Annexure C

Revised Technical Specification

Sr. No.	Bullet camera	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Image Sensor Type	CMOS
2	Image Sensor Size	0.333/ 0.357
3	Camera Image Sensing capacity (Picture Mode)	2MP or Higher
4	Resolution	D1 (704 X 480 Pixel), Full HD (1920 X 1080 Pixel), HD (1280 X 720 Pixel)
5	Day::Night Capable	Yes
6	IR illumination Range(mtr)	50
7	Focal Length(mm)	2.8 – 12
8	Frame Rate (FPS)	30
9	Video Compression	H.265, H.264 (The camera OEM Should be a genuine manufacturer and should be an official valid H.265 HEVC licensee and should be listed on HEVC website at the time of submitting bid.)
10	Video Streaming	Triple Compressed Stream
11	Audio Support	Yes
13	Audio Streaming	Two-Way
14	Number of Audio Input Channel	1
15	Number of Audio Output Channel	1
16	Alarm Support	Yes
17	Number of Alarm Digital Input	1
18	Number of Alarm Relay Output	1
19	Pre/Post Alarm Buffer	Yes
19	Minimum Illumination for Capturing Color Image (L)	0.05 lux
20	WDR (Wide Dynamic Range)	120 DB
21	SNR (Signal to Noise Ratio)	50-60
22	On Board SD Card Support	Yes (Minimum 256 GB)
23	SD Card Memory (GB)	128GB
24	SD Card Type	SDXC Class 10, 1 or latest higher version
25	SD Card Speed	Minimum 10 Mbps
26	Installation Type	Indoor, Outdoor
27	Material of the Housing construction	Aluminum
28	Protection	IP66, IK 10 rated housing
29	Mounting bracket	Wall Mounted
30	Power Input	PoE
31	Warranty (A)	5
32	Time for Replacement of Defective Product During Warranty Period (H)	72
33	BIS Registration for safety general requirements as per IS 13252 (Part 1): latest	Yes
34	Lens Type	Motorized Varifocal
35	Type of Camera Housing	BULLET CAMERA
36	IP Camera	Yes

37	PTZ Camera	No
38	Pan Speed (deg::Sec)	NA
39	Optical Zoom	NA
40	Digital Zoom	Any Value
41	Tilt Speed (deg::Sec)	NA
42	ONVIF Support	Yes, ONVIF S, G & T
43	Certification	FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS. Note: In case of Make in India Product UL certification is not required. However, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP
44	Audio	All type of IP camera has inbuilt mic and connectivity option for external mic in the supplied camera from day1. Bidder should ensure that audio recording should be happen along with video on storage device from day 1
45	Additional	The bidder needs to ensure that the video and audio footage shall be stored at SD card at camera level. In case of any failure in LAN, network switches, NVR, etc. at local police station level, then the recorded footages of SD card installed at camera level, shall automatically be transferred to NVR once the connectivity is restored
46	Undertaking	Undertaking required from OEM: No support and use of GB/T 28181 protocol The cameras offered must be cyber security certified with NDAA/UL Cyber security certificate/GDPR/NIST/ TPM/Cybersecurity Chipset/ ISO 27032 /Any other cyber security certificate from Indian Government body for mitigating cyber security risk. The MAC ID's of the CCTV Cameras to be supplied against this tender shall be registered in the name of the OEM of the CCTV Cameras.
		The OEM of CCTV Camera should be a member of ONVIF and quoted models should be listed on official website of ONVIF. The CCTV OEM should not be suspended/ blacklisted by ONVIF.

Sr. No.	**Dome camera**	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Image Sensor Type	CMOS
2	Image Sensor Size	0.333/ 0.357
3	Camera Image Sensing capacity (Picture Mode)	2MP or Higher

4	Resolution	D1 (704 X 480 Pixel),Full HD (1920 X 1080 Pixel),HD (1280 X 720 Pixel)
5	Day::Night Capable	Yes
6	IR illumination Range(mtr)	30
7	Focal Length(mm)	2.8 – 12
8	Frame Rate (FPS)	30
9	Video Compression	H.265, H.264 (The camera OEM Should be a genuine manufacturer and should be an official valid H.265 HEVC licensee and should be listed on HEVC website at the time of submitting bid.)
10	Video Streaming	Triple Compressed Stream
11	Audio Support	Yes
13	Audio Streaming	Two-Way
14	Number of Audio Input Channel	1
15	Number of Audio Output Channel	1
16	Alarm Support	Yes
17	Number of Alarm Digital Input	1
18	Number of Alarm Relay Output	1
19	Pre/Post Alarm Buffer	Yes
19	Minimum Illumination for Capturing Color Image (L)	0.05 lux
20	WDR (Wide Dynamic Range)	120 DB
21	SNR (Signal to Noise Ratio)	50-60
22	On Board SD Card Support	Yes (Minimum 256 GB)
23	SD Card Memory(GB)	128GB
24	SD Card Type	SDXC Class 10, 1 or latest higher version
25	SD Card Speed	Minimum 10 Mbps
26	Installation Type	Indoor
27	Material of the Housing construction	Aluminum
28	Protection	IP66, IK 10 rated housing
29	Mounting bracket	Wall Mounted
30	Power Input	PoE
31	Warranty (A)	5
32	Time for Replacement of Defective Product During Warranty Period (H)	72
33	BIS Registration for safety general requirements as per IS 13252 (Part 1):latest	Yes
34	Lens Type	Motorized Varifocal
35	Type of Camera Housing	Dome CAMERA
36	IP Camera	Yes
37	PTZ Camera	No
38	Pan Speed (deg::Sec)	NA
39	Optical Zoom	NA
40	Digital Zoom	Any Value
41	Tilt Speed (deg::Sec)	NA
42	ONVIF Support	Yes, ONVIF S, G & T
`43	Certification	FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS. Note: In case

		of Make in India Product UL certification is not required. However, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP
44	Audio	All type of IP camera has inbuilt mic and connectivity option for external mic in the supplied camera from day1. Bidder should ensure that audio recording should be happen along with video on storage device from day 1
45		The bidder needs to ensure that the video and audio footage shall be stored at SD card at camera level. In case of any failure in LAN, network switches, NVR, etc. at local police station level, then the recorded footages of SD card installed at camera level, shall automatically be transferred to NVR once the connectivity is restored.
46	Undertaking	Undertaking required from OEM: No support and use of GB/T 28181 protocol The cameras offered must be cyber security certified with NDAA/UL Cyber security certificate/GDPR/NIST/ TPM/Cybersecurity Chipset/ ISO 27032 /Any other cyber security certificate from Indian Government body for mitigating cyber security risk. The MAC ID's of the CCTV Cameras to be supplied against this tender shall be registered in the name of the OEM of the CCTV Cameras.
		The OEM of CCTV Camera should be a member of ONVIF and quoted models should be listed on official website of ONVIF. The CCTV OEM should not be suspended/ blacklisted by ONVIF.

