Specification for setting up of CCTV – IP Surveillance System in Court Complexes (DRAFT)

(A) Dome Camera

Camera Characteristics	Minimum Specifications	Compliance (Y/N)	Document Reference
Quality of image	Minimum 5 Megapixel progressive-scan HD CMOS		
OEM	All proposed Cameras should be from single OEM.		
Lens	3 - 9 mm, DC- Iris		
Field of View	36° to 88° (horizontal,) 27° to 67° (vertical) and 44° to 110° (diagonal)		
Day/night operation	The camera should provide day/night functionality automatically switches to night mode in low-light scenes.		
Minimum Illumination / Light Sensitivity	Color mode: F1.2 @ 0.4 lux Black-and white mode: F1.2 @ 0.2 lux		
Video Compression	H.264 Motion JPEG		
Resolutions and frame rates (H.264)	• Single-stream H.264 or MJPEG up to 1280 x 960 @ 30 fps • Dual-stream H.264/ MJPEG		
	○ Primary stream programmable up to 1280 x 960 @ 30 fps		
	○ Secondary stream programmable up to 800x600 @ 15 fps		
PoE	It should be PoE enabled and outdoor ready with IK10 enclosure		

Camera Adjustment Angle	Pan: 350°		
	Tilt: 72°		
	Rotate: 350°		
Digital I/O (Audio I/O, Alarms)	Audio in x 1		
	A/V out x 1		
	DI x 1		
	DO x 1		
Certification	The system shall be ROHS, WEEE, ISO-14001 and REACH compliant.		
	It should be FCC, CE, UL Certified.		
ONVIF	ONVIF 2.0 Support		
Local storage (S.D or Micro SD)	Micro SD/SDHC of Minimum 128 GB		
Supported Protocol	DHCP, HTTP, HTTPS, NTP, RTP, RTSPSMTP, SSL/TLS, TCP/IP, Secure Real-Time Transport Protocol (SRTP),Bonjour, SNMP, and Secure Shell (SSH)		
Application-ready platform	Camera should have option to add functions by installing and running applications directly on the camera.		

(B) High Definition Outdoor 2MP Camera with IP67 Outdoor enclosure and IR Light

Camera Characteristics	Minimum Specifications		
Image sensor	1/2.7" Progressive Scan HD CMOS		
Lens	3.6 to 9 mm or better		
Field of View	38°~95°(horizontal), 22° ~ 53° (vertical) 43°~108° (diagonal)		
Day and Night	Automatic/manual/scheduled		
Minimum Illumination / Light Sensitivity	Color mode: F1.2 @ 0.5 lux Black and white mode: F1.2@ 0.03 lux with IR illuminator		
Light sensor	Senses the level of ambient light to determine when to switch day/night mode.		
Video Compression	H.264/ Motion JPEG		

Resolutions and frame rates (H.264)	1920 x 1080 @ 30 fps (1080p), 1280 x 720 @ 30 fps (720p) 1024 x 576 @ 30fps, 960 x 544 @ 30 fps, 704 x 480 or 576 @ 30 or 25fps (4CIF)		
PoE	It should be PoE enabled and outdoor ready with IK10 enclosure		
Certification and Housing	IP67- and IK10-rated housing, Camera should have sun shield, wall mount bracket and waterproof Ethernet Cable from same OEM		
Remote, Auto Focus support	Camera Should remote Zoom and Autofocus		
Motorized Lens	Yes		
Digital I/O (Audio I/O, Alarms	Audio in x 1		
	A/V out x 1		
	DI x 1		
	DO x 1		
Audio/Video out port	Camera should allow the connection of an optional Y cable or mini cable with BNC connector. Camera should allow to connect a video monitor to the mini cable with BNC connector.		
	Camera should have option to connect an external microphone.		
	Camera should have provision for fine tuning the focus.		
Local storage (S.D or Micro SD)	Camera should have Micro SD/SDHC (128 GB)		

Supported Protocol	DHCP, HTTP, HTTPS, NTP, RTP, RTSP SMTP, SSL/TLS, TCP/IP, Secure Real-Time Transport Protocol (SRTP), Bonjour, SNMP, and Secure Shell (SSH) Differentiated-services-code-point (DSCP) marking and class-of-service (CoS) marking		
ONVIF	ONVIF 2.0 Support		
Certification	The system shall be ROHS, WEEE, ISO-14001 and REACH compliant.		
	It should be FCC, CE, UL Certified.		
Auto Detection & Configuration	The camera should be automatically discovered and configured when connected to VMS or Network Switch		
	All proposed Cameras should be from single OEM.		

