



CENTRAL UNIVERSITY OF SOUTH BIHAR

SH-7, Gaya- Panchanpur Road, Village- Karhara, Post- Fatehpur,
P.S- Tekari, District- Gaya (Bihar) PIN- 824 236

Notice Inviting Tender (NIT) for

“Supply, Installation, Testing and Commissioning of IP Based CCTV Surveillance System” in and around premises of Central University of South Bihar.

S.no	Items	Details
1.	Tender Notice No.	CUSB/PSD/ADMIN/TENDER/06/2018-19, Dated: 30/06/2018.
2.	Name of the Work	Tender Bid Document for the “Supply, Installation, Testing and Commissioning of IP Based CCTV Surveillance System” in and around premises of Central University of South Bihar, at SH-7, Gaya- Panchanpur Road, Village- Karhara, Post- Fatehpur, P.S- Tekari, District- Gaya (Bihar), PIN- 824 236.
3.	Earnest Money Deposit	Earnest money of Rs. 7,50,000/- in shape of Demand Draft / FDR drawn in favour of Central University of South Bihar, payable at Gaya from any Scheduled Bank.
4.	Pre-Bid Meeting Date:	07 /06/2018 at 11:00 AM
5.	Start of submission of Bids	11/06/2018
6.	Last date and time for Submission of Tender	25/06/2018 by 2:00 PM
7.	Date and Time of opening of Technical Bids	25/06/2018 at 4:00 PM
8.	Place of opening of Bids	University Campus at Panchanpur, Gaya.
9.	Date of opening of financial Bid	Shall be intimated on University website(www.cusb.ac.in)



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Name of the work: “Supply, Installation, Testing and Commissioning of IP Based CCTV System” for Central University of South Bihar at Central University of South Bihar, Gaya (Bihar).

Sold to Sri/Smt./M/s. _____

On payment of Rs. 1,000/- (Rupees One Thousand only) as non-refundable Tender document fee.

Vide D.D. No. Bank & Branch dt.....

We undertake to abide by the terms and conditions as stipulated in the Tender notice and conditions of contract.

**Full Signature of the contractor /
Authorized Representative of Bidder**

Name :

Designation :

Seal:

Contact No.

E-mail



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NOTICE INVITING TENDER

The Central University of South Bihar invites sealed Tenders for the “**Supply, Installation, Testing and Commissioning of IP Based CCTV Surveillance System**” for Central University of South Bihar at Panchanpur, Gaya from original manufactures/ authorized dealers/ distributors. **The last date and time of submission of Tender document is 25/06/2018 by 2:00 PM.** The detailed Tender document is available on the University website www.cusb.ac.in. The cost of Tender form is Rs. 1,000/- and can be purchased by payment in the form of Demand Draft, from Central University of South Bihar. The Tender forms can also be downloaded from University website and be accompanied by DD of Rs. 1,000/- in favour of Central University of South Bihar, payable at Gaya.

Registrar



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“Supply, Installation, Testing and commissioning of IP Based CCTV System” for Central University of South Bihar, Gaya.

The Central University of South Bihar (CUSB), invites sealed Tender in two bid system for the “**Supply, Installation, Testing and commissioning of IP Based CCTV System**” for Central University of South Bihar at Central University of South Bihar, Gaya (Bihar) from the original manufactures/authorized dealers/ distributors. Details are as follows:

S.no.	Description of Good	Estimated Cost	Earnest Money to be deposited	Last date & time of submission of Tender document	Time & date of opening of Tender	Time allowed for completion of work
1.	Supply, Installation, Testing and commissioning of IP Based CCTV System for Central University of South Bihar	3.75 Crores	7,50,000/-	25/062018 upto 02:00 PM	25/06/2018 at 04:00 PM	60 days after award of the work

The Tender must be accompanied by a Demand Draft which is to be kept in **Envelope “A”** for the amount mentioned in Indian Rupees only, on a Schedule Bank drawn in favour of Central University of South Bihar, payable at Gaya as Earnest Money for the above Tender.



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Technical Bid

Note: This is to be kept in **Envelope “A”** sealed and it should be written on envelop that Tender for the **Supply, Installation, Testing and commissioning of IP Based CCTV System for Central University of South Bihar** at Central University of South Bihar Gaya.

Eligibility Criteria

The proposal is open to all Tenderers who fulfill the following requirement:

S.No	Basic Requirement	Eligibility Criteria Requirements	Supporting Document Required
1.	Legal Entity	The Bidder should be a company registered under the Indian Companies Act 1956 or a registered firm/Society under Societies Registration Act.	Certificate of Incorporation.
2.	Existence for 5 years	The Bidder should be in the business of installation & commissioning of CCTV Surveillance security system for a period of at least five years as on 31.03.2018.	Order for system integration of CCTV system should be received more than five years ago as on 31.03.2018. Company profile of the Bidder VAT/TIN no. registration and Service tax registration five years prior to 31.03.2018.
3.	GST Registration	Valid GST registration as on submission of BID	GST registration certificate dated prior to publication of NIT.
4.	OEM/ Authorized Distributor	Bidder should be actual manufacturing companies for CCTV and Surveillance system or their authorized dealers/distributors only.	Documentary proof in support of being a principle OEM of CCTV cameras, NVR, Joystick keyboard and VMS or authorization letter for bidding in the Tender from OEM of CCTV cameras, NVR, Joystick keyboard and VMS in favor of Bidder must be submitted along with the technical bid. Authorization letter from OEM in favour of the Bidder for the said Tender is also required for network switches, Control room Fixtures and monitoring console and LED Display panels.



