

## TECHNICAL SPECIFICATION and COMPLIANCE SHEET

### 1. NETWORK VIDEO RECORDER (CMS COMPLIANT):

S. No.	Features	Compliances (Yes/No)	Deviation/ Remarks
1.	The system shall be open platform with integration with at least 70 IP camera leading brands in the world & ONVIF compatible models. The client OS platform shall be able to run with Microsoft Windows platform, Mobile Android/ Apple app should be available. (list of integrated brands to be submitted)		
2.	The system shall be Windows/ Linux platform. The OS shall be embedded in device without extra installation. The system shall at least support 80mbps throughput for 2 bay model. The NVR shall be 4 ch/8ch/16 ch as per requirement.		
3.	The system shall have ability to display videos and manage the system locally with monitor connected via either HDMI or VGA.		
4.	The system shall be able to support for central management system (CMS), if needed. The CMS shall allow for the continuous monitoring of the operational status and event-triggered alarms from system servers, cameras, POS and other external devices.		
5.	The system shall support adjusting system time with NTP server weekly or monthly.		
6.	The installation tool shall allow user to obtain network settings automatically from external DHCP server or built-in DHCP server, or configure network settings manually.		
7.	User shall be able to configure camera settings such as resolution, frame rate, quality and audio.		
8.	The system shall support monitoring the connection status, recording status, frame rate and bit rate of each camera.		
9.	The system shall provide estimated remaining recording time according to bit rate and hard disk space.		





10.	The system shall support a secondary and lower stream from IP camera if this camera has dual stream. The dual stream solves the limited bandwidth issue in mobile and remote connection.		
11.	The system shall support ONVIF cameras.		
12.	The system shall support panoramic lens and fisheye camera.		
13.	The local display shall provide optional layouts to display the videos – (2bay model) 1x1, 2x2, 3x3, 1+7, model support full screen and auto scan mode. The web browser and remote live view application shall provide layouts including 1x1, 2x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8, 1+5, 2+8, 1+12, 1+12(central fixed), 1+16(central fixed), full screen and auto scan mode.		
14.	The system shall support displaying images from several cameras, one after the other, in a single view position. The system shall allow user to define time interval of carousel.		
15.	The system shall support three recording modes– always record, record on motion detection and record on input trigger. Support Multi-Stream for remote live view bandwidth control (Original / 500 kbps / 100 kbps)		
16.	The system shall provide a verification tool to verify if a snapshot or video clip is modified.		
17.	Push notification – send notifications to users on mobile for checking live videos and playback.		
18.	E-map popup – pop up E-map on web/remote Live View.		
19.	The system shall be able to backup recorded video of the previous day to a remote FTP server according to pre-defined schedule.		
20.	The system shall provide backup function to save video and log files in its playback application. User may use backup files on any other PC with windows operation system and operate the full function with playback application.		
21.	The remote backup system shall allow user to new (add), remove interested periods of recorded video. The system shall support a graphic time navigation user-interface for user to select an interested period.		





22.	The system shall allow user to access the hard disk on unit by FTP transmission and backup the recorded video manually.		
<b>23.</b>	<b>Intelligent search</b>		
24.	The remote playback system shall support intelligent search tool (post-video-analytics) – search the camera events (general motion, foreign object, missing object, focus lost, camera occlusion) in regions of interest from recorded video. The tool shall present the searching result by listing all events or showing events frame by frame.		
25.	The remote playback system shall support video enhancement function to filter the visibility, sharpen, brightness, contrast and grey scale on recorded video to give user a better display.		
<b>26.</b>	<b>Central management connection</b>		
27.	The system shall be able to connect and send alarm message to a central management system.		
<b>28.</b>	<b>Verification tool</b>		
29.	The system shall provide a verification tool to verify if a snapshot or video clip is modified.		
30.	The verification tool shall verify below three types of data.		
31.	a. DAT and 264 formats.		
32.	b. AVI and ASF format.		
33.	c. BMP and JPEG format.		
<b>34.</b>	<b>Mobile phone support</b>		
35.	The system shall allow users to view video on iPhone, iPad, Android with mobile client.		
<b>36.</b>	<b>E-map support (remote client only)</b>		
37.	The system shall support multiple E-maps layers.		
38.	The system shall support various image formats for E-map- BMP, JPEG, GIF, PNG, TIFF.		
39.	The system shall allow user to drag the indicators representing the devices (including analog cameras, IP cameras, I/O devices and POS) on to the map, arrange the location of the indicators on map, and rotate the direction of the indicators.		



