

भारतीय प्रौद्योगिकी संस्थान कानपुर
Indian Institute of Technology Kanpur
सुरक्षा अनुभाग
SECURITY SECTION

Notice inviting tenders for supply, installation, testing and commissioning of CCTV surveillance equipment at IIT Kanpur

Sealed bids for supply, installation, testing and commissioning of CCTV surveillance equipment are invited under Two-Bid System from bidders who have participated in the EoI Enquiry No. Security/Tender/2017-18/01 dated June 02, 2017 and also shortlisted in the PoC thereafter.

1. Details of Bid:

Tender No.	Security/Tender/2017-18/04 This tender is open to qualified bidders who have participated in the earlier EoI and PoC.
Posting Date	30 th Oct, 2017
Last Date and time of submission	21 st Nov, 2017 (1600 hrs)
Validity of Bid	90 days
Place of receiving the bid	Joint Registrar Central Stores and Purchase IIT Kanpur Kanpur 208016
Total Number of pages in this Tender Document	13 Pages (Including format for financial Bid)
Important Note	In case there is any doubt with any point in the tender, the same should be brought to notice via email to Security Officer, IIT Kanpur Email: ssandeep@iitk.ac.in

- 2. Scope of Work :** The bidder has to supply and install the surveillance camera along with the VMS, Analytics, ANPR and Face Recognition as detailed in later sections. All networking, network related equipment, civil work, electrical wiring is in scope of IIT Kanpur. However, the bidder must provide details of requirement in the technical bid. Also, the bidder must provide detailed specifications of the Servers required for management/recording and also the NAS/SAN required for storage in the technical bid. The Institute will procure the servers and storage in conformance to technical specs given by the L1 bidder.
- 3. Eligibility of the bidder:** The vendors who have participated in the EoI and PoC during the earlier stages, are eligible for this tender. However, they must maintain the same relationship pair with CCTV camera OEM and VMS OEM as during the PoC. The Bidder must only quote the brands showcased/demonstrated by them individually at the time of Proof of Concept (POC), in the tender.
- 4. Warranty:** Three years on-site comprehensive warranty for camera and software.
- 5. AMC:** Please quote for AMC for on-site comprehensive maintenance for camera and software after lapse of warranty duration. The rates for AMC should be valid for three consecutive years.

6. **Payment Terms:** 90% payment will be released on receipt of all material as per specifications. Remaining 10% payment will be released after successful commissioning of the system. Please note that the servers/storage suggested by the bidder to whom the contract is awarded, shall be provided within 10 weeks of placing the order. Other site readiness like civil/electrical/networking may take some more time
7. The bids will be accepted in two wax sealed envelopes, super-scribed as "Technical Bid for supply, installation, testing and commissioning of CCTV surveillance equipment at IIT Kanpur" and another as "Financial Bid for supply, installation, testing and commissioning of CCTV surveillance equipment at IIT Kanpur". Further, both the envelopes should be packed in one single wax sealed envelope super-scribed as "Technical and Financial Bids for supply, installation, testing and commissioning of CCTV surveillance equipment at IIT Kanpur"
8. All CCTV cameras offered in the project should be ONVIF compliant.
9. Single point of contact for troubleshooting or a helpdesk team will function as a single point of contact for all sorts of problem for this system or for the complete setup. Bidder should have local presence in Kanpur. Entire integration of System will be responsibility of the bidder.
10. The Bidder must only quote the brands showcased/demonstrated by them individually at the time of Proof of Concept (POC), in the tender
11. Financial bids of only those bidders who qualify in the technical bid (wherein all specifications are acceptable) will be opened and compared. The L1 bidder will be awarded the order. However, the appointed committee reserves the right to relax certain specification(s) in case it is found that the particular specification(s) is/are too tight and relaxation is possible to qualify more bidders technically to increase the competition.
12. VMS, ANPR, Face Recognition and Video Analytics should be from same OEM.
13. The bidder should submit, in original, authorisation from the OEMs of camera, VMS, Face Recognition software and ANPR specific to this tender.
14. Documents to be submitted with technical bid:
 - a) Detailed specifications sheets for all equipment proposed, clearly marked with tags as per serial mentioned in the tender document.
 - b) Test certifications of all equipment/software proposed
 - c) BoM in scope of IITK required for the project
 - d) Detailed specifications of servers and storage as required to be procured by IITK.
 - e) Tender specific OEM authorisation for Camera, VMS, ANPR & Face Recognition