Sr. No.	Bullet camera for costal area police station	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Image Sensor Type	CMOS
2	Image Sensor Size	0.333/ 0.357
3	Camera Image Sensing capacity (Picture Mode)	2MP or higher
4	Resolution	D1 (704 X 480 Pixel), Full HD (1920 X 1080 Pixel), HD (1280 X 720 Pixel)
5	Day::Night Capable	Yes
6	IR illumination Range(mtr)	50
7	Focal Length(mm)	2.8 – 12
8	Frame Rate (FPS)	30
9	Video Compression	H.265, H.264 (The camera OEM Should be a genuine manufacturer and should be an official

		valid H.265 HEVC licensee and should be listed on HEVC website at the time of submitting bid.)
10	Video Streaming	Triple Compressed Stream
11	Audio Support	Yes
13	Audio Streaming	Two-Way
14	Number of Audio Input Channel	1
15	Number of Audio Output Channel	1
16	Alarm Support	Yes
17	Number of Alarm Digital Input	1
18	Number of Alarm Relay Output	1
19	Pre/Post Alarm Buffer	Yes
19	Minimum Illumination for Capturing Color Image (L)	0.05 lux
20	WDR (Wide Dynamic Range)	120 DB
21	SNR (Signal to Noise Ratio)	50-60
22	On Board SD Card Support	Yes (Minimum 256 GB)
23	SD Card Memory (GB)	128GB
24	SD Card Type	SDXC Class 10, 1 or latest higher version
25	SD Card Speed	Minimum 10 Mbps
26	Installation Type	Indoor, Outdoor
27	Material of the Housing construction	Aluminum
28	Protection	IP67 with extra corrosion proof coating with Die Cast Aluminum or better material coating of corrosion proof material as per C3 corrosively category.
29	Mounting bracket	Wall Mounted
30	Power Input	PoE
31	Warranty (A)	5
32	Time for Replacement of Defective Product During Warranty Period (H)	72
33	BIS Registration for safety general requirements as per IS 13252 (Part 1): latest	Yes
34	Lens Type	Motorized Varifocal
35	Type of Camera Housing	BULLET CAMERA
36	IP Camera	Yes
37	PTZ Camera	No
38	Pan Speed (deg::Sec)	NA
39	Optical Zoom	NA
40	Digital Zoom	Any Value
41	Tilt Speed (deg::Sec)	NA
42	ONVIF Support	Yes, ONVIF S, G & T
43	Certification	FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS, NEMA 4X. Note: In case of Make in India Product UL certification is not required. However, MII product should have a certification from a NABL approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP

44	Audio	All type of IP camera has inbuilt mic and connectivity option for external mic in the supplied camera from day1. Bidder should ensure that audio recording should be happen along with video on storage device from day 1
45		The bidder needs to ensure that the video and audio footage shall be stored at SD card at camera level. In case of any failure in LAN, network switches, NVR, etc. at local police station level, then the recorded footages of SD card installed at camera level, shall automatically be transferred to NVR once the connectivity is restored.
46	Undertaking	Undertaking required from OEM: No support and use of GB/T 28181 protocol The cameras offered must be cyber security certified with NDAA/UL Cyber security certificate/GDPR/NIST/ TPM/Cybersecurity Chipset/ ISO 27032 /Any other cyber security certificate from Indian Government body for mitigating cyber security risk. The MAC ID's of the CCTV Cameras to be supplied against this tender shall be registered in the name of the OEM of the CCTV Cameras.
		The OEM of CCTV Camera should be a member of ONVIF and quoted models should be listed on official website of ONVIF. The CCTV OEM should not be suspended/ blacklisted by ONVIF.

Sr. No.	Dome camera for costal area police station	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Image Sensor Type	CMOS
2	Image Sensor Size	0.333/ 0.357
3	Camera Image Sensing capacity (Picture Mode)	2MP or Higher
4	Resolution	D1 (704 X 480 Pixel),Full HD (1920 X 1080 Pixel),HD (1280 X 720 Pixel)
5	Day::Night Capable	Yes
6	IR illumination Range(mtr)	50
7	Focal Length(mm)	2.8 – 12
8	Frame Rate (FPS)	30
9	Video Compression	H.265, H.264 (The camera OEM Should be a genuine manufacturer and should be an official valid H.265 HEVC licensee and should be listed on HEVC website at the time of submitting bid.)
10	Video Streaming	Triple Compressed Stream
11	Audio Support	Yes
13	Audio Streaming	Two-Way

14	Number of Audio Input Channel	1
15	Number of Audio Output Channel	1
16	Alarm Support	Yes
17	Number of Alarm Digital Input	1
18	Number of Alarm Relay Output	1
19	Pre/Post Alarm Buffer	Yes
19	Minimum Illumination for Capturing Color Image (L)	0.05 lux
20	WDR (Wide Dynamic Range)	120 DB
21	SNR (Signal to Noise Ratio)	50-60
22	On Board SD Card Support	Yes (Minimum 256 GB)
23	SD Card Memory(GB)	128GB
24	SD Card Type	SDXC Class 10, 1 or latest higher version
25	SD Card Speed	Minimum 10 Mbps
26	Installation Type	Indoor
27	Material of the Housing construction	Aluminum
28	Protection	IP67 with extra corrosion proof coating with Die Cast Aluminum or better material coating of corrosion proof material as per C3 corrosively category.
29	Mounting bracket	Wall Mounted
30	Power Input	PoE
31	Warranty (A)	5
32	Time for Replacement of Defective Product During Warranty Period (H)	72
33	BIS Registration for safety general requirements as per IS 13252 (Part 1):latest	Yes
34	Lens Type	Motorized Varifocal
35	Type of Camera Housing	Dome CAMERA
36	IP Camera	Yes
37	PTZ Camera	No
38	Pan Speed (deg::Sec)	NA
39	Optical Zoom	NA
40	Digital Zoom	Any Value
41	Tilt Speed (deg::Sec)	NA
42	ONVIF Support	Yes, ONVIF S, G & T
43	Certification	FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS, NEMA 4X. Note: In case of Make in India Product UL certification is not required. However, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP
44	Audio	All type of IP camera has inbuilt mic and connectivity option for external mic in the supplied camera from day1. Bidder should ensure that audio recording should be happen along with video on storage device from day 1

45		The bidder needs to ensure that the video and audio footage shall be stored at SD card at camera level. In case of any failure in LAN, network switches, NVR, etc. at local police station level, then the recorded footages of SD card installed at camera level, shall automatically be transferred to NVR once the connectivity is restored.
46	Undertaking	Undertaking required from OEM: No support and use of GB/T 28181 protocol The cameras offered must be cyber security certified with NDAA/UL Cyber security certificate/GDPR/NIST/ TPM/Cybersecurity Chipset/ ISO 27032 /Any other cyber security certificate from Indian Government body for mitigating cyber security risk. The MAC ID's of the CCTV Cameras to be supplied against this tender shall be registered in the name of the OEM of the CCTV Cameras.
		The OEM of CCTV Camera should be a member of ONVIF and quoted models should be listed on official website of ONVIF. The CCTV OEM should not be suspended/ blacklisted by ONVIF.

