

YADAVINDRA PUBLIC SCHOOL, PATIALA
TENDER DOCUMENT

SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF
CCTV SURVEILLANCE SYSTEM

Tender Reference No.	
Date of Issue	
Last Date for Submission	
Time	
Tender Opening	

Issued by: Yadavindra Public School, Patiala, Punjab

Yadavindra Public School, Patiala invites sealed quotations/tenders from reputed, experienced and authorised firms/agencies/system integrators for the **Supply, Installation, Testing and Commissioning of an IP-based CCTV Surveillance System**, including cameras, networking infrastructure, optical fibre connectivity, PoE switches, server room rack setup, cabling, accessories, configuration, testing and commissioning at the School Campus.

The bidder shall carefully inspect the proposed locations/site, assess the existing CCTV and network infrastructure and quote for a complete, functional and integrated CCTV surveillance solution.

1. SCOPE OF WORK

1. Supply of CCTV cameras and all associated networking equipment.
2. Installation of new CCTV cameras at locations identified by the School.
3. Replacement of existing cameras wherever required.
4. Integration of the new CCTV cameras with the existing CCTV surveillance infrastructure.
5. Supply, laying, dressing, termination and testing of CAT-6 UTP cable.
6. Supply, laying, splicing, termination and testing of Optical Fibre Cable.
7. Supply and installation of suitable PoE switches.
8. Establishment/upgradation of the Server Room setup, including 64U rack and associated accessories.
9. Configuration of IP addresses, network settings, recording systems and camera parameters.
10. Proper labelling of cameras, cables, switches, racks, patch panels and termination points.
11. Testing of camera video, audio, night vision, network connectivity, recording and playback.
12. Integration with the existing NVR/Server/Central Monitoring System, wherever technically feasible.
13. Provision of all required connectors, patch cords, fibre accessories, mounting hardware, junction boxes, power accessories and related consumables.
14. Testing and commissioning of the entire CCTV system.
15. Submission of complete installation documentation, network/camera details and final location-wise inventory.

2. TECHNICAL SPECIFICATIONS

A. 4 MP IP Indoor Dome Camera with Built-in Microphone

Make: CP Plus or Equivalent

- Minimum 4 MP Progressive Scan CMOS Sensor
- Minimum 4 MP resolution
- Fixed 2.8 mm lens
- H.265+ / H.265 / H.264 video compression
- Minimum 30-metre Infrared Night Vision
- Built-in microphone
- True WDR or equivalent technology
- IP67-rated body
- PoE support
- ONVIF compliance
- Operating temperature suitable for indoor and semi-outdoor installation
- Suitable for continuous 24×7 operation

- Compatible with the existing CCTV/NVR/network infrastructure of the School
- Minimum 3 Years Warranty

The camera model offered must be a currently supported model of the manufacturer and should not be an obsolete or discontinued product.

B. CAT-6 UTP Cable

Make: D-Link

Brief Specification (Must Comply):-

CAT 6 UTP Cable. Transmission frequency of 250 MHz (Minimum), Category 6 Unshielded Twisted 4 pair compliant with ANSI/TIA/EIA-568-C.2 & ISO/IEC 11801 Class E. 1000BASE-T (1Gigabit Ethernet) standard. Category 6 should operate on bandwidth up to 250MHz as per standard & tested up to 500MHz. ETL Verified & UL Listed. Conductor 23 AWG solid bare copper. Conductor Insulation material HDPE & Insulation diameter 1.0 - 1.45 mm nominal. Twisted in pairs with four pairs contained in LSZH jacket / sheath. Four twisted pairs separated by internal X shaped, full separator. Half shall not be accepted. Sheath LSZH. Cable outer diameter 6.1 mm nominal. Cable weight 13.6Kg/Box. Conductor Resistance: $\leq 9.38\Omega/100m$. Mutual Capacitance: $< 5.6nF/100m$. Resistance Unbalance: 5% Max. Delay Skew: $< 45nS$. Capacitance unbalance: $330pF/100m$. Nominal velocity of propagation of cable 69%. Each meter printed with sequential Length Counter. Temperature Range -20° to $+70^{\circ}C$. Need to submit transmission characteristics report per 100 meter. The report at least includes Insertion Loss, RL, NEXT & PSNEXT data. OEM for the cable Box & all copper Accessories from same OEM. OEM International certification for the ISO 45001, ISO 9001, ISO 14001, & ISO 14064-1. Only solid bare copper cable shall be accepted. CCA or sub-standard equivalent cable shall not be permitted.