(Deepu Philip)

Chairman
CCTV Purchase Committee



ANNEXURE A

(Technical Specifications)

CAMERA AND ACCECSORIES: (the number of camera may increase/decrease marginally)

(i) **4MP Full HD WDR IR Bullet Camera - 50Mtr.**

SNO	Parameter	Value	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
1.	Image Sensor	1/3" 4MP Progressive scan CMOS/CCD		
2.	Minimum Illumination	0.03 Lux/F1.4 (Color); 0Lux/F1.4 (IR on)		
3.	Lens	3.3 -12mm Motorized Lens		
4.	Video Compression	H.265//H.264/MJPEG		
5.	S/N Ratio	More than 50dB		
6.	Back Light Compensation	BLC/ HLC/ WDR(120dB)		
7.	Video Streaming	Should support triple streams		
8.	Resolution	Max resolution 4 MP(2688×1520) others: 3M(2304×1296)/ 1080P(1920×1080)/1.3M(1280×960)/ 720P(1280×720)		
9.	Features	Motion detection, tampering alarm + optional - Tripwire, Intrusion, Object Missing/Abandoned, Face detection		
10.	IR features	50 Meter range, ICR(IR-Cut filter Removable)		
11.	Audio	1 input, 1 output		
12.	Alarm	1 input, 1 output		
13.	Protocols	TCP / IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS,SMTP, FTP		
14.	Weatherproof standard	IP66		
15.	Certifications	UL, CE, FCC, ROHS		
16.	Surge Protection	External/built-in SPD All camera connectors should be enclosed		
17.	Power consumption	AC24V/3A(±10%), PoE+(802.3at)		
18.	General features	The camera should be accessible via web browser. It should be accessible on smart phone, tablets and should support sufficient number of users.		

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(ii) 4MP 30x WDR IP IR PTZ Dome Camera - 100 Mtr.

SNO	Parameter	Value	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
1.	Image Sensor	1/3" 4MP Progressive scan CMOS/CCD		
2.	Minimum Illumination	0.05Lux@F1.6; 0Lux@F1.6(IR on)		
3.	Lens	4.5mm -135mm Motorized Lens		
4.	Video Compression	H.265//H.264/MJPEG		
5.	Zoom	Optical Zoom 30x Digital Zoom 16x		
6.	S/N Ratio	More than 50dB		
7.	Back Light Compensation	BLC/ HLC/ WDR(120dB)		
8.	Video Streaming	Should support triple streams		
9.	Resolution	Max resolution 4 MP(2688×1520) others: 3M(2304×1296)/ 1080P(1920x1080)/1.3M(1280x960)/ 720P(1280×720)		
10.	Features	Motion detection, tampering alarm + optional - Tripwire, Intrusion, Object Missing/Abandoned, Face detection		
11.	IR features	100 Meter range, ICR(IR-Cut filter Removable)		
12.	Audio	1 input, 1 output		
13.	Alarm	1 input, 1 output		
14.	Protocols	TCP / IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS,SMTP, FTP		
15.	Weatherproof standard	IP66		
16.	Certifications	UL, CE, FCC, ROHS		
17.	Surge Protection	External/built-in SPD All camera connectors should be enclosed		
18.	Pan Tilt	Pan Travel 0° ~ 360° endless, Pan Speed: 0.1° ~ 300°/sec Tilt Travel-15° ~ 90°, auto flip 180°, Tilt Speed: 0.1° ~200°/sec		
19.	Power consumption	AC24V/3A(±10%), PoE+(802.3af)		
20.	General features	The camera should be accessible via web browser. It should be accessible on smartphone, tablets and should support sufficient number of users.		

