of	Ref. of Page, Clause	*Monetary Implications of the bid-documents in case of withdrawal
			Rs. (in figures)Rs. (In words)

Note: Here the bidder should indicate the amount of money, if any, which conditions/deviations and accepting the condition as stipulated in tender documents (Use additional Sheet of the same size and format if necessary).

Signature : _____

Designation : _____

Guidelines for Submission of Bank Guarantee towards Performance Security

The Bank Guarantee shall fulfill the following conditions failing which it shall not be considered valid:

1. Bank Guarantee shall be executed on non-judicial stamp paper of applicable value purchased in the name of bank.
2. Non-judicial stamp paper shall be used within 6 months from the date of purchase. Bank Guarantee executed on the stamp paper of more than 6 months old shall be treated as invalid.
3. The contents of the Bank Guarantee shall be as proper form (Annexure -10)
4. The Bank Guarantee should be executed by a scheduled bank or banks viz.

5. The executor of Bank Guarantee (Bank Authority) should mention the Power of Attorney No. and Date executed in his/her favor authorizing him/her to sign the document or produce the Photostat copy of Power of Attorney.
6. All conditions, corrections, deletion in the Bank Guarantee should be authenticated by signature of Bank Officials signing the Bank Guarantee.
7. Each page of Bank Guarantee shall bear signature and seal of the Bank.
8. Two persons should sign as witnesses mentioning their full name and address.

Registrar,
Jiwaji University,
Gwalior -474011 (M.P.)

ANNEXURE -10

BANK GUARANTEE PROFORMA FOR PERFORMANCE SECURITY

This agreement has to be executed on a Non-Judicial Stamped Paper worth Rs. 1000/- (Rs. One Thousand) Whereas the _____ here-in-after called (The Bidder) has submitted their bid Dated _____ for the supply of _____ (Here-in-after called "the Bid") _____ KNOW ALL MEN by these presents _____ that we _____ (Hereinafter called the Bank") are bound unto Registrar, Jiwaji University, Gwalior, (M.P). Here in after called "the purchaser") in the sum of _____ for which payment will and truly to be made to the said purchaser, the bank binds itself, its successors and assigns by these presents. Sealed with the common Seal of the said Bank this _____ day of _____ 2024'

THE CONDITIONS OF THIS OBLIGATION ARE:

1. When the successful tenderer does not accept the order after issue of preliminary acceptance letter/letter of intent/purchase order.
2. When the successful tenderer fails to furnish the security deposit within 30 days from the date of issue of preliminary acceptance letter or the letter of intent or purchase order _____.
3. When tenderer is disqualified for reasons outlined in _____.
4. When tenderer alters his prices or withdraws his offer during the validity period. We undertake to pay to the purchaser the above amount within one week upon receipt of its first written demand without the purchaser having to substantiate his demand, without referring to the supplier and without questioning the right of University to make such demand or the propriety or legality of the demand provided that in its demand the purchaser will note that the amount claimed by it is due to it owing to any of the occurrence of the above mentioned conditions, specifying the occurred condition or conditions.

Not with standing anything contained in the foregoing our liability under this _____ guarantee is restricted to _____ (Rupees _____ only). Our guarantee shall remain in force until _____. Unless a claim within 3 months from that date, all your rights under this guarantee shall be forfeited and we shall be relieved and discharged from all liability thereafter.

We _____ Bank Limited lastly undertakes not to revoke this guarantee during its currency except with the previous consent of University in writing.

Date the _____ Day _____ 200 for _____ Bank Ltd.

ANNEXURE-11**TECHNICAL BID FORM**

S.No.	Documents	Copy submitted or not (Yes/No)
1	The Company/the bidder should be in existence for the last 5 years As per Annexure-02	
2	The bidder should be a Manufacturer or the authorized representative of equipment or other respective products/items	
3	IT returns for the last three Assessment years.	
4	Technical Specifications of Annexure- 05 (Complied or Not-Complied report) along with supporting documents of the items bided (items 1 to 12), for the scientific equipments clearly mentioning the make and model	
5	List mentioning the addresses and contact persons with phone numbers of the Service Centers	
6	The list of customers, to whom the bidder had supplied identical materials in the past	
7	Annexure-08	

ANNEXURE- 12

PROFORMA OF PERFORMANCE BANK GUARANTEE

In consideration of the Registrar, Jiwaji University, Gwalior (hereinafter called the "Client") having offered to accept the terms and conditions of the proposed agreement (hereinafter called the "said

Agreement") between Registrar, Jiwaji University, Gwalior and M/s..... (hereinafter called the "said Contractor") for the work of Catering Services having agreed to production of an irrevocable bank guarantee for Rs._____ (Rupees _____ only) as a security / guarantee from the contractor for compliance of its obligations in accordance with the terms and conditions in the said agreement.