	16 CH Network Video Recorder with 12 TB Storage
S/N	**Specification**
1	16 Channels or better NVR with supports up to 8 SATA hard drives each support up to 10TB, should be loaded with 12 TB Capacity of HDDs. Should support RAID 0/1/5/6/10. Shouls have the option to increase 25% extra cameras in same NVR without adding any additional hardware.
2	Support 4K streaming, Support 16 Channel up to (3840*2160) Resolution Support 300 Mbps of incoming Bandwidth and support USB 2.0 & 3.0 ports
3	Support H.264 and H.265
4	2# of Gigabit port with load balancing and failover
5	Support ONVIF S, G & T and above cameras, should support Remote live view and remote playback
6	VGA and HDMI, 2 nos. of USB port, should support Network & USB data backup
7	Should support 16 in & 4 out Alarm interfaces and 2 serial interfaces (RS232/RS485)
8	Should support 16 Channels streaming @ 1080P in Single screen and 16 Channels synchronous Playback @ 1080P
9	Should support ANR and Pre/Post recording
10	Certification- FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS certified at the time of bidding. The OEM should have ISO 9001:2008 or latest and ISO 14001:2004 or latest certificate for Manufacturing. In case of Make in India Product UL certification is not required, however, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP.
11	Operating Temperature: 0-50 °C, should be Rack mounted

12	NVR Should be capable of recording both Audio and Video. NVR or VMS should be capable to Transfer the audio and video footage automatically (without manual intervention) to the central storage. In case connectivity is lost the NVR or VMS should be capable to transfer the video footage automatically (without manual intervention) from the connectivity failure point/time, once the connectivity is restored.
13	Bidder has to ensure that the NVR is recording video and audio by 24 X 7, bidder can use additional tool if required for monitoring the same.
14	The storage taken above is indicative. Bidder has to ensure that the proposed NVR is capable of storing 1 month's video and audio footage. In case there is the requirement of more storage bidder will arrange at no extra cost to tenderer

	16 CH Network Video Recorder with 16 TB Storage
S/N	**Specification**
1	16 Channels or better NVR with supports up to 8 SATA hard drives each support up to 10TB, should be loaded with 16 TB Capacity of HDDs. Should support RAID 0/1/5/6/10. Shouls have the option to increase 25% extra cameras in same NVR without adding any additional hardware.
2	Support 4K streaming, Support 16 Channel up to (3840*2160) Resolution Support 300 Mbps of incoming Bandwidth and support USB 2.0 & 3.0 ports
3	Support H.264 and H.265
4	2# of Gigabit port with load balancing and failover
5	Support ONVIF S, G & T and above cameras, should support Remote live view and remote playback
6	VGA and HDMI, 2 nos. of USB port, Should support Network & USB data backup
7	Should support 16 in & 4 out Alarm interfaces and 2 serial interfaces (RS232/RS485)
8	Should support 16 Channels streaming @ 1080P in Single screen and 16 Channels synchronous Playback @ 1080P
9	Should support ANR and Pre/Post recording
10	Certification- FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS certified at the time of bidding The OEM should have ISO 9001:2008 or latest and ISO 14001:2004 or latest certificate for Manufacturing. In case of Make in India Product UL certification is not required, however, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP.
11	Operating Temperature: 0-50 °C, should be Rack mounted
12	NVR Should be capable of recording both Audio and Video. NVR or VMS should be capable to Transfer the audio and video footage automatically (without manual intervention) to the central storage. In case connectivity is lost the NVR or VMS should be capable to transfer the video footage automatically (without manual intervention) from the connectivity failure point/time, once the connectivity is restored.
13	Bidder has to ensure that the NVR is recording video and audio by 24 X 7, bidder can use additional tool if required for monitoring the same.
14	The storage taken above is indicative. Bidder has to ensure that the proposed NVR is capable of storing 1 month's video and audio footage. In case there is requirement of more storage bidder will arrange at no extra cost to tenderer

	Item No.- 5: 32 CH Network Video Recorder with 24 TB Storage
S/N	**Specification**
1	32 Channels or better NVR with supports up to 8 SATA hard drives each support up to 10TB, should be loaded with 24 TB Capacity of HDDs. Should support RAID 0/1/5/6/10. Shouls have the option to increase 25% extra cameras in same NVR without adding any additional hardware.

2	Support 4K streaming, Support 32 Channel up to (3840*2160) Resolution Support 300 Mbps of incoming Bandwidth and support USB 2.0 & 3.0 ports
3	Support H.264 and H.265
4	2# of Gigabit port with load balancing and failover
5	Support ONVIF S, G & T and above cameras, should support Remote live view and remote playback
6	VGA and HDMI, 2 nos. of USB port, e-SATA, should support Network, USB & e-SATA data backup
7	Should support 16 in & 4 out Alarm interfaces and 2 serial interfaces (RS232/RS485)
8	Should support 16 Channels streaming @ 1080P in Single screen and 16 Channels synchronous Playback @ 1080P
9	Should support ANR and Pre/Post recording
10	Certification- FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS certified at the time of bidding The OEM should have ISO 9001:2008 or latest and ISO 14001:2004 or latest certificate for Manufacturing. In case of Make in India Product UL certification is not required, however, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP.
11	Operating Temperature: 0-50 °C, should be Rack mounted
12	NVR Should be capable of recording both Audio and Video. NVR or VMS should be capable to Transfer the audio and video footage automatically (without manual intervention) to the central storage. In case connectivity is lost the NVR should be capable to transfer the video footage automatically (without manual intervention) from the connectivity failure point/time, once the connectivity is restored.
13	Bidder has to ensure that the NVR or VMS is recording video and audio by 24 X 7, bidder can use additional tool if required for monitoring the same.
14	The storage taken above is indicative. Bidder has to ensure that the proposed NVR is capable of storing 1 month's video and audio footage. In case there is requirement of more storage bidder will arrange at no extra cost to tenderer

	Item No.- 6: 32 CH Network Video Recorder with 32 TB Storage
S/N	**Specification**
1	32 Channels or better NVR with supports up to 8 SATA hard drives each support up to 10TB, should be loaded with 32 TB capacity of HDDs. Should support RAID 0/1/5/6/10. Should have the option to increase 25% extra cameras in the same NVR without adding any additional hardware.
2	Support 4K streaming, Support 32 Channel up to (3840*2160) Resolution Support 300 Mbps of incoming Bandwidth and support USB 2.0 & 3.0 ports
3	Support H.264 and H.265
4	2# of Gigabit port with load balancing and failover
5	Support ONVIF S, G & T and above cameras, should support Remote live view and remote playback
6	VGA and HDMI, 2 nos. of USB port, e-SATA, should support Network, USB & e-SATA data backup
7	Should support 16 in & 4 out Alarm interfaces and 2 serial interfaces (RS232/RS485)
8	Should support 16 Channels streaming @ 1080P in Single screen and 16 Channels synchronous Playback @ 1080P
9	Should support ANR and Pre/Post recording
10	Certification- FCC/ equivalent Indian Standard, CE/equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard, BIS certified at the time of bidding The OEM should have ISO 9001:2008 or latest and ISO 14001:2004 or latest certificate for Manufacturing. In case of Make in India Product UL certification is not required, however, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP.
11	Operating Temperature: 0-50 °C, should be Rack mounted
12	NVR Should be capable of recording both Audio and Video. NVR or VMS should be capable to Transfer the audio and video footage automatically (without manual intervention) to the central storage. In case connectivity is lost the NVR or VMS should be capable to transfer the video footage automatically

	(without manual intervention) from the connectivity failure point/time, once the connectivity is restored.
13	Bidder has to ensure that the NVR is recording video and audio by 24 X 7, bidder can use additional tool if required for monitoring the same.
14	The storage taken above is indicative. Bidder has to ensure that the proposed NVR is capable of storing 1 month's video and audio footage. In case there is requirement of more storage bidder will arrange at no extra cost to tenderer

Sr. No.	**Professional Large Format Display (108 cm or 42 inch or above)**	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Native Resolution (Pixels)	UHD
2	Screen Type	Non Touch
3	Screen Size (Diagonal) Minimum (cm)	108
4	Aspect Ratio	16:09
5	Duty Cycle	24 X 7
6	Technology	LED Backlit
7	Brightness (Nits) Minimum	350
8	On Site OEM Warranty (Year)	5

Sr. No.	**Online UPS (IS:9000 1KVA)**	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Rating in KVA (KVA)	1.0 KVA
2	Technology	IGBT-PWM without inbuilt isolation transformer
3	Input Power	single phase 160V - 260V sinewave,50Hz
4	Output Power	Single phase 230V +/-1% sinewave 50 Hz
5	Backup time (Minutes)	30
6	Minimum VAH (VAH)	800
7	Warranty for UPS (years)	5
8	Movable trolly for Batteries	With/ Without/ Without trollery but with rack
9	Degree of Protection	IP20
10	Cabling 5 meter for Input and Out Put	Without
11	Parappelling kit for synchronizing	With/without
12	Type of Battery	SMF-VRLA conforming to JISC:8702 (Pt.I, II & III)
13	20% Overload Limit for minimum 10 minutes	any value
15	Overall Efficiency (%)	>/= 90%
16	50% Overload limit for minimum 1 minutes	any value
17	UPS Should have SNMP support	Yes
18	Warranty of UPS and Battery	The UPS warranty is 5 years, during the contract bidder has to ensure the battery life to provide required backup time & during the contract period as when required bidder has to replace the batteries without additional cost to the tenderer. Batteries support must be up to 5-years

600 VA UPS		
S/N	**Parameter**	**Minimum Specifications**
1.	Capacity	600 VA or more Line Interactive
2.	Technology	Automatic Voltage Regulation

3.	Input Frequency Range	50 Hz +/- 5%
4.	Output Frequency Range	50 Hz +/- 5%
5.	Input Voltage	160 V – 280 V, Single phase AC
6.	Output Voltage	180VAC - 250 VAC +/- 10%
7.	Voltage Regulation	+/-10% (or better)
8.	Output Waveform	Modified Sine Wave
9.	Output Power Factor	0.6 or more
10.	Battery type	SMF-VRLA built-in
11.	Battery make	Exide/Quanta/CSB/Panasonic /Yuasa/Rocket (Battery Sr. No on OEM Letter Head with Warranty Assurance)
12.	Battery Backup	Minimum backup of 15 Minutes
13.	Operating Temperature	0 to 55 Degree Celsius
14.	Alarms & Indications	All necessary alarms & indications essential for performance monitoring of UPS like mains presence or fail, UPS mode, low battery, overload
15.	Protections	• If input voltage goes outside the range 160V-280V, the system shall switch over to UPS mode. • Over Voltage, short circuit and overload at UPS output terminal, no load shut down. • Under voltage at battery terminal, Battery over charge • It should protect from any input voltage or current spikes, surge
16.	Certifications	BIS certified at the time of bidding
17.	Warranty of UPS and Battery	The UPS warranty is 5 years, during the contract bidder has to ensure the battery life to provide required backup time & during the contract period as when required bidder has to replace the batteries without additional cost to the tenderer. Batteries support must be up to 5-years

Sr. No.	**8 port network switch**	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Type of Switch	Managed
2	Technology	PoE+
3	No. of 1 G SFP Port (Uplink)	2
4	No. of 10 G SFP+ Port (Uplink)	0
5	Multi-Gigabit Support	Any Value
6	Number of 1G Copper Ports	8
7	Number of 10G Copper Ports	Any Value
8	On-Site OEM Warranty	5
9	Redundant Power supply (from day one)	Any Value
10	PoE Budget	120W
11	Temperature	All 8 port network switches should support the operating temperature of -5 deg to + 50 deg.
12	Additional	Please note that the Switch should Support the continuous/Persistent PoE feature. And should support Static routing, Time-based PoE & should detect ONVIF Cameras and create Auto Surveillance VLAN.

Sr. No.	9U Rack Enclosures (Networking/Server Rack)	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Size of Server Rack Enclosure	9U
2	Warranty (Years)	5
3	Type of Server Racks	Rack Enclosures
4	Additional	Bidder has to supply the wall mount 9U rack & Size should be capable to kept the proposed hardware to be kept in the rack

Sr. No.	24 U Rack Enclosures(Networking/Server Rack)	
	Specification Name	**Bid Requirement (Allowed Values)**
1	Size of Server Rack Enclosure	24U
2	Warranty (Years)	5
3	Type of Server Racks	Rack Enclosures
4	Additional	Bidder has to supply the 24 U rack with floor standing & Size should be capable to kept the proposed hardware to be kept in the rack.

Sr. No.	42 U Cooling Rack with required UPS power
1	• Cooling Rack shall be rigid multi fold welded construction with steel frame architecture, should be made of 1.5 mm thickness for the better strength and sturdiness. • Cooling Rack shall Minimum width of 800 mm depth of 1200mm & 42U usable height. • Cooling Rack should be IP 54 or 55 Approved design. • Vandal proof design. Inside of the Cabinet should not get an access without opening the Door lock with key. • Cooling Rack/cabinet should be provided with thermal insulation. • Front and rear steel door, provided with 3point handle security lock with unique /common key. • Pad lock arrangement for secondary locking arrangement. • Depth wise reversible 19” angles with U marking screen printed in Black color provided for equipment mounting. • 10 Nos. of Metallic cable loops shall be provided for routing the cables. • Bidder has to consider 5/15Amp Indian Socket Power distribution Unit with 16 Amp MCB, and vertical 32A, Single Phase, C13 Sockets and C19 Sockets PDU with 32A MCB. The asked PDU is indicative requirement within rack. However, bidder has to propose PDU as per their propose solutions. • PU Molded non removable gasket arrangement provided at door on sealing of dust & water • Rack/Cabinet shall be provided with split type yellow /green earthing leads for earth continuity. • Pure Polyester Nano Ceramic Powder coating. • SI/Bidder has to consider minimum 7KW or higher cooling unit capacity with reference to their IT product which are going to install in the Data Center Rack. In case if there is required additional rack space to address the solution, bidder/SI has to consider additional Data Center Rack with rack coupling kit and address to additional cooling requirement. Built in cooling unit should be rated Inlet Temp of 22 +/- 1 Degree Centigrade considering minimum Ambient Temperature of 45 Degree Centigrade w.r.t peak summer/weather conditions of Gujarat State. Bidder has to consider raw electric power distribution box and electrical cabling for the cooling unit. • Compressor should be inverter type for better energy efficiency, with HMI screen management for temperature, humidity, leakage, smoke and critical parameters status.

	• Rear Door automatic opening system shall be provided for the emergency or event of cooling failure, unavailability of electricity or overheat above the standard threshold limits. Also acoustic alarm and visual indication should be provided. • Data Center cooling rack should be supplied with required UPS power backup. The UPS Should be rack mountable minimum 6KVA or higher capacity considering to bear the actual induction load of all the equipment installed under the rack (like server, storage, etc.) for Minimum 1 Hour backup with full load. • Bidder has to submit actual Rack space, cooling, UPS power load calculations for each location. • UPS should be rack mounted and Batteries should be placed outside the rack on separate battery rack. • Location wise placement of 42U Cooling rack vary, distance between Indoor unit and Outdoor unit may vay and goes up to 30 meters so please consider piping distance along with Civil, Electrical and GI cable tray accordingly. It is preferable vertical mount and lowest foot print of cooling unit to get maximum usable space within the rack.

Sr. No.	CAT 6 Cable for Indoor use	
1	Twisted Pair	CAT6 U/UTP
2	Cable color	Any Value
3	Conductor diameter	0.57 Mm (23 AWG)
4	Cable jacket material	Fire Retardant PVC
5	UL Marking on Cable	Any Value

Sr. No.	Cat 6 Patch cord (Cat-6 Factory Crimped Patch Cord)	
1	Patch cord type : Category 6 Unshielded::Unshielded twisted pair or Category 6; Foiled::Unshileded twisted pair	CAT6 U/UTP
2	Patch cord colour	Any Value
3	Length of Patch cord (Mtrs)	1
4	Cable jacket material	Fire Retardant PVC
5	Storage temperature range	-20 Deg.C To +60 Deg.C
6	Operating temperature range	-20 Deg.C To +60 Deg.C
7	UL Marking on Cable	Any Value

Sr. No.	PVC Pipe (with Laying & Installation For Cables	
1	Nominal Size of the Conduit, (mm)	25
2	Length (Metres)	3
3	Socket ended conduit (at one end)	Yes
4	ISI Marked	Yes

Sr. No.	Supply & Installation of Pole _ Mast Suitable for CCTV System	
1	Type of Pole	Cylindrical/Tubular Pole
2	Mounting Bracket	With
3	Finish	Galvanized
4	Type of Fixing	With Base Plate
5	Pole :: Mast Height (M)	6

Sr. No.	CAT 6 Patch Panel	
1	Height of patch panel	1 U
2	Material of patch panel	Cold Rolled Steel/ Steel
3	Modular plug fitting (RJ 45)	Individual Ports For Unloaded
4	Dust protection for information outlet	Yes
5	Patch panel suitability for (Category 6 Unshielded::Unshielded twisted pair or Category 6 Foiled::Unshileded twisted pair)	CAT 6 U/UTP
6	No. of ports (RJ 45)	8 Ports Loaded
7	Cable Management (Rear side)	Without

Surge Protection Device (SPD)

S/n	Parameter	Specification
1	Nominal AC voltage	230 V (50-60 Hz)
2	SPD in accordance with - EN 61643-11/IEC 61643-11	Type 2/Class II
3	Max operating AC voltage [L-N]	275 V
4	Max operating voltage [N-PE]	255 V
5	Nominal discharge current	20 kA
6	Max discharge current	40 kA
7	Voltage protection level [L-N]	<1 kV
8	Voltage protection level [N-PE]	<1.5 kV
9	Response time [L-N]	<25 ns
10	Response time [N-PE]	<100 ns
11	Operating temperature range	0-65 C
12	Degree of protection	IP 20 rating
13	Enclosure protection	IEC 60529 or equivalent Indian standard
14	Certification	UL 1449 or equivalent Indian standard
15	Visual Display	LED indicator (Green and Red)
16	Features	Audible Alarm

Layer 3 Fully Managed Switch

S/n	Parameter	Specification
1	Type of Switch	Managed
2	Technology	Non-PoE
3	Number of 1G Copper Ports	
4	Number of 10G Copper Ports	
5	No. of 1 G SFP Port (Uplink)	
6	No. of 10 G SFP+ Port (Uplink)	Bidder has to supply either 1 No of 48 Port Switch or 2 No of 24 Port Switch which has open SFP+ ports which should have the capability to load any of the following modules according to the bidder solution 1 G Copper port 10G Copper Port 10 G SFP+ Port

		Apart from the above the switch should have 4 Nos. 100G ports for future expansion Bidder has to provide the 48Nos of Module from Day 1 along with Switch as per solution requirement mentioned above.
7	Multi-Gigabit Support	Yes/NO, Core Switch Should Supports SDN Openflow v1.3 and ONIE, IEEE 802.1Qbb Priority-based Flow Control, OSPFv2/v3, MPLS, BGP4+, IEEE 802.3ah Ethernet Link OAM, IEEE 802.1ag, ITU-T Y.1731 Service OAM, Multicast VLAN, L3 Multicasting - IGMP v1/v2/v3 and PIM-SM.
8	Redundant Power supply (from day one)	Available
9	on Site OEM Warranty	5