40.	The indicators that representing the devices shall turn red when motion or digital input event is detected by camera.		
41.	<b>Maximum Numbers of Licenses</b>	<b>upto 16 cameras in the same unit</b>	
42.	<b>Base License</b>	<b>4 channel/8 channel/ 16 channel</b>	
43.	<b>Video Output</b>	HDMI, VGA	
44.	<b>Output Resolution</b>	1920x1080, 1280x1024, 1280x720, 1024x768	
45.	<b>Decoding Capacity (H.264)</b>	120fps @1080p or 240fps @720p (no resolution limitation on single channel)	
46.	<b>Throughput</b>	80Mbps	
47.	<b>Number of Drives</b>	2 x 3.5" SATA II	
48.	<b>External Storage</b>	1 x eSATA	
49.	<b>Max Storage Per Drive</b>	6TB	
50.	<b>RAID Level</b>	RAID 0,1	
51.	<b>RAM</b>	DDR3 2GB	
52.	<b>Storage</b>	1.3/2 MP @25fps for at least 30 days, (calculation sheet to be submitted with bid)	
53.	<b>I/O Interface</b>	5 x USB 2.0 (for keyboard, mouse, UPS, USB flash drive)	
54.	<b>LAN</b>	2 x Gigabit Port, RJ45	
55.	<b>LAN Transmission Speed</b>	10/100/1000 Mbps	
56.	<b>Voltage</b>	DC 12V 5A	
57.	<b>Power Consumption</b>	Full loading: 25W Max: 60W	
58.	<b>Temperature (Operating with HDD)</b>	0°C-40°C	
59.	<b>Humidity (Operating)</b>	5%-95%	





## 2. Bullet Camera:

S. NO.	Parameter	Description	Compliance Y/N
1	Image sensor & Minimum Effective Pixels (Resolution) or better	1/ 2.8" or better CMOS or Equivalent & Minimum 2 MP (1920 x 1,080) @ 30 FPS	
2	Electronic Shutter	1/3 to 1 / 100000 s or better	
3	Min illumination/ light sensitivity (Colour) or better	Minimum 0.2 lux or better	
4	Min illumination/ light sensitivity (B/W)	Minimum 1.4 lux or better	
5	Wide Dynamic Range	WDR	
6	BLC and HLC	ON/OFF	
7	IR Range	Internal 60m	
8	Automatic Gain Control	Auto / Manual	
9	Frame Rate	1 to 25/30 fps or better	
10	Lens	2.7-12 Motorized lens or better with min. 4x Optical Zoom	
11	Video Compression Format	H.265, H.264, JPEG	
12	Day and Night functionality	Automatic, Color, Mono	
13	Video Resolution	Minimum 2 MP (1920 x 1,080)	
14	Compression	Dynamic I frame and intelligent compression on H265/H264 to reduce bandwidth.	
15	<b>Network &amp; Interface</b>		
	Interface	RJ-45 for 10/100 base-T Ethernet	
	Upgrade	Through web browser , online, firmware upgrade	
	Network Protocols support	IPv4, IPv6, TCP/IP, HTTP,HTTPS , DHCP, UDP, DNS, SMTP, RTP, RTSP, SNMP, UpnP, NTP, ICMP, IGMP,	



	Compliance	ONVIF Profile S, G	
16	<b>General</b>		
	Operationa temperature °C	-25°C to 60 °C	
	Humidity	10 to 90% RH non-condensing	
	IP rating	IP66	
	Power	PoE (IEEE 802.3af) or 12V DC 1 A / Approx. 11 W	
17	<b>Local Storage</b>		
	SD card	Camera should support SDXC/SDHC card up to 128 GB.	

### 3. Dome Camera:

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1	Image sensor & Minimum Effective Pixels (Resolution) or better	1/ 2.8" or better CMOS or Equivalent & Minimum 2 MP (1920 x 1,080) @ 30 FPS	
2	Electronic Shutter	1/3 to 1 / 100000 s or better	
3	Min illumination/ light sensitivity (Colour) or better	Minimum 0.2 lux or better	
4	Min illumination/ light sensitivity (3/W)	Minimum 1.4 lux or better	
5	Wide Dynamic Range	WDR	
6	BLC and HLC	ON/OFF	
7	IR Range	Internal 30m	
8	Automatic Gain Control	Auto / Manual	
9	Frame Rate	1 to 25/30 fps or better	
10	Lens	2.7-12 Motorized lens or better with min. 4.4x Optical Zoom	





11	Video Compression Format	H.265, H.264, JPEG	
12	Day and Night functionality	Automatic, Color, Mono	
13	Video Resolution	Minimum 2 MP (1920 x 1,080)	
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15	<b>Network &amp; Interface</b>		
	Interface	RJ-45 for 10/100 base-T Ethernet	
	Upgrade	Through web browser , online, firmware upgrade	
	Network Protocols support	IPv4, IPv6, TCP/IP, HTTP,HTTPS , DHCP, UDP, DNS, SMTP, RTP, RTSP, SNMP, UpnP, NTP, ICMP, IGMP,	
	Compliance	ONVIF Profile S, G	
16	<b>General</b>		
	Operational temperature °C	-25°C to 60 °C	
	Humidity	10 to 90% RH non-condensing	
	IP rating	IP66	
	Power	PoE (IEEE 802.3af) or 12V DC 1 A / Approx. 12 W	
17	<b>Local Storage</b>		
	SD card	Camera should support SDXC/SDHC card up to 128 GB.	