We _____ (hereafter referred to as the "Bank") hereby undertake following:

1. We undertake to pay to the Client any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under bond shall be a valid discharge of our liability for payment there under, and the contractor(s) shall have no claim against us for making such payment.
2. We further agree that the Guarantee herein contained shall (indicate the name of the Bank) remain in full force and effect during the period that would be taken for the performance of the said agreement, and it shall continue to be enforceable till all the dues of the Client under or by virtue of the said agreement have been fully paid, and its claims satisfied or discharged, or till the Client certifies that the terms & conditions of the said agreement have been fully and properly carried out by the said contractor(s), and accordingly discharges this guarantee
3. We further agree with the Client that the Client shall have the fullest liberty without our consent, and without effecting in any manner our obligations hereunder, to vary any of the terms & conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Client against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement, and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the Client or any indulgence by the Client to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

4. This Guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).
5. We lastly undertake not to revoke this Guarantee except with the prior consent of the Client in writing.
6. This guarantee shall be valid up to unless extended on demand by the Client Notwithstanding anything mentioned above, our liability against this Guarantee is restricted to Rs._____ (Rupees _____ only) and unless a claim in writing is lodged with us under this Guarantee shall stand discharged.

Dated the _____ day of _____ for

Signature of the authorized officer of the Bank

Name & Designation of the officer

Seal, Name & Address of the Bank and Address of the Branch

FORMAT OF CONTRACT AGREEMENT

(On Non-judicial Stamp Paper as per M.P Govt. rules)

THIS AGREEMENT made the Day of, 2024
between Registrar, Jiwaji University,
Gwalior (hereinafter "the Client") of the one part and M/s _____

(Hereinafter called "the Contractor") of the other part:

WHEREAS the Client is desirous that certain services viz. Supply Catering Services in the tender reference no. _____ Dated ____ and has accepted a bid by the Contractor for the performance services for the sum of Rs. _____ /- (*Rupees _____ only*) (hereinafter called "the Contract Price") and supply of consumables as per rates given in the financial bid of its tender.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1.In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to, and they shall be deemed to form and be read and construed as part of this agreement.

2.The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

- a) The Letter of Acceptance issued by the Client.
- b) The supplier's bid including enclosures, annexure, etc.
- c) Tender document along with all enclosed documents.
- d) Any other document listed in the supplier's bid and replies to queries, clarifications issued by the service provider, such confirmations given by the bidder which are acceptable to the contractor and the entire Addendum issued as forming part of the contract.

3.In consideration of the payments to be made by the Client to the Contractor as hereinafter mentioned, the Contractor hereby covenant with the Client to provide, the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Client hereby covenants to pay the Contractor in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

Brief particulars of the goods and services which shall be supplied / provided by the Contractor are as under.

SN#	Brief Description of Services	Contract Duration	Total Price	GST tax in %	Total value inclusive of GST tax
1					

IN WITNESS where of the parties here to have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the Said _____ (For the Client) In the presence of

Signature
 Name
 Address

Witness 1. _____ 2. _____

Signed, Sealed and Delivered by the Said _____ (For the Contractor)

In the presence of.....

Signature
 Name
 Address

Witness 1. _____ 2. _____

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

.....
.....

2. Address of the Firm :-

.....
.....

3. Name of the Proprietor / Partner / Director of the Firm :-

.....
.....

4. Telephone No and e-mail ID. :-

.....
.....

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rupees for indigenous items and in foreign/ international currency for items to be imported	
			In Figure	In words
	Supply & Installation for [Name of Quoted each Instruments]	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEA