

Tender Specification

CCTV Camera Minimum Requirement

1. All proposed cameras should be CE, FCC, UL Certified.
2. Dome & Bullet Camera should have 5MP Resolution @ 30fps.
3. Dome & Bullet Camera should have Built-in micro-SD card slot support up to 1TB (Encrypted Storage)
4. Dome & Bullet Camera should have dual power supply, PoE & 12VDC support power supply failover.
5. PTZ Camera Should have 32x optical & 16x digital Zoom with 200m IR.
6. NVR Should have 192Mbps/192Mbps (incoming/outgoing) Network bandwidth.
7. NVR Should support Dual stream recording.
8. Surveillance System should be compatible with any VMS
9. Storage should follow the Kathmandu Metropolitan city CCTV guidelines and 120 days of CCTV recording must be stored.
10. Surveillance equipment should be NOC/SOC system friendly.
11. Centralized, collaborative network design diagram should be submitted.

#	OEM Pre-Qualification Criteria - CCTV	Compliance (Yes / No)	Remarks
1	The MAC address of the IP cameras must be registered in the same name of OEM supplying the cameras. The API/SDK of VMS shall be available on the OEM's official Website. OEM to submit a valid documentary Proof for the same.		
2	The OEM for IP Cameras should have never been blacklisted / banned / removed from any govt. /PSU / Consulates anywhere in the world. The proposed camera OEM should be a member in any of the present "ONVIF Organization Committee Technical Committee". The OEM should never have been banned by ONVIF. Declaration to be submitted with bid duly signed by the country Head/Director/CEO of OEM. For ONVIF Shall be available on public portal of ONVIF.		
3	The OEM for IP Cameras must have a self-owned service/support and RMA center including with adequate number of Level 2 & Level 3 service engineers.		
4	All The camera, NVR should be from same OEM		

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5MP Motorized V/F IR Dome

SI No	Parameters	Minimum Specification	Bidders Compliance (Yes/No)	Remarks
1	Type	5MP Motorized V/F IR Dome		
2	Image sensor type	1/2.8" Progressive Scan CMOS Sensor or better		
3	Resolution	5MP resolution		
4	Compression	H.265 / H.264 / MJPEG		
5	Multi-streaming	Triple streams		
6	Focal length	2.7mm to 13.5mm Motorized Varifocal Lens		
7	Max. Frame Rate	30fps		
8	Built in IR	Up to 50m or better		
9	Wide Dynamic Range	True WDR, 120dB		
10	Electronic Shutter Speed	1/4s to 1/32000s		
11	Memory Capacity	1GB RAM and 512MB Flash		
12	S/N Ratio	≥52 dB AGC ON		
13	Quality Control	VBR, CBR & CVBR supported		
14	Audio	Bi-directional audio (2-way), 1IN/1OUT		
15	Audio Noise Reduction	Supported		
16	Power Supply	PoE & 12VDC support power supply failover		
17	Video Output	CVBS video output (BNC × 1)		
18	Hardware Reset & Factory Reset Button	Yes		
19	Edge Storage	Built-in micro-SD card slot, up to 1TB (Encrypted Storage)		
20	ONVIF conformant	ONVIF Profile S, G, T		
21	Iris control	P-Iris		
22	Event Triggers	FTP Upload, CIFS, SMTP, Snapshots, SD Card Record; SIP Call, Audio clip playback		

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23	Analytics	Object Classes: Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Class Trigger Rules: Object Detected, Perimeter, Linger, Dwell, Abandoned / Removed, Enter, Exit, Crowd, Queue Object Sub-Classes: Person Clothing Colour, Vehicle Colour ,		
24	AI Blur Detection	Supported		
25	AI Tamper Detection	Blackout, Whiteout, Scene Change (FoV tamper)		
26	Protocols	TCP/IP, IPv4, IPv6, TCP, UDP, HTTP, FTP, DHCP, WS-Discovery, DNS, DDNS, RTP, TLS, RTSP, ICMP, Unicast, Multicast, NTP, SMTP, WS-Security, SNMP, CIFS, FSTP, UPnP™, SIP		
27	Cyber Security	Secure Boot, Enhanced Security Mode (forces complex passwords, HTTPS and disables discovery); TLS 1.2 (256-bit cipher minimum); Security Overview Page (status and configuration); RTSP Authentication; IEEE802.1X Client; Remote Accessible Audit logs; Role-Based Access Control, Video Encryption for local storage and streaming.		
28	Enclosure	IP66/IP67, IK10		
29	Firmware Upgrade	The firmware upgrade shall be done though web interface, The firmware shall be available free of cost		
30	Alarm	1 Input & 1 Output		
31	Operating temperature	-40°C to 60 °C		
32	Certification	CE, FCC, UL		

