

**GOVERNMENT ENGINEERING COLLEGE, PAINAVU, IDUKKI**

**SHORT QUOTATION NOTICE**

**No. GECI/PTA/2024-25/20**

**Dated: 05.04.2024**

The sealed envelopes containing the quotations should bear the superscription "**Quotation No 20/24-25 due on 12-04-2024**" and should be addressed to the Principal, Government Engineering College, Painavu, Idukki — 685 603. Last date of receipt of quotation is 12-04-2024 1.00 PM. Late quotations will not be accepted. The quotations will be opened at Engineering College, Painavu, Idukki 685603 on 12-04-2024 at 3 PM in the presence of such of the tenderers or their authorized representatives who may be present at that time. The maximum period required for delivery of the articles should also be mentioned.

Details of requirements and the conditions governing their supply can be obtained on free of cost.

**Quotation No. 20- 2024-25**

**List of items**

SI no	Items	INCLUDING ALL CHARGE
	<b>INSTALLATION OF CCTV CAMERAS IN EXAMINATION HALLS AND INTEGRATION OF EXISTING CAMERAS TO SERGEANT'S ROOM</b>	



  
**PRINCIPAL**  
**GOVERNMENT ENGINEERING COLLEGE**  
**PAINAVU, IDUKKI**

- Copy To,  
1. College Notice Board  
2. PTA Office.  
3. Office Copy.

## **TERMS & CONDITIONS**

1. Supply and Installation should be effected at GEC Painavu., Idukki
2. Rate shall be inclusive of all Taxes.
3. The supply and installation are to be completed within 15 days from the receipt of work order.
4. Make and Model Number of each items shall be clearly specified in the quotation.
5. Data Sheet/Brochure of items shall be attached with the quotation.
6. All I/O points are to be numbered and labeled properly
7. Layout diagram/ Drawing of the work shall be handed over to the authorized person after completion of the work.
8. Three year onsite manufacturer warranty and service support shall be included without any additional labour / transportation /installation charges / taxes.
9. Payment will be made only after the receipt of all items in good condition and successful installation.
10. Site visit is permitted on all working days.

**Quotation for the Installation of CCTV Cameras in Examination halls and integration of existing cameras to Sergeant's room**

<b>SL.NO</b>	<b>ITEM WITH SPECIFICATIONS</b>	<b>UOM</b>	<b>QUANTITY</b>	<b>RATE</b>	<b>AMOUNT</b>
1	NVR 32 CHANNEL (For Detailed Specifications, see ANNEXURE - I)	NOS	1		
2	HDD 6TB - PURPLE SV (For Detailed Specifications, see ANNEXURE - II)	NOS	2		
3	IP CAMERA - 2 MP DOME TYPE, With WDR (For Detailed Specifications, see ANNEXURE - III)	NOS	20		
4	POE SWITCH 8 PORT - (For Detailed Specifications, see ANNEXURE - IV)	NOS	1		
5	POE SWITCH 16 PORT (For Detailed Specifications, see ANNEXURE - V)	NOS	2		
6	RACK 17U, 600X600,TROLI TYPE -FRONT GLASS DOOR, BACK METAL DOOR- WELDED TYPE	NOS	1		
7	TRAY FOR 17U RACK	NOS	3		
8	RACK 4U - WALL MUNTED TYPE WITH PDU	NOS	3		
9	UTP CABLE CAT 6	METRE	2135		
10	MEDIA CONVERTER - FULL DUPLEX 10/100/1000- (For Detailed Specifications, see ANNEXURE - VI)	NOS	4		
11	PATCH PANEL 24 PORT - FULLY LOADED	NOS	3		
12	PATCH PANEL 24 PORT - UNLOADED	NOS	3		
13	KEYSTONE CAT6	NOS	23		
14	RJ-45 CONNECTOR	NOS	100		
15	BACK BOX	NOS	17		
16	FACE PLATE - SINGLE	NOS	17		
17	PATCH CHORD - CAT 6, 1M	NOS	54		
18	PDU-6 SOCKET, 5A	NOS	1		

19	AC-DC ADAPTOR, 12V FOR EXISTING NVR	NOS	4		
20	UTP CABLE LAYING CHARGE INCLUDING PVC CONDUIT AND all ACCESSORIES	NOS	2135		
21	OFC CABLE SPLICING CHARGE	NOS	20		
22	CAMERA INSTALLATION CHARGE	NOS	23		
23	CAMERA RESETTING CHARGE	NOS	50		
24	FIBRE PATCH CHORD	NOS	4		
	<b>TOTAL</b>				