C. Optical Fibre Cable

Make: D-Link or Equivalent

Brief Specification (Must Comply):-

O. F.Cable 06F or 12F Outdoor - Armoured Unitube SM - HDPE Sheath (OS1). Fiber type 9/125 / G.652D & Refractive Index should be 1.4670/1.4675. Standard ISO 11801, IEC 60793-1/60794-1-2 & ITU-T-REC G.652D. Testing methods in accordance with the following standard Telecordia : GR-20 Core, ISO : 11801. Jacket Thickness $1.8 + 0.2$ mm, Outer diameter should be 9 ± 0.3 mm. 3000N/100mm Crush Load (IEC 60794-1-2-E3). Bend Radius (IEC 60794-1-2-E11 & E6) should be Short Term 20D in mm & Long Term 10D in mm. Pulling Tension: Short Term 2000N, Long term 1000N pulling tension (IEC 60794-1-2-E1). Mode field diameter $9.2\mu m \pm 0.5$, Clad Diameter $125\mu m \pm 1.0$. Dispersion At 1285 - 1330nm should be ≤ 3.5 ps/nm.km. Dispersion At 1550nm should be ≤ 18.0 ps/nm.km. PMD value ≤ 0.2 (ps/km). Maximum Attenuation at 1310nm should be ≤ 0.36 dB/km. Maximum Attenuation at 1550nm should be ≤ 0.22 dB/km. Cabled Cutoff Wavelength should be ≤ 1260 nm. Operating Temperature should be -20 deg C to $+60$ deg C. All Passive of the same make. (Copper, Fiber & Racks). OEM Should have International certification for Industrial Cyber Security Capability (Like - IEC-62443-4-1:2018 or Equivalent). OEM should have Indian based operation at least for a period of 20+ years and should have an Annual Turnover of Rs. 100 Crores and above in any of last three consecutive Audited Financial years.

6 Port LIU for Optical Fibre Cable Termination:-

Make: D-Link or Equivalent

Brief Specification (Must Comply):-

LIU 12 Port Rack Mount - Loaded (LC) SM, 1U height, 19-inch rack mountable. Fiber optic LIU should include with LIU Box itself, Adapter Panel, Adapters & Pigtail as per requirement. Adapter panel - Cold Steel, 1.5mm Thickness. Rubber fiber slotted bracket built-in, metal splice shelf to protect the fibers. 4 Fiber spools Built-In for 900um tight buffered Fiber Storing. All Passive of the same make. (Copper, Fiber & Racks) Optical Fiber Pigtail – SC Type 1 Meter Provide a field installable Single mode SC pigtails to terminate fiber optic cables from cable-to-cable, cable-to-equipment & equipment-to-equipment. Utilize a UPC polishing on the tip to provide high yield during installation. Meet TIA/EIA 568.C.3 standards for repeatability. Buffer diameter 900um Tight buffer, Minimum bend Radius: Install :30mm, Retention Strength: 20N, Cable: 900um Buffered. SM fiber pigtail, the cable type shall be HDPE/LSZH with a diameter of 3.0mm / 2.0mm. Insertion Loss (Max) <0.3 db Max, Return Loss >= 50 db for UPC. Connector ferrule Ceramic, SC Type Simplex Type, Cable Color Yellow. Repeatability < 0.2dB 200 times Mating Cycle. Working Temp. -10 deg. C to + 70 deg. C, Storage Temp. -20 deg. C to + 70 deg. C

Optical Fibre Patch Cord- 2M:-

Make: D-Link or Equivalent

Brief Specification (Must Comply):-

PATCH CORD LC-LC SM DUPLEX LENGTH- 3m, 9/125µm Single mode G652D, Duplex Type, (EIA/TIA, IEC, ANSI). Physical Contact (PC) connectors return loss > 45 dB. Ultra Physical Contact (UPC) connectors return loss > 50 dB. Angled Physical Contact (APC) connectors return loss > 60 dB. Repeatability < 0.2dB 1000 times Mating Cycle. Working Temperature –10°C ~+70°C, Storage Temperature –20°C ~+70°C. All Passive of the same make. (Copper, Fiber & Racks).