HD IP PTZ Camera

S. No.	Camera Characteristics	Minimum Specifications	Compliance (Y/N)	Document Reference
1.	Image device	1/3" CCD/CMOS/MOS or better		
2.	Horizontal Resolution	Minimum 2MP or better as applicable		
3.	Frame Rate	30 FPS (Minimum) in all resolutions		
4.	Compression	MPEG4/H.264/MJPEG/MXPEG support		
5.	Streaming	Minimum 3 (three) streams		
6.	Alarm output	Minimum 1		
7.	Alarm input	Minimum 1		
8.	Focus Mode	Auto/Zooming/One Push Manual		
9.	Panning Range & Speed	0 deg to 360 deg endless, max 200 deg per second		
10.	Tilting Range and Speed	0 to 15 deg above horizontal to 90 deg down, max 120 deg per second		
11.	Presets	50 presets or higher		
12.	Dome ID	Minimum 100		
13.	Group Touring	Auto track, Auto pan, preset control, patrol modes		
14.	Pre/Post Alarm buffer	Yes		
15.	ID/Password	User ID/Password		

		HTTP (SSL/TSL)		
17.	Physical Layer	10/100 base Tx Ethernet		
18.	Protocol	Minimum TCP/IP, HTTP, RTP, RTSP		
19.	IP Support	Static/dynamic or both		
20.	Remote Administration	Remote configuration and status using web based tool		
21.	System Update	Remote system update over Network using web client		
22.	PC Client	PC application client with a channel recording feature support		
23.	Web Client	Viewer through HTTP(min.) System Configuration Setting/Streaming		
24.	Simultaneous Connection	5 users or more		
25.	Lens Type	Varifocal Min 4.3 – 129 mm or equivalent or better		
26.	Wide Dynamic Range	True WDR 100dB or equivalent or better		
27.	Auto Exposure	Automatic Level Control/Electronic Level Control		
28.	Minimum illumination	Color: 0.3 lux, F1.4 B/W: 0.05 lux, F1.4		
29.	Signal Process	Digital Signal Process		
30.	Motion Detection Zones /	4 or higher privacy zones		
31.	Auto Gain Control	Yes		
32.	Electronic Shutter	1/50-1/1000 or better (in lieu of verification of electronic shutter speed OEM certificate shall be acceptable)		
33.	White Balance	Yes		
34.	Day and Night	Yes (As per minimum illumination)		
35.	Iris Control	Yes for Varifocal Cameras		
36.	Operating Temperature	-10 to 55 degree Celsius & 40 degree Celsius at 95% RH		
37.	Power Source	Device shall work on PoE . Suitable POE Power injector or 230V AC power adaptor shall be included.		
38.	On Screen Display	Yes (English)		
39.	Housing - Indoor	Plastic/Aluminium Construction, IK10 rated.		
40.	Housing - Outdoor	Plastic/Aluminium Construction with IP-66, built in heater/IK10 rated, inbuilt dehumidification device, preferably outer glass body shall be coated with special coating to remove rain water automatically to have clear view		
41.	Mounting bracket	Standard wall mount for indoor& pole mount for outdoor as indicated in the supply order		

HD Rugged PTZ Camera

S. No.	Camera Characteristics	Minimum Specifications	Compliance (Y/N)	Document Reference
1.	Image device	1/3"CCD/CMOS/MOS or better		
2.	Horizontal Resolution	2MP or better resolution		
3.	Frame Rate	30 FPS (Minimum) in min 720p or better		
4.	Compression	MPEG4/H.264/MJPEG support		
5.	Streaming	Minimum 3 (three) streams		
6.	Alarm output	Minimum 1		
7.	Alarm input	Minimum 1		
8.	Focus Mode	Auto		
9.	Panning Range & Speed	0 deg to 360 deg endless, max 100 deg per second, gear drive (belt drive not accepted)		
10.	Tilting Range and Speed	Pan: 360° endless, tilt: Upright : −50° to +90° Forward tilt : −90° to +90° Hanging : +30° to −90°		
11.	Presets	250 presets or higher		
12.	Dome ID	16 Minimum		
13.	Image Stabilisation	Hardware shall be designed for withstanding upto 215 Km/hr wind speed backed by additional internal software based image stabilisation		
14.	Inbuilt IR	150 mtrs adaptive IR		
15.	ID/Password	Multilevel user ID/Password		
16.	Encryption	HTTP (SSL/TSL)		
17.	Physical Layer	10/100 base Tx Ethernet		
18.	Protocol	Minimum TCP/IP, HTTP, RTP, RTSP		
19.	IP Support	Static/dynamic or both		
20.	Remote Administration	Remote configuration and status using web based tool		
21.	System Update	Remote system update over Network using web client		
22.	PC Client	PC application client with a channel recording feature support		
23.	Web Client	Viewer through HTTP(min.) System Configuration Setting/Streaming		
24.	Simultaneous Connection	5 users or more		
25.	Lens Type	Varifocal Min 4.3 – 129 mm or equivalent or better		
26.	Wide Dynamic Range	True WDR 100dB or equivalent or better		
27.	Auto Exposure	Automatic Level Control/Electronic Level Control		
28.	Minimum illumination	Color: 0.3 lux, F1.4 B/W: 0.05 lux, F1.4		
29.	Signal Process	Digital Signal Process		