Network Management Software (NMS)	
1	The solution should have dual-stack IP support (support both IPv4 and IPv6) and should be completely vendor-agnostic in nature to be able to monitor a multi-vendor environment and support run on Window or Linux.
2	The system should be capable to retrieve and show fault, performance, inventory and SLA data in a single dynamic view with option to export the views into PDF, Word/ Excel, HTML etc. formats depending on the need. System should have capability to add any additional information about the nodes via custom fields.
3	System should have Node Tags for device grouping and resource/interface tagging for element grouping. Apart from Node Tags additionally system should have options to do device grouping based on default fields and customer fields
4	Provides the option to have the portal account to the end customers with restricted views limits to their specific infrastructure. System should have the capability to be implementing in DMZ and non-DMZ zone with adequate security.
5	Tool must provide Role based Access Control option
6	The integrated ITSM module should have its own Android & IOS app
7	Integrated ITSM tool must have option to publish announcements and surveys for notifying end users / requesters about any important information with option to schedule it for certain time period along with questions to get their feedback on the efficiency of the IT support team
8	The system should fetch topology via SNMP for ARP tables from routers, MAC tables from layer 2 switches, cisco Discovery Protocol, Link Layer Discovery Protocol, Foundry Discovery Protocol or SynOptics Network Management Protocol. The discovery should be automated and continuous.
9	Discovery has to work intelligently by identifying the device in the network by the given IP range and categorize into network devices and servers with vendor and model details.
10	Automatically learn devices that supports SNMP, HTTP, Ping, SMTP, POP3, SOAP, REST API, PDC, SSH and Telnet along with any required protocol to communicate to the devices.
11	Detect & highlight faults (abnormal situations) in near real-time occurring anywhere within the monitored IT Infrastructure
12	Sends alert via E-mail, SMS, , SNMP Trap, XML notification/ Execute Batch file, Pop-up window / Audio alert
13	The solution should be able to stop SLA calculation for every node in case of knows downtimes. These should be a one click alarm masking capability in the system
14	Provide a notification mechanism that allows administrator to define what notification channel to be used in different time of days, and able to trigger multiple notifications to alert multiple person and actions
15	Provide online and offline reports that allow the user to view the present usage of their devices. Reports generates should be exportable in the format of HTML, PDF, Excel and CSV. Allows end-users to browse all reports using any web browser like Internet Explorer, Mozilla Firefox, Google Chrome etc. without the need to install any report specific software

16	Supports instant diagnosis of the node status through Ping, Telnet
17	Support Real-Time report generation for checking continuous reachability of target device
18	Automatically learn IP Networks and their segments, LANs, hosts, switches, routers, AAA etc. and to establish the connections and to correlate
19	.
20	It should be a Drag & Drop based Network Diagram builder, Dynamically Upload Images, Customizable objects to support multiple vendors, capability to export maps in an XML format and upload to any other system.
21	Panel View
	b. System should automatically detect the device model display the right panel without any additional configuration
	c. Panel should show all the monitored interface with status
	d. Fan status with live fan icon and LED status for power
22	Tool must provide option to perform standard compliance checks like PCI-DSS, NIST, DISA etc. across all target CLI-based network devices
23	Should identify which users, applications, protocols, countries, AS numbers, top routers, and top interfaces are consuming the most bandwidth
24	System should have capability to alternatively capture traffic data via packet capture.
25	Should be able to associate traffic coming from different sources to application names
26	Should be able to receive flows from non-SNMP-enabled devices,
27	Should monitor Type of Service (ToS), Differentiated Services Codepoint (DSCP), and Per-Hop Behaviour (PHB)/BGP AS / NEXT HOP
28	Should provide flow analysis with 1-minute granularity and The solution should be able to monitor up to 5 million flows per Minute, and should employs advanced optimization methods
29	Tool should allow QoS monitoring of WAN links across multiple technologies and across multiple protocols like HTTP, TCP, FTP, DNS etc.
30	QoS parameters should include link response time, link-level latency, link-level packet loss, link-level jitter, Round-Trip-Time etc.
31	Tool should have option to collect and store system logs from target devices including AAA, routers, switches, WLC, servers, applications & databases
32	Tool should have multiple filtering options for incoming system logs based on target device, log_ID, severity, level, message, OS type, application / database etc.
33	Tool should have option to export specific syslog messages to users via email / SMS
34	System licensing should be based only on Physical Hosts and not charge separately for individual guest VMs running on VM Hosts
35	System show have capability to monitor HTTP service, HTTPS service, FTP server statistics, POP/SMTP services, ICMP services or any customer specific port based systems
36	Cover geographically distributed networks through multi-level scalable distributed deployment architecture
37	Ability to add new pollers at no extra cost.
38	The tool should have option to be deployed in HA mode (High Availability) for redundancy purpose
39	Integration should provide the option in both north as well as south bound integration on each module level. Any fault details should be able to send to third party CRM, Customer Portal, UNMS or even EMS if needed using the XML, Trap / REST Integration/ direct database query integration
40	Provide 12+ open APIs in the system which can be used by customers for integrating their own systems. Integration should provide the option in both north as well as south bound integration using multiple options like XML, RestAPI/ SOAP/, Corba etc. on each module level. Any fault details should be able to send to third party CRM, Customer Portal, UNMS or even EMS if needed using the XML, Trap/ direct database query integration/REST integration

41	The tool should have an integrated ITSM module which must be certified by PinkVerify for ITIL v3 on at least 05 ITIL processes and certificate must be provided on request. it should be possible to use the service management features like Incident Logging, Viewing, Assignment, Escalation, Reporting, SLA Management etc. in the Service Manager tool GUI. The integration should be bi-directional in nature.
42	The NMS should have Bi- Directional integrated NCCM tool and should have possibility to use the feature in future without any additional installation

