

Guidelines of CCTV Installation in VTP Centres

Description in general:

The System proposed is IP based CCTV System.

The objective is to provide high degree of IP based Electronic surveillance to the training centres of vocational training providers registered to run vocational training under Mukhya mantri Kaushal Vikas Yojna. It is mandatory to have recorded video of all cameras to be stored at least for 30 days to facilitate investigations of a reported case.

All equipment and materials used shall be standard components from the current line/range of products that are regularly manufactured and used in the system.

The main components for installing CCTV systems are: -

1. High Resolution IP Camera
2. Network Video Recorder (NVR)
3. POE Switch
4. Storage
5. HD LED Monitors
6. Cables and accessories, etc.

Detailed Specification of Components

1. Day/Night IP HD camera with IR (minimum 2 megapixel): -

| Sr. No. | Parameter | Specification |
|----------------|------------------|---|
| 1 | Image sensor | 1/3" or better type CMOS color Sensor |
| 2 | Effective Pixels | 1920 X 1080 |
| 3 | Scanning System | Progressive Scan |
| 4 | Resolution | 1080p Full HD images up to 25/30 fps |
| 5 | Frame Rate | 25 FPS/30 FPS for 1920 X 1080p at H.264 Compression or better |

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|---|-------------------|---|
| 6 | Compression | H.264 Compression (main profile/high profile) and MJPEG |
| 7 | Bit Rate | 32kbps – 10Mbps |
| 8 | Intelligent Video | Motion detection etc. |

2. NVR:-

| Sr. No. | Parameter | Specification |
|----------------|----------------------------------|---|
| 1 | IP Camera Inputs | As Required |
| 2 | Video O/P | 1 HDMI , 1 VGA |
| 3 | Compression | H.264 / MJPEG |
| 4 | Video Resolution | 2560 X 1920 , 2048 X 1536, 1920 X 1080, 1280 X 720 |
| 5 | Recording Resolution | 1920 X 1080 |
| 6 | Recording Speed | upto 30 fps per channel |
| 7 | Video Detection | Motion, Video Loss, Camera Blank |
| 8 | Hard Disk | Min 2 SATA ports , 2TB , Raid (Redundancy) |
| 9 | Smart Phone Surveillance Support | iPhone, iPad, Android, Windows Phone |
| 10 | Protocol | IPv4/IPv6, HTTP, TCP/IP, UDP, UPnP, RTSP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter |
| 11 | Recording Mode | Manual , Schedule , STOP, Alarm and MD |
| 12 | Search Mode | Time/Date , Alarm , Motion Detection, Exact Search (accurate to second) |
| 13 | Playback | Play, Stop, Pause, Rewind, Fast Play, slow play, full screen, backup |
| 14 | Backup Mode | USB Device / Network |
| 15 | Interface Ports | USB 2.0 port, USB 3.0 port , 1 RS485 , 1 RS232, 1 RJ45 |
| 16 | Ethernet Ports | 1 RJ-45 port (10/100M Base T) |
| 17 | Power Supply | AC 100V~240V 50/60Hz |
| 18 | Product warranty | atleast 2 years |

3. POE Switch: -

| Sr. No. | Parameter | Specification |
|---------|---------------------------|---|
| 1 | RJ45 ports | Minimum 8 nos. 10/100/1000 BASE-T Ethernet Ports. Uplink port should have sufficient speed to avoid network congestion, preferably network should not be loaded more than 70% at any stage, fully IEEE 802.3 compliant. |
| 2 | Protocols and compliances | The switch should provide all standard protocols and compliances |
| 3 | Power input | Dual redundant power input, PoE |
| 4 | Mounting | Rackmount, wall or desktop mounting options |

4. Storage: -

| Sr. No. | Parameter | Specification |
|---------|--------------------|---------------------------------------|
| 1 | Hard Disk Type | Surveillance Hard Disk |
| 2 | Capacity | 2 TB |
| 3 | Data Transfer Rate | Minimum Data transfer rate 6000 mbps. |

5. HD LED Monitors: -

| Sr. No. | Parameter | Specification |
|---------|--------------------|---|
| 1 | Monitor | Minimum 32" , Full HD |
| 2 | Display Resolution | 1080p and minimum viewing of 16 cameras |
| 3 | Backlight Module | Dynamic Edge LED |
| 4 | Video Signal | 480/60i, 480/60p, 1080/60i, 1080/50p (HDMI) |

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|---|----------------------|--|
| 5 | MPEG noise reduction | Yes |
| 6 | Computer Input | HDMI/Audio in, USB 2.0, Ethernet connection, HD15 PC input |
| 7 | Video Colour System | NTSC (3.58 MHz, 4.43 MHz), PAL, PAL60, SECAM |

6. CAT 6 Cables (Length as per requirement):-

| Sr. No. | Parameter | Specification |
|---------|----------------------|--|
| 1 | Type of Cable | Unshielded Twisted Pair (UTP) CAT 6 cable Pair-shielded 100 Ohm installation cable with overall braided screen, suitable for transmission frequencies of up to 600 MHz |
| 2 | Conductor | 4 pair UTP armoured cable 23 AWG Solid bare Copper |
| 3 | Primary Insulation | High Density polyethylene |
| 4 | Outer Sheath | FR-PVC Insulation thickness 0.2 mm nominal |
| 5 | Shielding | Screened to ensure protection against EMI and for cross talk |
| 6 | Application standard | ANSI/TIA-568-C.2 category 6 ISO 11801 Class E |
| 7 | Application | Indoor / outdoor installation |

7. UPS/Invertors with in-built batteries for backup as per requirements.