D. 8 Port PoE Switch

Make: D-Link or Equivalent

Brief Specification (Must Comply):-

Layer 2 PoE Switch: 8 x 1G RJ-45 PoE Gigabit Ethernet Ports & 2 x 1G SFP Uplink Ports. 802.3at PoE+ & 802.3af Compliant, 130watt Power Budget. Switching Capacity 20 Gbps or more & Packet Forwarding rate 14 Mpps, Flash Memory 64 MB, DRAM Size 256 MB DDR3, Fanless, CPU Speed 500MHz. MAC Address 8K entries, IGMP Snooping v1/v2, IGMP v3 awareness, 256 IGMP groups, 64 static multicast addresses, IGMP Snooping Querier, Loopback Detection, 802.3ad Link Aggregation: groups/8 ports per group, LLDP, LLDP-MED, jumbo Frame 10k bytes, 802.1D, 802.1W, 802.1s, 802.3x, HOL Blocking Prevention, Port Mirroring One-to-One/Many-to-One, Multicast Filtering, MDI/MDIX, MLD snooping v1/v2 (256 groups). IEEE 802.3az. SPQ & WRR, IPv6 ND, DHCP snooping & DHCP server screening. ARP spoofing prevention. 802.1X port-based authentication. 802.1X RADIUS & local server database authentication. Port security secures using MAC address filtering.. Broadcast, multicast, & unicast storm control. Traffic Segmentation, SSH & SSL for IPv4 & IPv6. DoS attack preventio, IP + MAC + Port Binding, LLDP & LLDP-MED. Compact CLI, Telnet Server, TFTP Client, Configurable MDI/MDIX, SNMP v1/v2c/v3, SNMP Trap

, Backup/upgrade firmware, Upload/download configuration file, BootP/DHCP Client, System Log, Max. 500 log entries, SNTP, ICMP v6, IPv4/v6 Dual Stack , DHCP Auto Configuration, Time setting, SNTP, RMONv1, Trusted host, Dual image, Dual configuration. Operating Temperature -5 to 50°C, Storage Temperature -20 to 70°C, Operating/Storage Humidity 0% to 95% relative humidity. Certifications: CE, FCC, UL, EN 55032, EN 55024, EN 61000-3-2, IEC 61000-4-2, EN 61000-3-3, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, EN 62368-1, CISPR 22, FCC Part 15, ICES 003, IEC 63000, UL 60950-1, & CAN/CSA C22.2 No. 60950-1-07. MTC/TEC-ER. Power input should be 100 to 240 V AC 50/60 Hz internal universal power supply, ISO 45001, ISO 27001 & ISO 14001, IEC-62443-4-1:2018. All switches, access points, & fiber modules must be sourced from the same original equipment manufacturer (OEM).