Video Management Software		
S/N	**Parameter**	**Minimum Specification**
1	General	The VMS should support any ONVIF compliant IP cameras and should support ONVIF Profile S, G, T & M and same should be reflected in www.onvif.org in the Conformant Devices.
		VMS shall be capable of being deployed in a virtualized server environment without loss of any functionality
		The Offered VMS must be Open Platform Video Management Software (VMS) Application, should be Brand Agnostic, & should support various third Party ONVIF IP Cameras, this is Compulsorily required so that the Same VMS Applications can be scaled up in future by just Adding third Party IP Cameras & Additional Software Licenses.
2	Support of NVR and DVR	The Offered VMS must support the Following features when Connected with Third Party DVR's & NVR's i. Fetching & Displaying Live Streams from all Channels, ii. Recorded Playback Video Streams from all Channels, iii. Alarm Events Health Status of DVR's & NVR's
3	Video channels Support	The IP Video Management Software should allow Live Viewing, Recording and Management solution of Network Video surveillance systems & shall not have any Limit on the Number of Cameras to be Connected & shall be Scalable to Unlimited IP Cameras in Future by Augmentation of Camera channel Licenses & server Hardware Components.
4	User Management	Centrally controlled user management - Users, roles, rules and privileges should be stored on the VMS server allowing any authorized user to log into any workstation.
5	Device Discovery	The VMS shall have ability to easily install, configure, modify, search and remove surveillance devices with automatic discovery of IP devices.
6	Event management	The VMS shall have ability to enforce custom settings for event detection, alarm notification, recording, input/out (I/O) control, and other features in response to events. The alarm management module shall support graphical displays with interactive icons to display the status of the cameras & other inputs.
7	Software/Patch Upgrade	It Should allow quick software and patch upgrade and support of new devices, drivers and operating systems. System should be able to implement software upgrades without requiring all hardware components to be reconfigured.
8	Recording & Transfer	Should support Multiple streaming, must support for Independent Stream Configuration for Recording & Live Streaming Separately
		Should allow each stream to be viewed independently by client viewer. The VMS Client must have Options to select the Recording Stream for Viewing, Separate

		Live Stream for Viewing & must also have the option to directly stream the Cameras irrespective of the Recording stream and Live Stream.
		Recording from connected cameras should be stored in individual databases.
		Should support multiple storage file formats such as asf/.ts/.wmv etc.
		Should support recording in all resolution at desired FPS
		Should support video cum audio recording
		Shall support automatic failover for recording
		The VMS Shall have a Built-in Storage Calculation tool, that shall allow for Storage Calculation based on the Total No. of Cameras Added, No. of days Storage is required & the Available Hard disks within the Server/Mapped Storage. The Storage Calculation must also provide estimation of the No. of Days recording that can take place depending on the Total Availability of Storage Space & No. of Cameras added & configured at their respective configuration.
		The Proposed VMS Solution must support native Fail over with in the application with no dependency on any external application for both hardware and application redundancy. The native failover architecture must be for both management and recording servers
		The Fail over and Fall-back management and recording Server shall be on hot standby, ready to take over during the primary management server fails. No manual action from the user shall be required. The fail-over time should not be beyond 30 Seconds.
		Should automatically retrieve and store recording stored on the camera once the network connectivity between the camera storage and the VMS is restored. Edge Recording Synchronization: VMS Server and Camera should sync recordings in case of network or other communication failure between camera and VMS, through ONVIF G Profile or through Dedicated SDK/API Integration or any other proposed solution
		Shall be capable of transferring recorded images to recordable media (such as CD/DVD and/or tapes)
		or Video Exports with Watermark and Encrypted with SSL / TSL technology, one can protect the video tampering and prove that the video is not tampered
9	Customized Record Retention	Should support Customized recording retention period for specific camera, group, area etc.
10	Parameter Configuration	The VMS shall have ability to configure multiple streams with different quality parameters e.g. Codec (H.264, H.265, MPEG, JEPG) , resolution, frame & bit rate etc.
11	Protocol Support	HTTP, TCP, UDP, RTSP, Multicast.
12	Device Search	The VMS shall have ability to search and view device(s) based on standard criteria like ID, Name, Location, Group, Type etc.
13	Storage Indexing	VMS should store video feeds in a standard folder tree structure so that it becomes easy for system admin to browse videos categories based on year, month, date and time wise. Also, the file name should indicate important attributes like camera location, date, time etc.
14	Controls	PTZ configuration and control including presets, patterns, patrolling, priority, Zoom in/out and permissions.
		PTZ Control, Digital PTZ Control, PTZ Joystick Support, Preset position setup, Preset position search, Optical zoom in, zoom out, focus in, focus out, Digital zoom enable / disable, Full screen view enable/disable, Camera connect/ disconnect
15	Image Snapshot	System should allow creating a still image from live or recorded feed and storing it into a workstation.

16	Video Search and retrieval	The VMS shall have ability to quickly search and retrieve recordings: Search methods should include search by camera(s), group, date/time, alarm/event / bookmark list, smart (motion) search by creating motion index or by generating thumbnail summary of a video archive to locate specific event.
		The VMS Application must Support for P2P Communication Model for Communication of the NVR & the VMS at the SP Offices. Any Additional Hardware & Software required for Achieving the P2P Communication Model has to be Considered as a part of the BID.
17	Playback Control	The system should offer following playback controls like Play/Pause, Lock speed, Forward playback, Reverse playback.
18	Reports	The system should provide interactive reporting interface with standard and user-defined custom reports and filtering options to:
		Review currently logged in users and functions being performed.
		Retrieve audit trails - user activities, errors and system logs.
		View list of hardware units and selected configuration options.
		List down configured users and corresponding roles & permissions.
		View details of bookmarks, event/alarm history and exported evidences.
19	Security	The VMS recorders should be able to connect via a secure connection using authentication and encryption
		o Authentication - user and password credentials
		o Encryption – 256 Bit encryption Techniques
		The VMS recorder should be able to connect via a secure HTTPS connection to its associated edge devices (IP cameras & encoders)
		The VMS management database connection should be encrypted using 256-bit encryption
		The VMS should encrypt the exported file format using password protection
		The OEM of the proposed VMS should have certificate from CERT-IN empaneled Government auditors/ agencies to mitigate cyber security attacks as per OWASP Top 10 Vulnerabilities. And should have CERT-IN certificate before the date publishing of the RFP.
20	License	The proposed VMS should be supplied with all types of required licenses including workstation/client licenses (Web, Mobile) valid perpetual for life.
21	External Storage Connectivity & it's Resiliency	The VMS must support for Connecting Multiple External Storage Devices in the form of Primary & Secondary Storage Drive.
		It must also have the Option of Storage Drive Redundancy, wherein if the Primary Drive is Unavailable then the VMS Application/Recording Server must Automatically Start Recording in the Secondary Configured Drive.
		In Case of Recording has been done in Secondary Storage Drive, during the Failure of Primary Drives then after the Primary is restored the Recording that took place in the Secondary Drive shall be Synchronized in the Primary Drive.
22	VMS Web Client	The VMS Web Client shall have Dash boarding Capabilities, such that the Dashboard should Support for Drawings/Maps GIS Layer, OSM Layer, Autocad.dwg FIle, .JPEG file format, .PDF file format, Customized Video Grid for Live & Playback of Video & Events Table The VMS Web Client shall have a Reporting functionality in the form Camera Uptime, Downtime. The VMS Web Client shall also show the Recording server status Report, Storage Space Available status & Reports.