30.	Motion Detection	4 or better		
31.	Auto Gain Control	Yes		
32.	Electronic Shutter	1/50-1/1000 or better (in lieu of verification of electronic shutter speed OEM certificate shall be acceptable)		
33.	White Balance	Yes		
34.	Day and Night	True D/N Yes (As per minimum illumination)		
35.	Iris Control	Yes for Varifocal Cameras		
36.	Operating Temperature	-30 to 55 degree Celsius at 90% RH		
37.	Power Source	Device shall work on PoE . Suitable POE Power injector or 230V AC power adaptor shall be included.		
38.	On Screen Display	Yes (English)		
39.	Housing - Indoor	Plastic/Aluminium Construction, IK10 rated.		
40.	Housing - Outdoor	Plastic/Aluminium Construction with IP-67/IK10 Rated,Built in wiper, built in defroster, inbuilt dehumidification device, outer body shall be corrosion resistant in salty environment like costal area		
41.	Mounting bracket	Standard wall mount for indoor& pole mount for outdoor as indicated in the supply order		

VIDEO MANAGEMENT SERVER (HARDWARE & SOFTWARE)

SNO	General Requirement	Compliance (yes/no)	Document Reference
1	The proposed video management system should be able to support up to 40 CCTV Cameras or based on requirement		
2	In the event of the camera losing connectivity with the central servers, the camera should automatically start recording on the local storage. Once the connectivity with the central server is restored, these local recordings should be automatically merged with the server based recordings.		

3	The proposed solution should be supplied with required hardware, software / Appliance and local storage in high availability mode to keep archival for minimum 60 days. The solution should have recording, database and management servers in HA Mode (auto failover) with adequate configuration for best performance The server should be capable to configure for tape archival for further retention period of minimum six		
4	One Redundant recording server shall be provided for each 1 No's of working recording servers. Each recording server shall be capable of handling up to 200 Mbps traffic and shall provide sufficient spare capacity. The system should support automatic failover for recording servers. The allocation of Cameras to recording servers shall be done		
5	VMS should support video streams up to 30 Frames per Second.		
6			
7	The VMS should have user interface that provides one-click access, drag-drop, context menu, shortcut keys, customizable GUI etc.		
8	Simple, clear documentation including User Guides (how to use the product) and Technical Reference Manuals (quick reference on functions and procedures) shall be submitted.		
9	• System should be able to implement software upgrades without requiring all hardware components to be reconfigured. • Automatic fault tolerance for robust system uptime and Distributed database and video storage. • The system should be able to define critical cameras and provision to record critical cameras		
10	Roles based user management: Users, roles, rules and privileges should be stored on the central VMS server.		

11	Recording Server: • The System should not restrict the number of recording servers • Should support dual streaming • Should allow each stream to be viewed independently by client viewer. • Recording from connected cameras should be stored in databases. • Should support multiple storage formats		
12	There should be customizable recording retention period for specific camera, group, area etc.		
13	Should support at least 5 concurrent remote users		
14	Automatic check & update of hardware drivers & firmware free of cost VMS version upgrade at no		
15	The VMS should have ability to easily install, configure, modify, search and remove surveillance devices with automatic discovery of IP devices.		
16	Advanced option to install other devices like Analog cameras, encoders, microphone-		
17	Provision for primary and backup storage settings for individual camera feeds.		
18	The VMS should have ability to configure multiple streams with different quality parameters e.g. Codec (H.264, MPEG, JPEG) , resolution, frame & bit rate etc.		
19	Should support for full duplex audio		
20	Basic recording options [Full, Scheduled recording , Motion detection recording, external/internal hardware or software events / trigger based		
21	Advanced recordings options [Video only, Audio only, Video plus Audio, Retention rules, Archive/backup rules, and storage limits etc.]		
22	PTZ configuration including presets, patterns, patrolling, masking, priority and permissions.		
23	It should have support for browser based administration and monitoring		
24	Multiple monitor support: The system should allow connecting multiple monitors on single client workstation (loaded with suitable graphics card) and display different contents on each of the connected		
25	PTZ controls: When PTZ is deployed and enabled, system should offer a separate control panel for		