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5MP Motorized V/F IR Bullet

Sl No	Parameters	Minimum Specification	Bidders Compliance (Yes/No)	Remark
1	Type	5MP Motorized V/F IR Bullet		
2	Image sensor type	1/2.8" Progressive Scan CMOS Sensor or better		
3	Resolution	5MP resolution		
4	Compression	H.265 / H.264 / MJPEG		
5	Multi-streaming	Triple streams		
6	Focal length	2.7mm to 13.5mm Motorized Varifocal Lens		
7	Max. Frame Rate	30fps		
8	Built in IR	Up to 70m		
9	Wide Dynamic Range	True WDR, 120dB		
10	Electronic Shutter Speed	1/4s to 1/32000s		
11	Memory Capacity	1GB RAM and 512MB Flash		
12	S/N Ratio	≥52 dB AGC ON		
13	Quality Control	VBR, CBR & CVBR supported		
14	Audio	Bi-directional audio (2-way), 1IN/1OUT		
15	Audio Noise Reduction	Supported		
16	Power Supply	PoE & 12VDC support power supply failover		
17	Video Output	CVBS video output (BNC × 1)		
18	Hardware Reset & Factory Reset Button	Yes		
19	Edge Storage	Built-in micro-SD card slot, up to 1TB (Encrypted Storage)		
20	ONVIF conformant	ONVIF Profile S, G, T		
21	Iris control	P-Iris		
22	Event Triggers	FTP Upload, CIFS, SMTP, Snapshots, SD Card Record, SIP Call, Audio		

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		clip playback		
23	Analytics	Object Classes: Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Class Trigger Rules: Object Detected, Perimeter, Linger, Dwell, Abandoned / Removed, Enter, Exit, Crowd, Queue Object Sub-Classes: Person Clothing Colour, Vehicle Colour ,		
24	AI Blur Detection	Supported		
25	AI Tamper Detection	Blackout, Whiteout, Scene Change (FoV tamper)		
26	Protocols	TCP/IP, IPv4, IPv6, TCP, UDP, HTTP, FTP, DHCP, WS-Discovery, DNS, DDNS, RTP, TLS, RTSP, ICMP, Unicast, Multicast, NTP, SMTP, WS-Security, SNMP, CIFS, FSTP, UPnP™, SIP		
27	Cyber Security	Secure Boot, Enhanced Security Mode (forces complex passwords, HTTPS and disables discovery); TLS 1.2(256-bit cipher minimum); Security Overview Page (status and configuration); RTSP Authentication; IEEE802.1X Client; Remote Accessible Audit logs; Role-Based Access Control, Video Encryption for local storage and streaming		
28	Enclosure	IP66/IP67, IK10		
29	Firmware Upgrade	The firmware upgrade shall be done through web interface, The firmware shall be available free of cost		
30	Alarm	1 Input & 1 Output		
31	Operating Temperature	-40°C to 60 °C		
32	Certification	CE, FCC, UL		

2MP PTZ Camera

SI No	Parameters	Minimum Specification	Bidders Compliance (Yes/No)	Remarks
1	Type	2MP PTZ		
2	Image sensor type	1/2.8" CMOS Sensor		
3	Resolution	1920 x 1080		
4	Compression	H.265 / H.264 / MJPEG		
5	Multi-streaming	Triple streams		
6	Electronic Image Stabilization	Yes		
7	Focal length	4.8 mm to 153 mm or better		

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8	Max. Frame Rate	2MP @ 30fps		
9	Built in IR	200m IR		
10	Pan Travel	360° Continuous		
11	Tilt Travel	-15° to 90°		
12	Preset Speed	Pan Speed: 240°/s Tilt Speed: 200°/s		
13	Presets	300		
14	Optical Zoom	32x Optical Zoom		
15	Digital Zoom	16x Digital Zoom		
16	Wide Dynamic Range	True WDR, 120dB		
17	Electronic Shutter Speed	1/1s to 1/30000s		
18	ONVIF conformant	ONVIF Profile S, G & T		
21	Edge Storage	Built-in memory card slot, support microSD/SDHC/SDXC card, up to 256 GB		
22	Field of View (H/V)	H-FOV: 50.8° to 2.6° (wide-tele) V-FOV: 29.4° to 1.5° (wide-tele)		
	Alarm	2 inputs, 1 output		
23	Alarm Linkage	Upload to FTP/NAS/memory card, notify surveillance center, send email, trigger alarm output, trigger recording, audible warning, white light flashing, and PTZ actions		
23	Video Analytics	Line crossing detection, intrusion detection, region entrance detection, region exiting detection, unattended baggage detection, object removal detection, audio exception detection		
	Image Enhancement	BLC, HLC, 3D DNR		
	Defog	Supported		
	Electronic Image Stabilization	Supported		
	SNR	> 52 dB		
	Network Storage	NAS (NFS, SMB/ CIFS)		