## ANNEXURE-I - NVR SPECIFICATION

<b>System</b>	
Main Processor	Industrial-grade processor
Operating System	Embedded Linux
Operating Interface	Web, Local GUI
<b>AI</b>	
AI by Recorder	Face detection; face recognition; perimeter protection; SMD Plus
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
AcuPick AI by Camera + Recorder	Max. 16-channel, 1 combined event per channel/s
<b>Perimeter Protection</b>	
Perimeter Performance AI by Recorder (Number of Channels)	4 channels, 10 IVS rules for each channel
Perimeter Performance of AI by Camera (Number of Channels)	16 channels
<b>Face Detection</b>	
Face Attributes	Gender; age group; glasses; expressions; face mask; beard
Face Detection Performance of AI by Recorder (Number of Channels)	2 channels (up to 12 face images/s each channel)
Face Detection Performance of AI by Camera (Number of Channels)	16 channels
<b>Face Recognition</b>	
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.
Face Recognition Performance of AI by Recorder (Number of Channels)	1. 16-channel FD (by camera) + FR (by recorder), image stream: 16 face images/s 2. 2-channel FD (by recorder) + FR (by recorder), video stream: 12 face images/s

Face Recognition Performance of AI by Camera (Number of Channels)	16 channels
<b>SMD Plus</b>	
SMD Plus by Recorder	8 channels: Secondary filtering for human and motor vehicle , reducing false alarms caused by leaves, rain and lighting condition change
SMD Plus by Camera	16 channels
<b>Video Metadata</b>	
Metadata Performance of AI by Camera (Number of Channels)	8 channels
Human Attributes	Top color, top type, bottom color, bottom type, hat, bag, age, gender and umbrella
Motor Vehicle Attributes	License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle interior, vehicle registration location.
Non-motor Vehicle Attributes	Vehicle model, vehicle color, number of persons, helmet.
<b>Vehicle License Plate Comparison</b>	
ANPR by Camera (Number of Channels)	8 channels
License Plate Database Capacity	1. Create up to 20,000 plate numbers. 2. Blocklist and allowlist
<b>Audio and Video</b>	
Access Channel	32
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
Resolution	32 MP; 24 MP; 16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 1080p; 720p; D1; CIF; QCIF
Decoding Capability	AI disabled: 2-channel 32 MP@25 fps; 2-channel 24 MP@25 fps; 4-channel 16 MP@30 fps; 5-channel 12 MP@30 fps; 8-channel 8 MP@30 fps; 12-channel 5 MP@30 fps; 16-channel 4 MP@30 fps; 32-channel 1080p@30 fps AI enabled: 1-channel 32 MP@25 fps; 1-channel 24 MP@25 fps; 2-channel 16 MP@30 fps; 4-channel 12 MP@30 fps; 6-channel 8 MP@30 fps; 8-channel 5 MP@30 fps; 12-channel 4 MP@30 fps; 24-channel 1080p@30 fps
Video Output	2 VGA, 2 HDMI VGA:1920 × 1080, 1280 × 1024, 1280 × 720 HDMI:3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720 Heterogeneous video source output for HDMI1 and HDMI2 Simultaneous video source output for VGA1 and HDMI1

	Simultaneous video source output for VGA2 and HDMI2
Multi-screen Display	Main screen: 1/4/8/9/16/25/36 Sub screen: 1/4/8/9/16
Third-party Camera Access	ONVIF; Panasonic; Sony; Axis; Arecont; Pelco; Canon; Samsung
<b>Compression Standard</b>	
Video Compression	Smart H.265+; H.265; Smart H.264+; H.264; MJPEG
Audio Compression	G.711a; G.711u; PCM; G726
<b>Network</b>	
Network Protocol	HTTP; HTTPS; TCP/IP; IPv4/IPv6; UDP; SNMP; NTP; DHCP; DNS; SMTP; UPnP; IP Filter; PPPoE; FTP; DDNS; Alarm Server; IP Search (Supports Dahua IP camera, DVR, NVS, etc.); Multicast; P2P; Auto Registration; iSCSI
Mobile Phone Access	iOS; Android
Interoperability	ONVIF 22.12 (Profile T; Profile S; Profile G); CGI; SDK
Browser	Chrome;IE;Safari;Edge;Firefox
Network Mode	Multi-address mode, load balance, fault tolerance and other network port binding modes
<b>Recording Playback</b>	
Multi-channel Playback	Up to 16 channels
Record Mode	General, motion detection; intelligent; alarm; POS
Backup Method	USB device and network
Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback (face and motion detection)
<b>Storage</b>	
Disk Group	YES
<b>Alarm</b>	
General Alarm	Motion detection; privacy masking; local alarm
Anomaly Alarm	Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan; cybersecurity exception
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
Alarm Linkage	Record; snapshot (panoramic); local alarm output; IPC external alarm output; access controller; audio; buzzer; log, preset; email
<b>Port</b>	