D. 24 Port PoE Switch

Make: D-Link or Equivalent

Brief Specification (Must Comply):-

24 Port Gigabit Switch with Fiber Uplink 4 x RJ45/SFP 10/100/1000Mbps Combo Ports, 802.3at PoE+ & 802.3af 370watt Power Budget. Switching Capacity: 128 Gbps, MAC Address Table 8K, Packet Forwarding Rate: 41 Mpps, Flash Memory 64 MB, DRAM Size 256 MB DDR3, 2 x Internal Fans for Cooling & Air Circulation, CPU Speed 500MHz. MAC Address Table 8K entries, IGMP Snooping, IGMP v1/v2 Snooping, IGMP v3 awareness, 256 IGMP groups, 64 static multicast addresses, IGMP per VLAN, IGMP Snooping Querier, Loopback Detection, 802.3ad Link Aggregation: groups/8 ports per group, LLDP, LLDP-MED, jumbo Frame 10,000 bytes, 802.1D STP, 802.1W RSTP, 802.1s MSTP, 802.3x Flow Control, HOL Blocking Prevention, Port Mirroring One-to-One/Many-to-One, Multicast Filtering, Configurable MDI/MDIX, MLD snooping v1/v2 (256 groups). IEEE 802.3az. SPQ & WRR, IPv6 ND, DHCP snooping & DHCP server screening. ARP spoofing prevention. 802.1X port-based authentication. 802.1X RADIUS & local server database authentication. Port security to secures the access port based on MAC address. Broadcast, multicast, & unicast storm control. Traffic Segmentation, SSH & SSL for IPv4 & IPv6. DoS attack preventio, IP + MAC + Port Binding, LLDP & LLDP-MED. Compact CLI, Telnet Server, TFTP Client, Configurable MDI/MDIX, SNMP v1/v2c/v3, SNMP Trap , Backup/upgrade firmware, Upload/download configuration file, BootP/DHCP Client, System Log, Max. 500 log entries, SNTP, ICMP v6, IPv4/v6 Dual Stack , DHCP Auto Configuration, Time setting, SNTP, RMONv1, Trusted host, Dual image, Dual configuration. Operating Temperature -5 to 50°C, Storage Temperature -20 to 70°C, Operating/Storage Humidity 0% to 95% relative humidity. Certifications: CE, FCC, UL, EN 550 32, EN 55024, EN 61000 3 2, IEC 61000 4 2, EN 61000-3-3, IEC 61000 4 3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, EN 62368-1, CISPR 22, FCC Part 15, ICES 003, IEC 63000, UL 60950-1, & CAN/CSA C22.2 No. 60950-1-07. MTC/TEC-ER. Power input should be 100 to 240 V AC 50/60 Hz internal universal power supply, ISO 45001, ISO 27001 & ISO 14001, IEC-62443-4-1:2018. All switches, access points, & fiber modules must be sourced from the same original equipment manufacturer (OEM).

6U Wall Mount Rack

Make: D-Link or Equivalent

Brief Specification (Must Comply):-

- Outdoor Rack 6U x 550mm W x 500 mm D - Pole/Wall-Mount IP55 Rack with Optional Floor/Base-mounting provision in same Rack. Grounding & Bonding: Options available. 100% assured compatibility with equipment conforming to DIN 41494. Mounting Options: Pole/Wall-Mount with optional Floor/Base-mounting provision. Welded GI steel, 1.2mm to 1.5mm thickness, front accessibility. Front Door: Equipped with filter, louver, & unique key lock. Galvanized steel with anti-corrosive powder coating. Cooling: Two 90CFM, 230V AC fans on front door & top cover for rainwater & dust resistance. All Passive of the same make. (Copper, Fiber & Racks).

E. Server Room Setup with 42U Rack

Make: D-Link or Equivalent

Brief Specification (Must Comply):-

42U Closed Rack / Width 600 / Depth 1000 indoor rack for switch Mounting with Fan & power Strip, PDU, Hardware Mounting Kit. Depth adjustable mounting slots for verticals provide the better mounting flexibility maximizing the usable mounting space. Openings/Cut outs for field cable entry from Top & Bottom of the Rack. Provision to mount the cooling fans on the top panel. Powder coated finish with pretreatment process meeting all industry standards. Grounding & Bonding Options. Conforms to DIN 41494 or equivalent standard. 42U Closed Rack / Width 600/ Depth 1000. Lockable Toughened Glass Door, Steel Single, Steel Dual. Equipment Mounting : DIN Standard 10mm Sq. Slots / Direct M6 Tap. 19" Mounting angles made of formed steel. Top & Bottom Cover : Welded to Frame, Vented & Field Cable entry exit cut outs. Mounting Option : Castor wheels (Front 2 wheels with Break & rear without break) Or Levelers or Base plinth. Accessories: Doors & Side Panels, Power Distribution Units, FHU with 4 FAN 360CFM, Jacking Feet, Mounting Hardware-(Pack of 20), Vertical Power Distribution Unit with 12 x 5/15 sockets Round Pin, 230 Volts AC, 32 Amp with Plug, Horizontal Cable Manager-1U-Loop, Casters Set of 4, Adjustable Levelers set of 4. Standard Color: Black or Grey. Static Load: 300 kgs. The OEM must possess international certifications for ISO 45001, ISO 9001, ISO 14001, ISO 27001, ISO 14064-1. The OEM should have Indian-based operations for a minimum of 20 years, demonstrating a long-standing presence & experience in the industry.