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(iii) 2 MP Full HD WDR IP Box Camera

SNO	Parameter	Value	Compliance Yes/No	Remarks in case of any equivalent feature/non-compliance
1.	Image Sensor	1/2.8" 2 Megapixel CMOS		
2.	Minimum Illumination	0.005 Lux/F1.2 (Color), 0.001Lux/F1.2 (B/W)		
3.	Lens	C/CS Mount Lens		
4.	Shutter Speed Auto/Manual	1/3(4)~1/100000s		
5.	Video Compression	H.265//H.264/MJPEG		
6.	S/N Ratio	More than 50dB		
7.	Back Light Compensation	BLC/ HLC/ WDR(120dB)		
8.	Video Streaming	Should support triple streams		
9.	Resolution	1080P(1920×1080)/720P(1280×720)/D1(704×576)/CIF(352×288)		
10.	Features	Smart Detection Tripwire, Intrusion, Face Detect, Object Abandoned/Missing		
11.	Audio	1 input, 1 output		
12.	Alarm	1 input, 1 output		
13.	Protocols	TCP / IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP		
14.	Certifications	UL, CE, FCC, ROHS		
15.	Surge Protection	External/built-in SPD All camera connectors should be enclosed		
16.	Power consumption	DC 12V ,AC24V, PoE(802.3at)		
17.	General features	The camera should be accessible via web browser. It should be accessible on smart phone, tablets and should support sufficient number of users.		

iii(a) C/CS Mount Vari-Focal Lens for Box Camera

S NO	Parameter	Value	Compliance Yes/No	Remarks in case of any equivalent feature/non-compliance
1.	Focal length(mm)	5~50		
2.	Resolution	3 MP		
3.	Horizontal Angle of View	(°)51~6.1		
4.	Iris	Auto		
5.	Focus	Manual		
6.	Zoom	Manual		
7.	Image size	(inch)(1/2.7)		
8.	Minimum Object	-1.5		

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S NO	Parameter	Value	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
	Dimension (mm)			
9.	Aperture(F)	f/1.4		

iii(b) Box IR Camera Housing

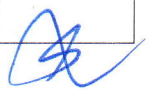
SNO	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
01	Aluminum Casing		
02	IP66, IK10 Housing		
03	IR Range: 50 Mtr. Water Proof Coating Film		

(iv) Network Keyboard Controller

SNo	Parameter	Value	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
1.	Keyboard Key panel	Electromechanical		
2.	Joystick	3-axis, vector-solving, with twisting, return to-center head		
3.	Keyboard Connector	RJ45, RS232, RS485, RS422, USB		
4.	Keyboard Communication	Direct Mode, Network Mode		
5.	Direct Mode Interface:	RS232/RS485		
6.	Network Mode Interface:	RJ45 DVR/Network Dome: IP Address/Port/Protocol		
7.	Resolution LCD,	75.2mm x 33.85mm		
8.	Display	1/4/8/9/16		
9.	Power Supply Power adapter,	input 100V~240V 50Hz / 60Hz,output DC12V/1000mA		
10.	Power Consumption	5W		

(v) High Range IR Illuminator 100 Meter


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SNO	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
01	Accurate constant circuit drive to develop excellent performance of LED; Using high power LED, high efficiency and long service life IR Range of 100 Meter Full Light for night vision camera 60 Degree Angle of View, Indoor/Outdoor use		

(vi) VMS, Video Analytics and other software features

S.No.	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
A	CMS features:		
1.	Centralized Video monitoring of Unlimited cameras spread across multiple sites and places		
2.	Should send alerts in central station according to rules.- Email, SMS, Phone call without auto dialer, Sound alert, Pop up		
3.	Video Analytics alerts: Camera Tampering, Intrusion, Crowd count and Detection, Perimeter Violation, Object Left/Abandoned Baggage, Loitering, Stopped Vehicle, Illegal Parking, Missing object and Speed Violation		
4.	Connection to Multiple-monitors for Live (Fixed and PTZ), Alarm, Maps screens		
5.	E-map showing status of all cameras, devices and Alarms - Connects and Disconnect Status reports		
B	Video Management Specifications for Recordings:		
1	Should record H.265, MPEG4 or MJPEG in at minimum 25 fps at minimum Full HD (1080p) resolution.		
2	Should Support RTP over UDP, RTP over TCP and http streaming		
3	Should support multiple brand IP camera and encoders.		
4	Should support dual streaming and recording at different qualities of videos		
5	Option to do recordings on NAS, iSCSi, DAS, local or network drive, defining different drive for each individual camera.		
6	Should have ability record audio along with video in same recording file.		
7	Option to define multiple recording paths		
8	Option to record at low frame rate on no motion and high frame rate on Motion		
9	Export recordings in mp4, avi and asf formats. Must be playable in any OS Windows, Linux/Unix or Apple Mac.		
10	Export of recording should be possible in client and remote PC with proper authentication.		