Audio Input	1-channel RCA
Audio Output	2-channel RCA
Alarm Input	16 channels
Alarm Output	6 channels (1-channel 12 V 1 A output)
HDD Interface	4 SATA ports, each disk can contain up to 20 TB. This limit varies depending on the environment temperature.
eSATA	1
RS-232	1
RS-485	1 (half-duplex serial communication)
USB	3(1 front USB 2.0 port, 2 rear USB 3.0 ports)
HDMI	2
VGA	2
Network Port	2 (10/100/1000 Mbps Ethernet port, RJ-45)
<b>General</b>	
Power Supply	100–240 VAC, 50-60 Hz
Power Consumption	Total output of NVR is ≤ 13 W (without HDD)
Product Dimensions	440.0 mm × 415.1 mm × 70.0 mm (17.32" × 16.34" × 2.76") (W × D × H)
Packaging Dimensions	530.0 mm × 500.0 mm × 210.0 mm (20.87" × 19.69" × 8.27")(W × D × H)
Operating Temperature	–10 °C to +55 °C (14 °F to +131 °F)
Storage Temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Operating Humidity	10%–93% (RH)
Installation	Rack or desktop
Certifications	FCC: 47 CFR FCC Part15, SubpartB, Class A CE-EMC: EN 55032: 2015+A1: 2020; EN IEC 61000-3-2: 2019+A1: 2021; EN 61000-3-3: 2013+A1: 2019+A2: 2021; EN 55035: 2017+A11: 2020; EN 50130-4: 2011+A1: 2014 CE-LVD: EN 62368-1: 2014



## **ANNEXURE - II- HARD DISK SPECIFICATION**

Digital Storage Capacity - 6 TB

Hard Disk Interface Serial -ATA-600

Connectivity Technology- SATA

Hard Disk Form Factor- 3.5 Inches

Hard Disk Description -Mechanical Hard Disk

Compatible Devices- Camera

Installation- Type Internal Hard Drive

Hard Disk Size- 6 TB

Hard Disk Rotational Speed -5400 RPM

## **ANNEXURE - III- IP CAMERA SPECIFICATION**

1/3 in. 2MP Progressive-scan CMOS Sensor

Triple-stream Encoding

Smart H.265+ and Smart H.264+ Dual Codec

4MP (2688 x 1520) at 30 fps, 2.8 mm Fixed Lens

Starlight Technology for Low-light Applications

Analytics+ Function – Perimeter Protection and Smart Motion Detection

True Wide Dynamic Range (120 dB) and Day/Night IR Cut Filter

Maximum IR LED Distance 50 m (164.04 ft)

Enhanced Power and Data Transmission Distances (ePoE)

ArcticPro Series Camera – Operational down to  $-40^{\circ}$  C ( $-40^{\circ}$  F)

IP67 Ingress Protection and IK10 Vandal Resistance

## **ANNEXURE - IV - PoE SWITCH(16 Port) SPECIFICATION**

<b>Uplink Ports</b>	2,RJ45, 1000Mbps; Transmission Distance: 0-100m
<b>Network Protocol</b>	IEEE802.3i/802.3u/802.3x/802.3af/802.3ab
<b>Switch Capacity</b>	20Gbps Full duplex
<b>Packet Forwarding Rate</b>	1.488Mpps/port
<b>PWR (Power Indicator)</b>	Light on: Powering, Light off: No Power
<b>PoE Ports</b>	16, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port
<b>Network Port</b>	10
<b>MAC Address Table</b>	2K
<b>PoE Standard</b>	IEEE802.3af, IEEE802.3at
<b>PoE Power Supply</b>	1/2(+), 3/6(-)
<b>Transmission Distance</b>	0-100m/1000Mbps or Port 7-8 Max. 250m/10Mbps via Cat.5e or more under Extend mode
<b>PoE Power Budget</b>	96W
<b>PoE Feature</b>	All ports support MDI/MDIX
<b>ESD</b>	Air discharge: 8KV ; Contact discharge: 6KV
<b>Surge Protection</b>	Common mode/RJ45 port: 4KV Differential mode/RJ45 port: 2KV Common mode/Power board: 2KV Differential mode/Power board: 2KV
<b>VLANs</b>	Support
<b>RJ-45 ACT Indicator</b>	Green light off: Link is disconnected Green light on: Link is connected Green light flash: Data Transmitting
<b>Watchdog</b>	Support
<b>Forwarding Mode</b>	Store-and-forward
<b>Power Source</b>	Built-in Power Supply, Input: 100-240V AC, 50/60Hz
<b>Power Consumption</b>	<5W
<b>Operating Temperature</b>	-10°C ~ 50°C
<b>Storage Temperature</b>	-40°C ~ 70°C

## **ANNEXURE - V - PoE SWITCH (16 Port) SPECIFICATION**

<b>Feature</b>	<b>Specification</b>
Network Standard	IEEE 802.3i IEEE 802.3u IEEE 802.3x IEEE 802.3ab IEEE 802.3af IEEE 802.3at
Port	16 10/100/1000Mbps RJ45 ports 2 Gigabit SFP ports
PoE	16 10/100/1000 Mbps RJ45
PoE Ports Indicator	18 Link/Act Indicator light 16 PoE indicator light 1 Power indicator light
Performance Backplane bandwidth:	36Gbps Packet forwarding rate: 23.8Mpps
Support	8K MAC address list depth
Total Power Budget	150W Single Port Max 30W
Power Source	100-240V/50-60Hz