3. GENERAL TERMS & CONDITIONS

1. The bidder shall supply, install, test and commission all equipment included in the approved work order.
2. All supplied equipment shall be new, genuine, unused and of current production.
3. Refurbished, repaired, second-hand, discontinued, obsolete or grey-market equipment shall not be accepted.
4. All equipment shall be compatible with the existing CCTV infrastructure of Yadavindra Public School, Patiala.

5. The bidder shall be responsible for checking compatibility of the proposed cameras, switches, fibre connectivity and networking equipment with the School's existing NVRs, servers, switches and monitoring infrastructure before submission/execution of the work.
6. A minimum warranty of three years shall be provided on all supplied equipment unless a higher warranty is specified by the manufacturer.
7. Preference shall be given to equipment from reputed manufacturers having a proven service network and long-term product support.
8. The proposed equipment should have an expected service life of at least ten (10) years, and spare parts, accessories, repair services and technical support should remain reasonably available during this period to facilitate maintenance and future replacements.
9. The bidder shall provide manufacturer's product datasheets of all major equipment along with the bid.
10. The exact Make and Model Number of the camera, PoE switch, optical fibre cable, CAT-6 cable, rack and other major components shall be clearly mentioned in the technical bid.
11. Any deviation from the prescribed technical specifications shall be clearly indicated separately. Failure to disclose deviations may lead to rejection of the bid.
12. All cabling, conduit, casing, connectors, terminations, patch cords, labelling, testing and documentation required for successful commissioning shall be included in the quoted rates unless separately mentioned in the BOQ.
13. All cables shall be routed in a professional manner and shall be properly dressed, supported and labelled.
14. Exposed and loose cabling shall not be accepted.
15. The bidder shall ensure that installation work does not damage the existing buildings, electrical systems, network infrastructure, furniture or other School property.
16. Any damage caused during installation shall be rectified by the bidder at its own cost.
17. The bidder shall ensure adequate safety precautions during installation.
18. Personnel deployed by the bidder shall follow School security and safety regulations at all times.
19. The School shall have the right to inspect the materials/equipment supplied before or during installation.
20. Material found to be defective, sub-standard, damaged or not conforming to the approved specifications shall be replaced by the bidder without any additional cost to the School.

4. SITE INSPECTION

The bidder is advised to carry out a detailed site inspection before submitting the quotation/tender.

The site inspection should include assessment of:

- Existing camera locations
- Proposed new camera locations
- Existing CAT-6 network
- Optical fibre connectivity
- Network switches
- Existing NVR/Server infrastructure
- Server Room
- Rack requirements
- Electrical power availability

- Earthing
- Cable routing
- Inter-building connectivity
- Distance limitations
- Existing camera compatibility

Submission of the tender shall be deemed to mean that the bidder has understood the site conditions and scope of work.

No additional claim arising solely due to failure to inspect the site shall ordinarily be entertained after award of the work.

5. TECHNICAL BID REQUIREMENTS

1. Firm/Company profile.
2. Complete postal address and contact details.
3. GST Registration Certificate.
4. PAN details.
5. Authorisation certificate/dealership certificate, wherever applicable.
6. Details of experience in CCTV/IP surveillance/networking projects.
7. Details of similar projects completed.
8. List of proposed Makes and Models.
9. Original/OEM product datasheets.
10. Warranty details.
11. Technical compliance statement against each tender specification.
12. Details of after-sales service/support arrangements.
13. Details of service/support centre.
14. Proposed implementation methodology.
15. Expected completion period.
16. Any technical deviation, if applicable.

The School reserves the right to seek documentary evidence regarding the bidder's capability, experience, authorisation and technical competence.