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5.	Financial Capability	Bidder should have financial turnover during each of the last three audited financial years (ending 31st March 2018) of Rs. 11,00,0000/- (Rupees Eleven Crores) each year from the sale of CCTV surveillance products and solutions.	Documentary proof in the form of Audited Balance Sheet and profit/loss statement for the last three financial years of the firm should be attached with the technical bid. In addition, a certificate from the Chartered Accountant duly attested should be attached stating that the annual turnover of the Tendering firm from the sale of CCTV surveillance products and solutions was at least Rs. 11,00,00,000/- (Rupees Eleven Crores) for each of the last three financial years ending March 2017.
6.	Financial Capability	The Bidder should have a positive net worth for each of last three audited financial years ending on 31.03.2018	Documentary proof in the form of Audited Balance Sheet and profit/loss statement for the last three financial years of the firm should be attached with the technical bid. In addition, a certificate from the Chartered Accountant duly attested should be attached stating that the net worth of the Bidder was positive for each of last three financial years ending March 2018.
7.	Financial Capability	The Bidder should submit a solvency of minimum Rs. 4 Crores issued within last 6 months from the bank.	Solvency certificate from the Bank
8.	Experience in Video surveillance (Technical capability)	The Bidder should have completed at least one similar work worth of Rs. 3 crores in last three financial years or at least 2 similar work worth Rs. 2 crore or atleast 3 similar works of Rs. 1.5 crores. Similar work means Supply, Installation, Testing and Commissioning of a video surveillance project comprising of Integrated IP based cameras including control room for any central government or any state government or semi/quasi-government entities or Public Sector Units.	Work order and satisfactory completion certificates from the customer is required to be submitted.
9.	Technical Compliance	The products quoted should match the specification in the Tender document. Complete Para-wise and item-wise compliance statement of specification with deviation, if any, in the following format should be attached. Failure to this will lead to rejection of the bid.	Technical compliance statement with technical datasheet of products quoted



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10.	No Black listing	The Bidder and any OEM of quoted products should not have been blacklisted or debarred at any time by Central Govt./State Govt./CPSU or any other government organization in India.	Self-Declaration by the Bidder on Company's letter head
11.	Single Bidder	All above conditions are to be satisfied by a single bidding entity. Consortium for any type for satisfying the eligibility criteria is not permissible.	Documentary support to be attached.



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Instructions for Bidding

Supply, Installation, Testing and Commissioning of IP Based CCTV System a CUSB, Gaya, Bihar.

Sealed Tenders are invited, from well established companies who are system integrators of Closed Circuit Television equipment and solutions, at Central University of South Bihar .

In this connection please find enclosed herewith the following

- (A) Technical Bid (Form A)
- (B) Financial Bid (Form B)

Instructions for Bidding

It may be noted that Tenders should be submitted in the enclosed forms as two separate bids, i.e. **(A) Technical Bid**, and **(B) Financial Bid**. Both the bids should be sealed in separate covers with the clearly written identification statement on the cover **(A) Technical Bid** or **(B) Financial Bids**. Both these envelopes should then be enclosed in a big envelope which should also be properly sealed. At the top of this envelope, it must be stated “**Supply, Installation, Testing and Commissioning of IP Based CCTV Surveillance System**” in and around premises of Central University of South Bihar, campuses **due on 25/06/2018 at 2.00 PM**”. Tender without these markings on the envelope is liable to be cancelled. Tenders received after the due date and time assigned for whatever reasons, including postal delay, will not be considered in any case.



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(A) TECHNICAL BID

Please supply the following information along with documentary evidence wherever possible. However, if the space provided for any entry is insufficient, please give information on additional sheets as appendices, and give the number of appendices at the appropriate place. All appendices must be signed.

1. Name of the Manufacturer/ Authorized Dealer (supplier) :

 2. (a) Complete Correspondence Address :

 - Telephone No. of the company :
 - Fax No. of the company :
 - Email address of the company :
 - Website address, if any :
 - (b) Name & Designation of the Contact person(s):
Address :
Telephone No. :
Fax No. :
3. (a) Number & Date of Registration of the manufacturer with the Govt. (if any):
(b) Income Tax Account No.:
(c) ISO Certification? If Yes, give details:
(d) GST No.
(e) Does the Bidder have certification from any other Internationally recognized body of certification? If yes, give details.
(f) Turn-over of just last three financial years (attach proof)
(g) Any other information
4. Profile and detailed Set-up of the Bidder: (Attach also the brochure, booklet etc. of the company, if available).



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5. Give the details of major clients handled by the Bidder (currently in hand or handled in the recent past) in the following format (documentary evidence of major contracts/supplies must be annexed)

Sl. No.	Client details with address, Tel., Fax, e-mail	Amount of supply of IP Closed Circuit Television (CCTV)	Date of supply
1.			
2.			
3.			
4.			
5.			



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Schedule of Requirement

S. no	Item	UoM	Estimated Quantity
	Project Capex Items		
1.	Supply and installation of 4MP IP Bullet Camera	Nos.	33
2.	Supply and installation of 4MP IP Dome Camera	Nos.	262
3.	Supply and installation of IR IP PTZ Speed Dome Network Camera	Nos.	18
4.	Supply and installation of Joystick Keyboard for PTZ cameras	Nos.	3
5.	Supply and installation of 64 Ports NVR with 8 SATA HDD support and RAID 0,1,5 support loaded with 30TB Surveillance grade HDD	Nos.	6
6.	Supply and installation of Video Management Licensed software	Nos.	313
7.	Supply and installation of Central Management Server	Nos.	1
8.	Supply and installation of 42" Display panel for 24 x 7 CCTV application of LG/Samsung/Panasonic	Nos.	10
9.	Supply and installation of Work Station for client monitoring	Nos.	10
10.	DP to HDMI convertor with high quality HDMI cables 5 mtrs	Nos.	14
11.	Supply and installation of Wireless keyboard mouse set with KVM software for upto 4 computers	Nos.	3
12.	Supply and installation of 21" HD LED Display for operators of LG/Samsung/Panasonic	Nos.	3
13.	Supply and installation of 15" HD LED Display for NVR and Server with keyboard mouse set of LG/Samsung/Panasonic	Set	2
14.	Supply and installation of Layer 2, 24 Port POE 10/100/1000 Managed Switch	Nos.	26
15.	Supply and installation of Layer 3, 20 Port 10/100/1000 managed switch with 4 combo SFP ports and 4 SFP + ports	Nos.	2
16.	Supply and installation of IP 65 Rated 6U Rack - indoor loaded with 4 port surge proof PDU, fan, Cable managers, Hardware set, as required	Nos.	25
17.	Supply and installation of IP 65 Rated 6U Rack - Out door loaded with 4 port surge proof PDU, fan, Cable managers, Hardware set, as required	Nos.	2
18.	Supply and installation of 36U Rack loaded with 12 port surge proof PDU, 4 x fans, Shelves, Keyboard tray, Cable managers, Hardware set, Cantilever wheels etc. as required	Nos.	2