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S.No.	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
11	Option for Window-Pop up, Email, Sound alarm, SMS on recording or video loss.		
12	Image Enhancement on recorded videos. The image enhancement should be able to enhance videos of fog, rain and low light conditions.		
13	The option of email and Video Pop up on low disk space event. The system should alert user on low disk space event.		
14	Automatic archiving after set number of days and automatic recording deletion after disk full.		
15	Should have Adaptive Streaming - Option to switch stream to lower to higher or vice-versa based on full screen		
16	Both complete live picture and zoomed picture should be visible simultaneously while zooming		
C	Live View, Playback & PTZ:		
1.	Live View possible for minimum 64 cameras simultaneously on 1 screen or multiple monitors.		
2.	Dual Streaming and Automatic Switching from Low to High Quality while viewing.		
3.	Option to change Live View directly from cameras or from VMS server using RTSP and HTTP options		
4.	It should support live view and Playback from minimum 10 clients- Both local and remote.		
5.	PTZ option available through mouse and joystick.		
6.	Gaming joystick as well as PTZ joystick options available		
7.	On screen PTZ control with Click and Zoom facility		
8.	Live view and Playback available at the same time		
9.	Instant Playbacks available as window pop up on click of an event from Event Screen.		
10.	Image Enhancement Analytic available in Playback. Option to sharpen the video image through scrollbar.		
11.	Playback Navigation Tree View with Recording server, camera list, year/months list and the date wise play list		
12.	Playback option for frame-by-frame		
13.	Playlist with files listed for each date and or time. User can click on any file to play recording.		
14.	Two-way audio communication between camera and VMS. Option to send/broadcast Audio to multiple cameras		
E	Failover Support:		
1.	Both Management and Recording Server failover to avoid recording loss of more than 30 seconds.		
2.	Complete system including clients automatically switched to Failover server in case main server is down		
F	Mobile Surveillance & Remote Viewing:		
1.	Ability to view live video on iOS and Android phones or devices with or without installing proprietary Apps.		
2.	Ability to receive alerts/notifications on Mobile phones with and without SMS using Push technology.		

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S.No.	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
G	Streaming:		
1	Option for RTSP, HTTP, RTSP over HTTP streaming or both simultaneously at individual camera level.		
2	Option to Trans code to lower bit rate stream at recording server level. The lower bit rate can be done for any individual camera and options of resolution at 640x480, 320x240 and Frame rate at 20 fps, 10 fps. This helps in viewing video at low bandwidth.		
H	Alarms, Video Analytics, Event Notification & Offline Analytics for post- event analysis:		
1.	Perimeter Trip wire. Crossing Virtual line		
2.	Object counting or people/vehicle counting analytics		
	Stopped Vehicle Detection for time longer than set duration on no parking zones		
3.	Crowd Counting and detection		
4.	Fire Detection		
5.	Smoke detection		
6.	Intrusion detection on scheduled time intervals		
7.	Abandoned Baggage Detection		
8.	Missing object Detection. Multiple objects selection		
9.	Image Enhancement for fog and low light conditions		
10.	Camera Tampering Detection for camera blurred video or blocking		
11.	Speed Violation		
I	Features required in Analytics:		
1.	Analytics can be applied in Full HD-1080P resolution, H.265 compression and 25fps.		
2.	Both offline and Real time analytics options available.		
3.	Offline analytics possible in avi, mp4, mpeg, H.265, H.264 and asf file formats		
4.	Offline analytics should run in batch mode to take every file from specified folders and run analytics one by one on each file automatically.		
5.	Pre-buffer and Post buffer recordings up to 10 minutes for video analytic events.		
6.	Minimum and maximum object size based filtering.		
7.	Define schedule of video analytics to run weekly, daily, day/night or according to user specified date and time		
8.	Define minimum 20 shapes, lines or zone in single camera for video analytics		
9.	Option to run analytics in silent mode.		
10.	View snapshots of each event and click on event to play recording of that time period.		
11.	Ability to virtually map devices to one another in the VMS. For example fixed cameras and PTZ cameras so that event from fixed cameras can be used to notify PTZ cameras to Zoom, Pan or tilt or go-to preset positions or tour and take snapshots of events.		
12.	Reporting: Report of all events possible through bar and line charts.		