6. FINANCIAL BID

The Financial Bid shall clearly indicate:

- Item description
- Make
- Model
- Quantity
- Unit rate
- GST percentage
- GST amount
- Total amount
- Installation charges, if any
- Cabling charges, if any

- Splicing/termination charges
- Configuration/testing charges
- Any other applicable charges
- Grand Total

The quotation should clearly specify whether the prices are inclusive or exclusive of GST.

All costs necessary to make the system fully operational shall be included.

No hidden or unspecified charges shall be accepted after placement of the Purchase/Work Order.

7. BILL OF QUANTITIES – SUGGESTED FORMAT

Sr. No.	Item Description	Make	Model	Qty.	Unit Rate	GST	Total Amount
1	4 MP IP Indoor Dome Camera with Built-in Microphone	CP Plus or Equivalent					
2	CAT-6 UTP Cable	D-Link					
3	Single Mode Optical Fibre Cable	D-Link or Equivalent					
4	Gigabit PoE Switch	D-Link or Equivalent					
5	64U Floor Standing Server Rack Complete with Accessories						
6	Fibre Splicing/Termination Accessories						
7	Network/Fibre Patch Cords						
8	Installation, Configuration, Testing & Commissioning						
9	Other Required Accessories, if any						

Grand Total: ₹ _____

8. INSTALLATION & COMMISSIONING

The successful bidder shall carry out installation in consultation with the School's IT Department/authorised representative.

- Camera mounting and alignment
- Network configuration

- Camera IP allocation
- Audio configuration
- PoE connectivity
- Night vision testing
- Camera naming
- Recording configuration
- NVR/server integration
- Playback testing
- Network connectivity testing
- Fibre connectivity testing
- Cable termination
- Cable labelling
- Rack dressing
- Final testing of every camera
- Removal of installation debris

Each camera shall be individually tested for proper image quality, field of view, audio, night vision, recording and playback.

9. WARRANTY & AFTER-SALES SUPPORT

1. Minimum warranty shall be three years for all major supplied equipment.
2. Warranty shall commence from the date of successful commissioning and acceptance by the School.
3. During the warranty period, defective equipment shall be repaired/replaced without additional cost, subject to standard warranty conditions.
4. The vendor shall provide timely technical support during the warranty period.
5. The bidder shall clearly mention the expected response time for service complaints.

10. PAYMENT TERMS

1. No payment shall be considered merely on delivery of material unless specifically approved by the School.
2. Payment shall be processed only against proper invoice and verification of supplied material/work.
3. Final payment shall be released after successful installation, testing, commissioning and acceptance of the complete system by the School.
4. The School may withhold payment against defective, incomplete, non-functional or non-compliant items until satisfactory rectification.

11. TAXES & STATUTORY COMPLIANCE

All applicable taxes, duties, levies and GST shall be clearly indicated.

The successful bidder shall comply with all applicable statutory requirements while carrying out the work.

12. BID SUBMISSION

The tender/quotation should be submitted in a sealed envelope clearly superscribed:

“TENDER FOR SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF CCTV SURVEILLANCE SYSTEM – YADAVINDRA PUBLIC SCHOOL, PATIALA”

The bid should contain separate:

- A. Technical Bid
- B. Financial Bid

Tender Submission Address:

The Headmaster
Yadavindra Public School
Patiala, Punjab

Last Date for Submission: _____

Time: _____

Date/Time of Opening of Tender: _____

21. BIDDER'S DECLARATION

We hereby certify that:

1. We have carefully read and understood all the technical specifications, scope of work and terms & conditions of this tender.
2. The equipment quoted by us is genuine, new and conforms to the specified technical requirements.
3. We have inspected/understood the site conditions and existing CCTV/network infrastructure.
4. We shall complete the supply, installation, testing and commissioning as per the specifications and instructions of Yadavindra Public School, Patiala.
5. We agree to provide the prescribed warranty and after-sales support.
6. We accept all the terms and conditions mentioned in this tender document.

Name of Firm	
Authorised Signatory	
Name	
Designation	
Address	
Mobile No.	
Email	
GSTIN	
Date / Place	

Signature with Firm's Seal

— *End of Tender Document* —