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19.	Supply and installation of 1 KVA online UPS of reputed make minimum 1 hour back up	Nos.	5
20.	Supply and installation of 2 KVA online UPS of reputed make minimum 1 hour back up	Nos.	4
21.	Supply and installation of 10 KVA online UPS of reputed make minimum 1 hour back up	Nos.	1
22.	Supply and installation of Media Converter	Pair	4
23.	Supply and installation of POE Injector	Nos.	1
24.	Supply and installation of Fibre LIU 12 port with required couplers and splice tray and required pigtailed	Nos.	30
25.	Supply and installation of Fibre LIU 24 port with required couplers and splice tray and required pigtailed	Nos.	4
26.	Supply and installation of SPF Module	Nos.	60
27.	Supply and installation of SPF+ Module with required patch cords	Set	2
28.	Supply and installation of Fibre Patch Cord SC-LC	Nos.	60
29.	Supply and installation of Fibre Patch Cord SC-SC	Nos.	8
30.	Supply and installation of Patch Cord - 3 Mtr for Server, NVR and media convertors	Nos.	24
31.	Supply and installation of Patch Cord - 10 Mtr for Workstation, joystick	Nos.	13
32.	Supply and installation of Copper Earthing	Nos.	10
33.	Supply and installation of Control room fixtures and control panel for 10 nos. x 42" LCD displays with 10 workstations	Set	1
34.	Supply and installation of 24 ports Patch Panel loaded with i/o	Nos.	28
35.	Supply and installation of 6 m GI Pole with foundation	Nos.	1
36.	Supply and installation of Miscellaneous accessories for control room such as DB box, 32Amp MCB, 6Amp MCB, los with gang box.	Set	1
37.	Hard Soil Digging and refilling	Mtr	800
38.	RCC Digging and refilling	Mtr	200
39.	Supply and laying of CAT6 UTP Cable	Mtr	10980
40.	Supply and laying of 6 Core Single Mode Armoured Fibre Cable	Mtr	10000
41.	Supply and laying of HDPE Pipe 40mm	Mtr	1000
42.	Supply and laying of 3 core x 2.5 sq mm Power Cable	Mtr	2000



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43.	Supply and laying of 1 Inch ISI Mark Conduit	Mtr	7500
44.	Testing and commissioning charges with end to end project management, Training and usage guidance	Job	1
Project Opex Items			
45.	Resident engineers qualified or equivalent for operation and maintenance of control room for a period of 36 months (Quarterly quoted charges for two engineers)	Months	12

NOTE:

- The above mentioned BOQ is for tentative Quantity only. Which may increase or decrease as per requirement as such it is strongly recommended that the Bidder should do the Site Survey and analyze the quantity accordingly before submission of Bids.
- Bidder should take into consideration any items which is not mentioned in the BOQ but required for executing the functional requirement. Quantities of items as mentioned in the BOQ will be paid for by CUSB as actual basis subject to verification.



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General Terms & Conditions

1. Payment Terms - The payment will be released as per below milestones:

For supply & installation items

- 50 % of contract value along with all GST will be released against delivery and inspection of material on site on pro-rata basis, only an submission of BG of 5% of Contract Value.
- 20% of payments will be released against Erection and Installation of material on pro-rata basis.
- Balance 20% of payments will be released on the Successful Testing, Commissioning and installation Report.
- 5% will be released after 1 month after successful Trial.
- Rest 5% within 3 months after successful commissioning & satisfactory report.

For operation and maintenance manpower

Quarterly payments after submission of invoice at the end of each quarter.

2. Performance Bank Guarantee - The successful Bidder will be required to submit a PBG of 5% of the Capex Value (W/O GST) for a period of 3 years from the date of commissioning of the system.
3. Quoted price must be exclusive of taxes. The contract will come under Works Contract and a common GST rate under works contract at a single rate of GST as applicable will be paid by the University on the times which are covered under GST.
4. Delivery and completion Period -

The delivery and completion period will be 10 weeks from date of issuance of PO. Any unjustified delay will attract a penalty of 0.1% per week.

5. Warranty Period and Support

All equipment including cameras, and other items installed/required for installation must have a defect liability period of 5 years from date of commissioning. **However during the maintenance period the equipments including camera ,other installed equipment and their components must be replaced within a week without any extra cost to the University.** The Bidder needs to deploy



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two on-site qualified resident engineers for maintenance and operation of the control room during the 3 year warranty period. The office space, subject to availability, for the engineers will be provided by the University.

6. The Quoted prices should be inclusive of packaging, freight and loading unloading charges till site. CUSB will provide onsite storage of materials during project execution period. However, security arrangement is to be fully ensure by the Bidder.
7. Scope of work for successful Bidder will include supply, installation, testing and successful commissioning of all equipment mentioned BOQ. The scope includes training and usage guidance to CUSB designated staff and providing complete handover documents including as built drawings, asset sheets, license certificate for software, Warranty certificate from System integrator for all hardware supplied for a period of 3 years.
8. Proof of concept – If required by CUSB the Bidder should provide Proof of Concept for the quoted solution when asked for evaluation within a notice of 2/3 days. Non-compliance shall result in rejection of Tender.