26	The VMS System should allow creating a still image from live or recorded feed.		
27	Digital zoom to enlarge portion of an image		
28	The VMS should have provision to Start/Stop Recording manually		
29	Evidence export feature: The system should allow users to export audio/video evidences in open format.		
30	Video Lock: The system should allow users to lock the relevant portion of video recording.		
31	The system should have in-built event/alarm management module that allows generating, distributing, storing, tracking and reporting of incidents and events as they occur. Send email and SMS notifications to respective users.		
32	It should be able to generate customized reports		
33	The system should have Inbuilt diagnostic and auto correction utility		
34	The facility should be there to extract & save the video footages / images on CD, DVD, USB, External Storage etc.		

Access Control System				
S. No.	Access Control System Characteristics	Minimum Specifications	Compliance (Y/N)	Document Reference
(A) Biometric Finger Scan Reader				
1.	Technology	iClass or Desfire or equivalent		
2.	Security	64 bit or AES crypto authentication keys. The data flow between card & Reader should be encrypted		
3.	Function	Should be configured as a Reader – Enroller, Enroller Only & Reader Only (All three are mandatory)		
4.	Enrolment of fingerprint templates iClass Smart Cards	Yes		
5.	Read Range	Minimum 3.5"		

6.	Fingerprint Sensor	Optical		
7.	Sensor Resolution	Minimum 500 dpi		
8.	False Acceptance Rate	Less than 0.01%		
9.	False Rejection Rate	Less than 0.01%		
10.	Fingerprint Enrolment Software	Yes		
11.	Technology Compliance	iClass 15693 or 14443		
12.	Certifications	UL /CE		
13.	Battery Backup	Rechargeable Lithium Ion		
14.	LED Indicators	Three high intensity LED indicators red, amber and green		
15.	LCD panel	Monochrome Graphics supertwist LCD with backlight		
	(B) Controller			
16.	Reader Inputs	Min 18 readers to be connected		
17.	Universal Inputs	Six		
18.	Tamper Input	One		
19.	Digital Lock Inputs	Two		
20.	Processor For Reader Inputs	Dedicated Processor for each Reader		
21.	Communication	10/100 or higher Ethernet Port		
22.	Memory	Minimum 1000 personnel Records and scalable to 10000		
23.	Area Lockdown Support	Yes		
24.	Real Time Clock	Yes		
25.	Encryption	128-bit		
26.	SNMP Network Management support	Yes		
27.	Visual Indicator	Yes		
28.	Mounting	Wall / Ceiling Mount		
29.	Battery Backup	5 hours		
30.	Technology Compatibility	Wiegand		
31.	Card Reader Power	5V DC & 12V DC (Jumper Selectable)		
32.	Wiring Distance	150 meters (Wiegand)		
33.	Indicator LED	Yes		
34.	Push Button Switches	Yes (For clearing the memory & Resetting the IP Address)		
35.	Offline Mode Operation	Yes (In the event of Network failure)		
36.	Enclosure	Yes		
37.	Certifications	UL /CE		

Access Control Room Additional Features

38.	LCD Display (40 inch display)			
39.	UPS- 5KVA			
40.	Desktop (All- in-One i3)			
41.	LAN Cable-Cat 6 cable for connecting control room to each camera			
42.	Power distribution through UPS			
43.	Access Control Smart Cards			
44.	Trained Manpower (Surveillance Administrator (B. E., B. Tech, MCA graduate with 1 year relevant experience)			
45.	PoE Switch			

Additional equipment that may be considered for implementation				
46.	Layer 3 stackable switch with 12 SFP Ethernet			
47.	Industrial grade layer 2 managed switch with 08 ports 10/100/1000 Mbps GE ports			
48.	1000BaseT SFP module for L3 switch			
49.	Ruggedized SM SFP module for Industrial Grade switch			
50.	SM SFP module for layer 2-8 Gigabit POE Switch			
51.	Other Networking accessories like 6/24 ort LIU, Splice trays, loaded adopters and blank plates, UTP and optical patch cords, pigtails, 9U/36U rack and junctions			
52.	Rack for Switch			
53.	Unified SAN storage of 10 to 100 TB depending on the requirement			
54.	Firewall as per requirement			