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24	Alarm	1 input, 1 output		
25	PRIVACY MASKS	16 or better		
	Simultaneous Live View	Up to 20 channels		
	User/Host	Up to 32 users, 3 user levels: administrator, operator, and user		
26	Operating temperature	-30 °C to 50 °C		
27	Protocol	IPv4/IPv6, HTTP, HTTPS, 802.1x, QoS, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTCP, RTP, TCP/IP, UDP, IGMP, ICMP, DHCP, PPPoE, Bonjour		
28	Cyber Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication, watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, RTP/RTSP over HTTPS, control timeout settings, security audit log, TLS 1.2, TLS 1.3, host authentication (MAC address)		
29	Enclosure	IP66, IK10		
30	Certificate	CE, FCC, UL		

NVR -32 Channel

Sr. No	Parameters	Minimum Specification	Bidders Compliance (Yes/No)	Remarks
1	System			
2	OS	Embedded Linux		
3	Storage			
4	HDD Interface	SATA x8, up to 10TB for each disk		
5	E-SATA Interface	e-SATA x 1		
6	Storage Mode	Disk Group, RAID (RAID model only)		
7	Redundant	Backup Group, RAID 0,1,5,6,10		
8	Disk Healthy	S.M.A.R.T Information		
9	Video			
10	Compression	H.265/H.265+/H.264/H.264+		
11	IP Video Input	32CH IPC input		
12	Resolution	12MP/8MP/6MP/5MP/4MP/3MP/1080P/1280x1024/960P/720P/960H/D1/CIF		
13	Network	192Mbps/192Mbps (incoming/outgoing)		

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	Bandwidth			
14	Output	HDMI1: 3840 × 2160/1920 × 1080 / 1280 × 1024 / 1024 × 768 HDMI2 : 1920 × 1080 / 1280 × 1024 / 1024 × 768 VGA ×1 : 1920 × 1080 / 1280 × 1024 / 1024 × 768		
15	Multi-screen Display	Max. 32+9CH local live view		
16	Audio			
17	Network Input	32 CH IPC audio input		
18	2-way Audio	1-CH, RCA (2.0 Vp-p, 1 K)		
19	Local Output	1-CH, RCA (Linear, 1 K)		
20	Compression	G.711(u/a)		
21	Record			
22	Record Stream	Dual stream recording		
23	Resolution	12MP/8MP/6MP/5MP/4MP/3MP/1080P/1280×1024/960P/720P/960H/D1/CIF		
24	Playback			
25	Simultaneous Playback	16CH		
26	Playback Mode	Camera Thumbnails / Time / Event / tag / smart search		
27	Smart Search	Human body, Vehicle, Face, Plate, Line Crossing, Intrusion, Object Abandoned, Object Abandoned (Missing), Scene Change		
28	Function	Play, Pause, Fast Forward, Fast Backward, Digital Zoom		
29	Decoding Performance			
30	Live View/ Playback	1CH 12MP or 4CH 1080P		
31	Frame Rate	12MP: 20fps; 8MP or lower resolution: NTSC: 30fps; PAL:25fps		
32	Facial Recognition			
33	Camera integration	32CH (Facial picture captured by camera) 2CH (Facial picture captured by NVR)		
34	Face Match	6 CH		
35	Recognition Speed	18 facial pictures / second		
36	Face Picture Database	Up to 32 groups, with up to 10000 facial pictures in total		
37	Picture Search	Search by picture is supported		
38	Picture Adding	Web, USB stick, single picture ≤ 70kb		

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39	Tracking	Tracking display on electronic Map		
40	Statistic	Statistics by day, week, month, quarter as well as customized time period		
41	Other Feature intelligence Analysis			
42	Object Classification	Edge Analysis		
43	Target counting	Edge Analysis		
44	Scene Change	Edge Analysis		
45	Intrusion	32 Ch for edge analysis; 2 CH for NVR analysis		
46	Line Crossing	32 Ch for edge analysis; 2 CH for NVR analysis		
47	Alarm			
48	Mode	Manual, sensor, motion, exception, smart events, etc.		
49	Input / Output	16 / 4		
50	Action	Record, Snapshot, Call Preset, E-mail, Buzzer		
51	Network			
52	Interface	RJ45 1000 Mbps × 2		
53	Protocol	TCP / IP, PPPoE, DHCP, DNS, DDNS, UPnP, NTP, SMTP, HTTP, HTTPS, 802.1x, RTSP, SNMP, ONVIF, etc.		
54	Client Connection	Max. 125 users' access or more		
55	Mobile Connection	iOS, Android		
56	Remote Access	Web, VMS		
57	Backup			
58	Local Backup	USB stick, USB mobile HDD		
59	Network Backup	Yes		
60	OS	iOS, Android		
61	Auxiliary Interface			
62	RS 485	1, with full duplex, connect to PTZ or keyboard		
63	USB Interface	USB 3.0 × 1; USB 2.0 × 2		
64	General			
65	Power Supply	ATX 300W(PoE)		
66	Consumptio	≤ 30W (without HDD and PoE power supply)		

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67	Dimensions(mm)	445 × 436 × 90 (W × D × H)		
68	Working Environment	-10 ~ 50 °C, 10% ~ 90% humidity		
69	Certification			
70	Certificate	CE, FCC		

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