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Technical Specifications of items

Technical Specification of PTZ Camera					
Parameter	Desired Specification		Offered Specification	Compliance	Remarks
Camera	Image sensor	1/2.8" Progressive Scan CMOS Sensor			
	Signal System	PAL/NTSC			
	Effective Pixels	1920 (H) x 1080 (V)			
	Minimum Illumination	Color: 0.0001Lux @ (F1.5, AGC ON), B/W: 0.01Lux @(F1.5, AGC ON) 0 Lux with IR			
	Electronic Shutter Speed	1/3 ~ 1/100,000s			
	Signal to Noise	<48 dB			
	Gain Control	Auto/Manual			
	White Balance	Auto/Manual/ATW (Auto Tracking White Balance)/Indoor/Outdoor/Fluorescent lamp/Sodium lamp			
	Auto Iris	Auto / Manual			
Lens	Lens Type	4.3mm to 129mm, 30x Optical			
	Zoom Speed	Approx. 2 s (optical lens, wide-tele)			
	Angle of View	80° to 2 ° (wide-tele)			
	Focus Optical Zoom	30X Optical Zoom			
	Digital Zoom	16x Digital Zoom			
	Zoom Speed	Approx. 2 s (optical lens, wide-tele)			
	Aperture Range	F1.6 to F5.0			
Compression	Video compression	H.265+/H.265/H.264+/H.264/MJPEG			
	H.265 codec profile	Main profile			
	Video Bit Rate	32 Kbps ~ 16 Mbps			
	Audio compression	G.711ulaw/G.711alaw/G.726/MP2L2/G.722/PCM			
Resolution	Max. Resolution	1920 x 1080			



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and Frame Rate	Main Stream	50Hz: 25fps (1920×1080, 1280×960, 1280×720), 50fps (1280×960, 1280×720) 60Hz: 30fps (1920 × 1080, 1280×960, 1280×720), 60fps (1280×960, 1280×720)			
	Second Stream	50Hz: 25fps (1920 × 1080, 1280 × 960, 1280 × 720, 704 × 576, 640 × 480, 352 × 288) 60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720, 704 × 480, 640 × 480, 352 × 240)			
Day/Night Function-ality	Day & Night	IR Cut Filter			
	IR Source	Inbuilt High performance IR LEDs			
	IR Range	Up to 180 Mtrs			
Pan-Tilt	Pan Angle	0° ~ 360° endless pan rotation			
	Tilt Angle	-15° to 90°			
	Pan Speed	Configurable, from 0.1°/s to 160°/s, Preset Speed: 240°/s			
	Tilt Speed	Configurable, from 0.1°/s to 120°/s, Preset Speed: 200°/s			
	Presets	300			
	Preset Accuracy Patrol	Up to 32 presets for each patrol			
	Tour Pattern	8 patrols,			
	Power-off Memory	Should Support			
	PTZ position display	Should Support			
	OSD Menu	Should Support			
Camera ID	Should Support				
Operation-al Features	Privacy Masking	8 programmable privacy masks			
	Alarm Linkage	Alarm actions, such as Preset, Patrol Scan, Pat-tern Scan, Memory Card Video Record, Trigger Recording, Notify Surveillance Center, Upload to FTP/Memory Card/NAS, Send Email, etc.			
	Motion Detection	Should Support			
	ROI	Support two fixed areas.			



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	HLC and BLC	Should Support			
	Smart Auto Tracking	Should Support			
	Defog	Should Support			
	WDR	Should Support			
	Protocols	PELCO-P, PELCO-D, Multi-protocol support			
	Baud Rate	2400/4800/9600bps			
	DNR	Inbuilt 3D DNR (Digital Noise Reduction) circuit			
	SD Card	Built-in memory card slot, support Micro SD/SDHC/SDXC, up to 256 GB; NAS (NPS, SMB/ CIPS), ANR			
	Image settings	Rotate mode, Saturation, brightness, contrast, sharpness adjustable Image settings through client software or web browser			
	User/Host	Up to 32 users, 3 levels: Administrator, Operator and User			
	Security	User authentication (ID and PW), Host authentication (MAC address); HTTPS encryption; IEEE 802.1x port-based network access control; IP address filtering			
Network & Remote Monitoring	Protocols	IPv4/IPv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP/IP, UDP, IGMP, ICMP, DHCP, PPPoE			
	System compatibility	ONVIF(PROFILE S, PROFILE G)			
	CMS	Full function CMS (Central monitoring software) User Access Professional authority management for user access			
	Mobile Client Application	Supports android and iOS APP for Smart phone and tablets			
Interface	Ethernet	1 RJ45 10/100/1000 Ethernet port			
	Audio In/Out	1/1			
	Alarm In/Out	2/1			



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Electrical	Power Requirement	24VAC and Hi-PoE Max.: 40W			
	Surge Protection	TVS 4000V Lightning Protection, Surge Protection and Voltage Transient Protection			
	Power Consumption	Max.: 40 W			
Environmental	Enclosure	Weather proof IP66 vandal proof outdoor enclosure			
	Operating Temperature	-30°C to 65°C			
	Operating Humidity	90% or less (non-condensing)			
Certification	Certifications	UL/EN, CE, FCC, RoHS			