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S.No.	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
J	Administration:		
1.	Automatic discovery of devices using UPnP and/or ONVIF		
2.	The Software shall be ONVIF Profile S compliant		
3.	The VMS shall be flexible to provide and support licenses for any number of cameras.		
4.	The VMS licensing shall allow changing any and all of the cameras at any time without extra cost or license key change		
5.	The VMS shall not require online licensing process		
6.	The VMS shall support instant device/ Camera replacement using original IP address. The IP of the new device/ camera shall not be required to be fed in the software while replacing faulty camera / device		
7.	The System shall have inbuilt Video Analytics wherein at least 50 VMS & 50 Video analytics can run in a Single Server CPU at min. 1080P, 25FPS.		
8.	The VMS licensing shall require MAC Id of Server/ Recorder only, not of camera devices.		
9.	No software limit on number of cameras supported in single recording server		
10.	The VMS Should add all cameras with single click. Apply settings to multiple cameras of same model with single click and add multiple recording servers under same management server.		
11.	No special cameras shall be required for speed detection/violation		
12.	User role based cameras and feature access. Define users with passwords and access to only specific cameras		
13.	Complete server logs including login access, system settings change, archiving events, video or recording loss and all activity done by administrator or any other user in the system.		
14.	Evidence Export Solution - The Software shall be able to create, export and share Incident by making clips from multiple cameras with labels, descriptions and comments. The Clips shall be played simultaneously or sequentially in desired order to give a full view about the incident and the evidence. The systems should combine the video clips from multiple cameras collected together, and then edit them into a movie that contains authenticity checked material and detailed descriptions of what is being shown on the videos. The Evidence solution makes it very easy for the viewer to follow and understand exactly what happened.		
15.	Advanced Activity Search - The software should have the capability to have intelligent and advanced activity /event search detection methods of last 25 such instances in a given period of time which will enable user to search a particular portion in the entire video where the incident / theft / bomb was kept within couple of minutes. The Video of such event can be directly exported from here itself for		

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S.No.	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
	further process		
K	Alarms Required		
1	Ability to pop-up cameras in alarm screen. A separate screen provided where cameras are opened dynamically based on priority of alarms.		
2	Screen configurable to view alarms or 1 -16 cameras simultaneously.		
3	Defining Instruction Message for operator and Acknowledgement for alarms		
4	Alarm priority and alarm colour based on Severity		
L	ANPR		
1.	The ANPR System shall enable monitoring of vehicle flow at specified/desired locations as decided by IIT Kanpur		
2.	The ANPR System will be operational on 24X7 basis.		
3.	The ANPR System should be controlled from location as decided by IIT Kanpur		
4.	The system shall support real-time detection of vehicles at the deployed locations, recording each vehicle, reading its number plate, database lookup from central server and triggering of alarms/alerts based on the vehicle status and category as specified by the database.		
5.	The system usage shall be privilege driven using password authentication.		
6.	The System should automatically detect a vehicle in the camera view using video detection and activate license plate recognition		
7.	The System shall automatically detect the license plate in the captured video feed in real-time.		
8.	The system shall perform OCR (optical character recognition) of the license plate characters (English alphanumeric characters in standard fonts) for all type of vehicles.		
9.	The System shall store JPEG image of vehicle and license plate and enter the license plate number into data base solution (The Application should be based on standard data base solution) The captured OCR result and the image of (non) standard Number Plate should be displayed simultaneously.		
10.	The system shall be robust to variation in License Plates in terms of font, size, contrast and color and should work with 75% accuracy in Standard Number plate and 60% accuracy in non Standard Number plate		
11.	The system shall detect the color of all vehicles in the camera view during daytime /nighttime and label them as per the predefined list of configured system colors. The system will store the color information of each vehicle along with the license plate information for each transaction in the database.		
12.	The system shall have options to search historical records for post event analysis by the vehicle color or the vehicle color with license plate and date time combinations		