		The VMS Web Client must support for H.265, H,264 Codec Live & Playback Streaming.
23	Systems Management & Administration	The software MUST come as one unit and not multiple loadable units, the Management Server shall be loaded on a Single Machine, from which all the Cameras, Additional Recording Servers, Video Analytics Servers & Viewing Clients, shall be managed Centrally.
		The IP Video Management Software should allow Live Viewing, Recording and Management solution of Network Video surveillance systems & shall not have any Limit on the Number of Cameras to be Connected & shall be Scalable to Unlimted IP Cameras in Future by Augmentation of Camera channel Licenses & server Hardware Components.
		The Video Management Software shall be Client-Server based IP Video security solution that shall provide seamless management of Digital Video, Audio and data across an IP network. The video management Software shall provide full virtual matrix switching and control capability. Video from sites shall be possible to view from single or numerous workstations simultaneously at any time. Cameras, recorders, and viewing stations may be placed across the terminal in the IP network.
		The Video Management System shall allow an unlimited number of cameras to be connected to each recording server and an unlimited number of recording servers to be connected to each management server across multiple sites, if required.
		The VMS shall be based on a true open architecture that shall allow the use of non-proprietary workstation and server hardware, non-proprietary network infrastructure and non-proprietary storage. The VMS should not be Pre-Installed on Embedded Linux Platforms.
		The Video Management System shall be a fully distributed solution, designed for limitless multi-site and multiple server installations requiring 24/7 surveillance with support for devices from different vendors. The Video Management System shall offer centralized management of all devices, servers and users and must empower a flexible rule-based system driven by schedules and events.
24	Video Management Software (VMS) OEM Competency	The Open Platform Video Management Software (VMS) Application, should be Brand Agnostic, should support various third Party ONVIF IP Cameras, this is Compulsorily required so that the Same VMS Applications can be scaled up in future by just Adding third Party IP Cameras & Additional Software Licenses.
25		VMS is capable to search 18 months old video footage from the storage

Server		
S/N	**Parameter**	**Specification**
1	Processor	Latest generation Intel/AMD processor(s) with 12 or higher cores Processor speed should be minimum 2.2 GHz
2	RAM	32GB (Upgradable to 64GB)
3	Graphics	Internal/External Graphic controller with minimum 2 GB video memory (non-shared), NVIDIA/AMD
4	Internal Storage	128GB or better
5	Network interface	2 X 1G ports for providing Ethernet connectivity
6	Power supply	Support 2 Hot-Swappable Power supply in N+1 Mode or more

7	RAID support	1, 5, 6, 50, 60 & Hot-spare support from day-1
8	Operating System	The licensed latest version of Linux/Windows based Operating System
9	Form Factor & HDD Bay	3U/4U, 19" Rack Mounted with 16/24 Hard Disk Bay option
10	Interfaces	Video Output: 1x D-sub VGA/DVI/HDMI/Mini Display port 4x USB2.0/USB3.0 Ports 1x Serial Port SAS/NLSAS JBOD expansion Port
11		Bidder should have to ensure smooth functioning of the CCTV camera systems in the installed VMS/CMS under the server configuration. The Server requirements mentioned in this RFP are a minimum indicative requirement. The bidders are advised to carry out a detailed assessment of the server requirements to fulfill the objectives of this RFP. Any additional server capacity requirements for the same as a part of the solution. The same has to be managed by the bidder at no additional cost to the tenderer. Bidder has to submit the required server detail in the solutions document.
12	Certification	Server should have CE/ equivalent Indian Standard, FCC/ equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard Certified and BIS certification required. Note: In case of Make in India Product UL certification is not required, however, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP.

4.1 Storage (for Video's)

	Storage - 1PB/2PB	
S/N	**Parameter**	**Specification**
1	Form Factor/Mounting	3U/4U, 19" Rack Mounted (3U/4U defined for single unit/chassis of complete stack/main unit, combination of units/chassis can be higher U size to achieve 1PB & 2PB will be allowed.)
2	No. of Controllers per appliance	Minimum 2 nos.
3	Network Connectivity Per Controller	Minimum 4x 1GbE + 2x 10GbE SFP+ or higher
4	Capacity Expansion	Should support 10 or higher JBOD's/Expansion Units or should have minimum 176 HDDs or better support in a single stack
5	Storage Expansion Port per Controller	2 x 12Gb SAS Mini-SAS (SFF-8644)
6	Supported Network Protocols	SMB/CIFS, NFS/FTP/WebDAV, FC, iSCSI etc.
7	Drive Support and Type	16 # 3.5" Drives (Upto 14TB per drive) or higher
		SAS/NL-SAS HDD, 7200 RPM or higher
		Supports mix of SAS and SATA drives in the same enclosure
8	Cache/Memory	64 GB per device and upgradable to 128 GB per device
9	Storage Capacity along with expansion using JBODs	1000 TB usable capacity after application of RAID group + hot-spare configuration per enclosure in a single stack For 1 PB 2000 TB usable capacity after application of RAID group + hot-spare configuration per enclosure in a single stack
10	Management Port per Controller	1 x RJ-45 1GbE Ethernet and 1 x Serial Port
11	Green Features	Efficient 80 Plus Compliant Power Supply
12	Supported OS	Windows Server 2016 or higher, , Linux (RHEL 8.6 or higher and SLES 11 or higher)
13	Power Supply	Should support Redundant Power Supply

14	RAID configuration	1 , 5, 6, 50,60 & Hot-spare support from day-1
15	Hot Spare Disk	It shall provide at least one hot spare disk per appliance/enclosure
16	General Features	Should support data migration to healthy drive if find un-healthy disk member in array before the disk drive fails.
		Should support remapping of bad sector of disk and SMART/equivalent error handling
		Should support scheduled Backup, Asynchronous Backup and incremental backup with cloning of share & volume for data backup and recovery
		Should support Write Once Read Many (WORM) feature
		Should support logging of NVRAM error
		Should support for Cloud Backup
		The storage system shall come standard with Advanced Battery Flash Backup design and should have Cache to Flash features Built-in.
17	Warranty/Replacement	Five years warranty/replacement from OEM for appliance including SAS HDDs
18	Functional requirement	Bidder should have to ensure 18 Month capacity. The storage requirements mentioned in this RFP are a minimum indicative requirements. The bidders are advised to carry out a detailed assessment of the storage requirements to fulfill the objectives of this RFP. Any additional storage capacity requirements for the same as a part of the solution. The same has to be managed by the bidder at no additional cost to the tenderer. Bidder has to submit the required storage detail in the solutions document.
19	Certification	Storage should have CE/ equivalent Indian Standard, FCC/ equivalent Indian Standard, UL 62368-1/ equivalent Indian Standard Certified and BIS certification required. Note: In case of Make in India Product UL certification is not required, however, MII product should have a certification from a NABL-approved lab/STQC Lab with equivalent IEC standard (IEC 62368-1) before the date of publishing of the RFP