Technical Specification for Dome Camera					
Parameters	Desired Specification		Specification offered	Compliance	Remarks
Camera	Image sensor	1/3" Progressive Scan Sensor			
	Effective Pixels	2592 (H) × 1520 (V)			
	Minimum Illumination	Color: 0.0001Lux @ (F1.2,AGC ON), 0 Lux with IR			
	Electronic Shutter Speed	1/4s to 1/100,000 s, support slow shutter			
	Gain Control	Auto/Manual			
	White Balance	Auto/Manual			
	Signal to Noise	<48 dB			
	Auto Iris	Auto			
Lens	Lens Type	Motorized 2.8 mm to 12 mm @ F1.4, horizontal field of view: 112° to 27°			
	Focus	Motorized Optical Zoom Adjustment			
Day/Night Functionality	Day & Night Switch	Support auto, scheduled			
	IR Cut	IR cut filter with auto switch			
	IR Source	Inbuilt Smart IR LEDs with intensity control			



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	IR Range	35 Mtr.			
Compression	Video compression	H.265+/H.265/H.264+/H.264/MJPEG			
	H.264 codec profile	Main profile/High profile			
	Video Bit Rate	32 Kbps to 16 Mbps			
Resolution and Frame Rate	Max. Resolution	2592 x 1520			
	Main Stream	50Hz: 20fps @ (2592 x 1520, 2560x1440) 25fps @ (2048 x 1536, 1920 x 1080, 1280 x 720) 60Hz: 20fps @ (2592 x 1520, 2560x1440) , 25fps @ (2048 x 1536, 1920 x 1080, 1280 x 720)			
Operational Features	Privacy masking	Should Support			
	Wide Dynamic Range (WDR)	120 dB			
	Backlight compensation	Should Support			
	DNR	Inbuilt 3D DNR (Digital Noise Reduction)			
	Image settings	Brightness, saturation, contrast, sharpness are adjustable via web browser or client software			
	Security	One-key rest, anti-flicker, heartbeat, mirror, password protection, privacy mask, watermark, IP address filter			
	ROI	Region of interest (support 1 fixed region)			
	Alarm trigger	Motion Detection, Tampering Alarm, SD card full, SD card error, Network disconnected, IP Address Conflict, Unauthorized Login			
	Motion detection	Should Support			
Network & Remote Monitoring	Protocols	TCP/IP,ICMP,HTTP,HTTPS,FTP,DHCP,DNS,DDNS,RTP,RTSP,RTCP,NTP,UPnP,SMTP,SNMP,IGMP,802.1X,QoS,IPv6, Bonjour			
	System compatibility	ONVIF (profile S and G)			
	CMS	Full function CMS (Central monitoring software)			
	Mobile Client Application	Support android and iOS APP for Smart phone and tablets			



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	Network storage	Support micro SD/SDHC/SDXC card (256GB), local storage and NAS (NFS,SMB/CIFS), ANR			
Interface	Ethernet	1 RJ45 10M/100M self-adaptive Ethernet port			
	Power Input	Standard DC Jack			
Electrical	Power Requirement	DC12V \pm 25%, PoE (802.3af)			
	Power Consumption	Max. 5.5 W/11 W (with-motor)			
Environmental	Enclosure	IP67 Vandal Proof IK10 enclosure			
	Operating Temperature	-30 °C to 65°C			
	Operating Humidity	95% or less (non-condensation)			
Certifications	Certifications	UL/EN, CE, FCC, RoHS			

Technical Specification for Bullet Camera

Parameters	Desired Specification		Specification offered	Compliance	Remarks
Camera	Image sensor	1/3" Progressive Scan Sensor			
	Effective Pixels	2592 (H) x 1520 (V)			
	Minimum Illumination	Color: 0.0001Lux @ (F1.2,AGC ON), 0 Lux with IR			
	Electronic Shutter Speed	1/4s to 1/100,000 s, support slow shutter			
	Gain Control	Auto/Manual			
	White Balance	Auto/Manual			
	Signal to Noise	<52 dB			
	Auto Iris	Auto			
Lens	Lens Type	Motorized 2.8 mm to 12 mm @ F1.4, horizontal field of view: 112° to 27°			
	Focus	Motorized Optical Zoom Adjustment			
Day/Night Functionality	Day & Night Switch	Support auto, scheduled			
	IR Cut	IR cut filter with auto switch			
	IR Source	Inbuilt Smart IR LEDs with intensity control			
	IR Range	45 Mtr.			



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Compression	Video compression	H.265+/H.265/H.264+/H.264/MJPEG			
	H.264 codec profile	Main profile/High profile			
	Video Bit Rate	32 Kbps to 16 Mbps			
Resolution and Frame Rate	Max. Resolution	2592 x 1520			
	Main Stream	50Hz: 20fps @ (2592 x 1520, 2560x1440) , 25fps @ (2048 x 1536, 1920 x 1080, 1280 x 720) 60Hz: 20fps @ (2592 x 1520, 2560x1440) , 25fps @ (2048 x 1536, 1920 x 1080, 1280 x 720)			
Operational Features	Privacy masking	Should Support			
	Wide Dynamic Range (WDR)	120 dB			
	Backlight compensation	Should Support			
	DNR	Inbuilt 3D DNR (Digital Noise Reduction)			
	Image settings	Brightness, saturation, contrast, sharpness are adjustable via web browser or client software			
	Security	One-key rest, anti-flicker, heartbeat, mirror, password protection, privacy mask, watermark, IP address filter			
	ROI	Region of interest (support 1 fixed region)			
	Alarm trigger	Motion Detection, Tampering Alarm, SD card full, SD card error, Network D is connected, IP Address Conflict, Unauthorized Login			
	Motion detection	Should Support			
Network & Remote Monitoring	Protocols	TCP/IP,ICMP,HTTP,HTTPS,FTP,DHCP,DNS,DDNS,RTP,RTSP,RTCP,NTP,UPnP,SMTP,SNMP,IGMP,802.1X,QoS,IPv6, Bonjour			
	System compatibility	ONVIF(PROFILE S, PROFILE G)			
	CMS	Full function CMS (Central monitoring software)			
	Mobile Client Application	Support android and iOS APP for Smart phone and tablets			