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S.No.	Item Description	Compliance Yes/No	Remarks in case of any equivalent feature/ non-compliance
13.	The system should have option to input certain license plates according to the hot listed categories like "Lost" "Wanted", "Suspicious", "Stolen", etc by authorized personnel.		
14.	On successful recognition of the number plate, system should be able to generate automatic alarm to alert the control room for vehicles which have been marked as "Lost", "Wanted", "Suspicious", "Stolen", "Expired". (System should have provision/expansion option to add more categories for future need).		
15.	The system shall enable easy and quick retrieval of snapshots, video and other data for post incident analysis and investigations.		
16.	System Should be able to integrate with the Video Management Software		
M	Face Recognition		
1.	Face recognition for a data base of 15000 is required with minimum accuracy of 60%.		
2.	Face recognition should be successful in case the subject is wearing goggles, with or without beard and also in case if the lower face is covered.		
N	Speed Violation		
1.	Alarm should be triggered, in the form of window pop-up as well as logging (on configured cameras) in case any vehicle crosses the predefined speed limit.		

Note: At any point of time, day 1 to day 3 recording to be available both in the recording server and NAS/SAN storage. Recording server(s) and management server(s) may or may not be placed at the same location as the storage. Day 1 to day 30 recording to be available on the NAS/SAN storage to authorized personnel only. This period should be scalable up to 90 days. Bidders should provide the specifications of storage keeping in view this data. The calculation of sizing should be detailed.

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Chakraborty

Agarwal

**Format for FINANCIAL BID for supply, installation, testing and commissioning of CCTV surveillance equipment at IIT Kanpur
(Tender No. Security/Tender/2017-18/04) dated 30 Oct 2017**

Please refer to item 14 (a) on page number 2 of the tender document

S.No.	Item Description	Qty Nos.	Make and Model	Unit Rate	Amount	GST Rate	Amount with GST	Remarks
1.	4MP Full HD WDR IR Bullet Camera - 50Mtr Certification: UL,CE,FCC; ROHS	*						
2.	2 MP Full HD WDR IP Box Camera including housing and lens Certification: UL,CE,FCC; ROHS	02						
3.	ANPR license (per channel)	02						
4.	(a)4MP 30x WDR IP IR PTZ Dome Camera - 100 Mtr Certification : UL, CE, FCC, ROHS OR (b) 2MP 30x WDR IP IR PTZ Dome Camera - 100 Mtr Certification : UL, CE, FCC, ROHS (same specs as 4MP camera but resolution of 2MP	06 OR 06						
5.	Video Management, Recording and Video Analytics Software per channel license (show cost of base license, if required, separately) Support up to 500 Cameras	*						
6.	Face Recognition per channel license FR license s Support up to 500 Cameras	01						
7.	Video analytics License (per camera or per pack) support up to 500 Cameras	For 60 cameras						
8.	Speed detection/violation per chanel license Support up to 500 Cameras	02						
9.	Network Control Keyboard 3 Dimensional joystick control of PTZ function, onscreen Menu & user	01						
10.	Project Implementation, Commissioning and Training support							
11.	Any other Charges, if applicable							
12.	Total Amount in words and Figures (INR)							
(Authorised Signatory) With Rubber Stamp								

* Please quote in slabs of 100 Nos, 101-150 Nos and 151-200 Nos. Support for 500 cameras means that we should be able to add upto 500 cameras in future