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	Network storage	Support micro SD/SDHC/SDXC card (256GB), local storage and NAS (NFS,SMB/CIFS), ANR			
Interface	Ethernet	1 RJ45 10M/100M self-adaptive Ethernet port			
	Power Input	Standard DC Jack			
Electrical	Power Requirement	DC12V \pm 25%, PoE (802.3af)			
	Power Consumption	Max. 5.5 W/11 W (with-motor)			
Environmental	Enclosure	IP67 Vandal Proof enclosure			
	Operating Temperature	-30 °C to 65°C			
	Operating Humidity	95% or less (non-condensation)			
Certifications	Certifications	UL/EN, CE, FCC, RoHS			
Technical Specification 64 Channel NVR					
Parameters	Preferred Specification		Offered Specification	Remarks	
System	Operating System	Embedded Linux Operating System			
	Multiplex Operations	Simultaneous multi-channel real-time recording, playback, network operation, USB backup			
	User interface	Support 16-bit true color graphical menu interface and mouse operation			
Bandwidth	Incoming Bandwidth	480 Mbps			
Interface	IP Video Input	64-Ch			
	HDMI Video Output	2-ch, Resolution: 4K \times 2K / 1920 \times 1080 / 1280 \times 1024, 1920 \times 1080 / 1280 \times 1024			
	VGA Video Output	1-ch, Resolution: 1920 \times 1080 / 1280 \times 1024			
	Two way Audio Input	RCA \times 1			
	Audio Output	RCA \times 1			
	Alarm Input/Output	8/4			
	Network	2 x Gigabit (10/100/1000) self-adaptive ethernet port (Rj45)			
	e-SATA	2 e-SATA interface			



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	RS-485 Port	RS-485 x 2, one for PTZ, another for Keyboard			
	USB	2 x USB 2.0 Interfaces ,1 x USB 3.0 Interface			
Resolution & Frame Rate	Recording Resolution	8MP / 5MP / 4MP / 3MP / 1080P / 960P / 720P			
	Frame Rate	Main stream: 25 fps (P) / 30 fps (N); Sub stream: 25 fps (P) / 30 fps (N)			
	Video Compression	H.265, H.264			
	Playback Resolution	8MP / 5MP / 4MP / 3MP / 1080P / 960P / 720P			
	Max playback capability	Max 16 ch playback			
Network & Remote Monitoring	DDNS	Supported; Dynamic and Static IP support			
	CMS	Full function CMS (Central Monitoring Software)			
	Mobile Client Application	Support android and iOS APP for Smart phone and tablets			
	System compatibility	ONVIF (Latest Profile Supported)			
	Protocols	HTTP, TCP/IP, IPv4, UPNP, RTSP, SMTP, NTP, DHCP, DNS, DDNS, FTP, P2P			
Features	Security	Password protection, user management			
	Playback Function	Play, Pause, Stop, Rewind, Fast Play, Slow Play, Digital Zoom			
	Search Mode	ALL, Channel, Manual, Time, Date, Motion Detection			
	Smart Search	Highlighted color to display the camera record in a certain period of time, different colors refers to different record events			
	Alarm Trigger	Recording, Email, FTP, Snapshot, Buzzer and Screen Tips, alarm output			
Recording & Storage	Recording Mode	Manual/Motion Detection/Continuous			
	Storage	8 x SATA port up to 8TB Each			
	RAID support	RAID 0,1,5,10 supported			



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	Backup Mode	USB Device/Network			
	Overwrite Mode	Should Support			
General	Power Supply	ATX			
	Power Consumption	<15W (without HDD)			
	Operating temperature	-10°C to + 55°C			
	Working Humidity	95% or less (non-condensing)			
Certifications	Certifications	UL/EN, CE, FCC, RoHS			

Technical Specification of Joystick

Parameters	Required Specification	Offered Specification	Compliance	Remarks
Control Mode	IP based			
LCD screen & Resolution	7" TFT LCD monitor with touch panel (800 × 480 resolution)			
Joystick	4-axis joystick			
Network Port	1 10M/100M/1000M Ethernet interface			
Audio In/Out	1/1			
Serial Interface	1 x RS-232, 1 x RS-485			
USB Port	1, USB2.0 (for data storage and device upgrade)			
Power supply	12V DC			
Power consumption	≤ 15 W			
Working temperature	-10 to +55° C			
Working humidity	10 % to 90%			
Certifications	CE, FCC, RoHS			



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TECHNICAL SPECIFICATION OF 24 PORTS POE 10/100/1000 Layer 2 Switch			
Desired Specification/Qualitative Requirement	Offered Specification	Compliance (Yes/No)	Remarks
Switch should have minimum 24 x 10/100/1000 Mbps, 2 x Gigabit SFP, and 2 x 10G SFP+.			
All 24 Copper Ports should Supports PoE and the power budget is 190 Watt			
Switch should have minimum 92 Gbps Switching Capacity.			
Switch should have minimum 68.45 Mpps packet forwarding rate			
Should support single IP Management to enable management of minimum 30 switches using a single Web interface; simplifies management of multiple devices			
Should Support Physical Stacking Up to 6 units per stack with Up to 40G stacking bandwidth full duplex and Supports Duplex Chain/Ring topology.			
Should support minimum 16K MAC address entries			
Should support IGMP Snooping and 256 IGMP groups			
Should support MLD snooping			
Switch should support IEEE 802.3ad Link Aggregation control protocol up to 14 Groups for switch, 8 ports for Group. And should support LLDP-MED.			
Switch should have support for below Spanning Tree Protocol Standards:			
• 802.1D STP • 802.1w RSTP • 802.1s MSTP • Ethernet Ring Protection Switching (ERPS)			
Switch should support IEEE 802.3X Flow control, BPDU Attack Protection and DoS Attack Prevention.			
Should support loop back detection, Guest VLAN, RADIUS and TACACS+ authentication for switch access, RADIUS and TACACS+ accounting			
Switch should have support for Cable diagnostics			
Switch should support Port Mirroring to Enable traffic on a port to be simultaneously sent to a network analyzer for monitoring			



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Jumbo Frame support up to up to 10 kilobyte frame size to improve the performance of large data transfers			
Switch should support IEEE 802.1Q with 4,094 simultaneous VLAN IDs			
Should have support for Auto-voice VLAN to Recognize IP phones and automatically assigns voice traffic to dedicated VLAN for IP phones			
GVRP support for automatically propagating and configuring VLANs			
Switch should support Strict Priority Queue (SPQ) & Weighted Round Robin (WRR)			
Class of Service should be based on 802.1p Priority Queues, DSCP, ToS, IPv6 Traffic Class, IPv6 Flow Label etc.			
Should support Bandwidth control			
Switch Should Support Green Technology			
Switch should support Static routing for IPv4 and IPv6.			
16 IP interfaces, IPv6 Neighbour Discovery (ND), Supports Gratuitous ARP			
Should support Broadcast/Multicast/Unicast Storm Control			
Should support DHCP Snooping			
Should have Support for advanced network security applications such as IEEE 802.1X			
Switch should allow only authorized users by checking whether the source MAC and IP addresses of an inbound packet is identical to the configured MAC-to-IP binding on the port			
OEM should be in Gartner Wired & Wireless Access LAN Magic Quadrant from last 3 years (Documentary report to be submitted)			
Switch should support IPv6 Neighbor Discovery (ND) , IPv4 /IPv6 Dual stack, IPV6 Host management and IPv6 Ready Logo Phase 2 certified			
Should support SNMP v1, v2c and v3, IEEE Compliant: IEEE802.3az standard support, Debug command, CLI Port (RJ45), SNTP, LLDP, LLDP-MED, RMON, DHCP Auto Configuration, Dual images Support, Support IPv4/v6 Dual Stack, IPv6 Neighbour Discovery Support.			
Switch should be CE, FCC, UL, VCCI, BSMI, CCC, cUL, CB, Certified			



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Technical Specification of Layer 3 Switch			
Desired Specification	Offered Specification	Compliance Yes/No	Remarks
<u>Architecture</u>			
Proposed Switch should have 20 x 10/100/1000BASE-T ports 4x Combo 10/100/1000BASE-T/SFP ports and 4x SFP+ ports			
Switch should Support Internal/External Redundant Power Supply.			
Switch shall have SD Card slot/USB/External flash for easy file store & restoration like firmware, configuration file, boot image, syslog etc.			
Shall have 1GB DRAM and 1GB flash			
Shall Should have one USB port for firmware and configuration files			
Console Port: RJ45 and Mini USB console ports for out-of-band CLI management			
Management Port: 1G RJ-45 Ethernet for out-of-band IP management			
Alarm Port: 1 RJ-45 port			
The Switch shall have Non-blocking wire speed switch fabric with Min. 128 Gbps Back plane or higher			
The Switch shall have Min.95 million pps or higher			
The Switch shall support Min. 68K Mac address			
The Switch shall be able to do Physical Stack min 9 units per stack and support long-distance stacking over fibre			
The Switch shall be able to do IP Stacking up to 30 units per IP			
The Switch Should support Jumbo Frame (up to 12K Bytes)			
Switch should support ARP, Proxy ARP and Gratuitous ARP.			
The LAN switch shall have IEEE 802.1Q VLAN encapsulation and should support 4k Vlans.			
It shall have support for Detection of Unidirectional links and to disable them to avoid problems such as spanning tree loops			
It shall support 802.1v Protocol-based VLAN and MAC based Vlans			



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Should support 6 kV surge protection on all RJ-45 access ports			
Should support GVRP or equivalent, Private Vlan or equivalent, Subnet Vlan or equivalent, Voice Vlan and QinQ (port based qinq and selective qinq).			
Multicast VLAN to allow multiple VLANs to receive the same multicast traffic			
Switch should have support for below Spanning Tree protocol Standards:			
• 802.1D STP • 802.1w RSTP • 802.1s MSTP and Loopback Detection			
The Switch should have 802.1AX Link Aggregation Up to 30 groups per device.			
Port Mirroring One to one/Many to One, Flow based mirroring & VLAN Mirroring			
Switch shall support ITU-T G.8032 Ethernet Ring Protection Switching to provide protection for Ethernet traffic in a ring topology, while ensuring that no loops are within the ring at the Ethernet layer			
The Switch shall have the intelligence to detect the loop occurring from the unmanaged network segment			
Switch should support Static routing for IPv4 and IPv6, RIP for IPv4 and RIPng for IPv6, OSPF, OSPF v3, BGP4, BGP4+ IS-IS v4/V6 and MPLS from day 1			
Multiprotocol extensions for BGP4			
Switch should support PIM-SM, PIM-DM, PIM-SDM, PIM-SMv6, DVMRP v3 and MSDP			
Should have policy based routing.			
Route Redistribution support			
IPv6 Tunnelling: Tunnel types should be supported are Static, 6to4, ISATAP and GRE.			
Should support VRRP v2 & V3.			
Should support Bidirectional Forwarding Detection			
Should support URPF, ECMP.			
Switch should support 802.1p priority queuing with 8 queues per port.			
Queue Handling mode: WRR & Strict Mode, Strict + WRR and Weighted Deficit Round Robin (WDRR)			



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Granular Rate Limiting functions on per port & flow based to guarantee bandwidth in increments shall be as low as 8 Kilobits per Second.			
Class of service shall be based on Switch port, DSCP, Vlan ID, TCP/UDP port, Protocol type, 802.1p queues, IPv4/v6 address, IPv6 flow label & User defined packet content			
Broadcast and Multicast traffic/storm control			
Weighted Random Early Detection (WRED) for congestion control			
802.3ah Ethernet Link OAM (EFM)			
802.1ag Connectivity Fault Management (CFM)			
Switch shall support ITU-T Y.1731			
Optical Transceiver Digital Diagnostic Monitoring (DDM) & Dying gasp			
IEEE 802.1X Port Based Access control and Host based Access control and Guest Vlan			
It shall support RADIUS/TACACS+ authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration.			
It shall have IP-MAC-Port binding			
Switch should be able to authenticate and access control based on MAC and web (Http or Https)			
BPDU Attack Protection, ARP protection, IP Source Guard, Dynamic ARP Inspection and DOS Attack Prevention			
It shall support for SSHv2, SNMPv3 to provide network security by encrypting administrator traffic			
Switch shall support 802.1Qbb Priority-based Flow Control (PFC).			
The LAN switch shall have CLI support to provide a common user interface and command set with all routers and switches of the same vendor.			
It should support Switch Resource Management (SRM) for flexible management of system resources			
Switch Should Support RMON v1 and RMON v2			



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It shall support Trivial File Transfer Protocol (TFTP) to reduce the cost of administering software upgrades by downloading from a centralized location.			
It shall support Network Timing Protocol (NTP/SNTP) to provide an accurate and consistent timestamp to all intranet switches.			
It shall support SNMPv1, SNMPv2c, and SNMPv3 and Telnet interface to deliver comprehensive in-band management, and a CLI-based management console to provide detailed out-of-band management			
It shall have support for Netflow / Jflow / Sflow			
Operating Temperature -5 to 50 °C (23 to 122 °F)			
Storage Temperature -40 to 70 °C (-40 to 158 °F)			
Operating & Storage Humidity 10% to 95% non-condensing			
Certification			
OEM should be in Gartner Wired & Wireless Access LAN Magic Quadrant from last 5 years			
Switch should be CE, FCC,BSMI, VCCI, cUL, CB certified			



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Technical Specification of VMS Software

Sr.No	Desired Specification	Offered Specification	Compliance	Remarks
1.	General			
	VMS software should be flexible, scalable, reliable and powerful central video system. It should provide central management, information sharing, convenient connection and multi-service cooperation. It should be capable of managing devices, live view, storage and playback, VCA playback, and alarm linkage.			
	VMS Features: Provides normal and hot spare installation mode: Provides unified authentication service for clients & servers Provides centralized management for users, roles, permissions, surveillance devices, alarm device and servers Provides log management and statistics function Scalable for medium and large-sized projects Service manager for system health monitoring Streaming gateway: A VSM component that forwards and distributes audio and video data			
	Streaming Service (Optional): Forwards and distributes audio and video data Web Client: Access to the VSM via IP address or domain name Flexible license activation methods: online activation and offline activation Startup wizard guides you through basic operations including: Adding encoding devices Setting recording schedule Configuring event parameters Managing system users Standard ONVIF protocol Remote site's central management: Three adding modes for remote sites available: By specifying the remote site's IP address or domain name			



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<p>Adding remote site registered to the Central System. By importing in a batch Select the alarms configured on the remote site to receive in the Central System. Back up the remote site's database in the Central System manually or regularly. Synchronize the changed resources in the Central System (newly added cameras, deleted cameras, and name changed cameras) with the remote site. Encoding device management: Multiple devices can be added: network cameras, network speed domes, video encoders, NVRs, etc Create passwords for detected inactive online devices The password strength of the added device can be checked by the system for security notification Six adding modes for encoding devices available: By detecting the online devices By specifying the device IP address or domain name By specifying an IP segment By specifying a port segment By importing in a batch</p>			
<p>Recording Server manageable: Add Hybrid Storage Area Network (Hybrid SAN) or Cloud Storage Server as Recording Server Add Hybrid SAN or Cloud Storage Server by IP address Provides WAN access Provides searching the video files stored in Cloud Storage Server Remotely configure the Hybrid SAN or Cloud Storage Server via a web browser One-touch configuration for setting the Hybrid SAN storage Hybrid SAN N+1 hot spare Provide ANR function</p>			
<p>Streaming Server manageable: Add Streaming Server by IP address Provides WAN and LAN access.</p>			



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<p>Smart wall manageable: Four adding modes for decoding devices available: By detecting the online devices By specifying the device IP address or domain name By specifying an IP segment By specifying a port segment Provides WAN and LAN access Add smart wall and link decoding output with the window</p>			
<p>Manage encoding devices (cameras, alarm inputs, and alarm outputs) by areas</p>			
<p>Recording Two storage methods for storing the video files: Encoding Device: DVR/NVR/ network camera (SD card); Recording Server: Hybrid SAN or Cloud Storage Server</p> <p>For remote site's cameras, store video files in the Central System's Hybrid SAN or Cloud Storage Server Continuous recording, event triggered recording, and command triggered recording. Custom recording schedule: All-Day Time-Based Template, All-Day Event-Based Template, and Custom Template Auxiliary storage Picture storage: Store the images (including passing vehicles and triggered alarms) on the VSM server's HDD</p>			
<p>Events & Alarms Detect system-related events : camera events, alarm input events, encoding device exceptions, and server exceptions: Camera events: Motion, Video Tampering, Video Loss, etc. Device alarm input events Device exceptions: Device Offline, HDD Full, HDD Read / Write Error, etc. Server exception: High Mainboard Temperature, Bad Disk, Disk Loss, etc. Create a generic event rule to analyze the received TCP and/or UDP data packages, and trigger events Detect camera alarms, alarm input alarms, encoding device exception</p>			



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<p>alarms, server exception alarms, ANPR alarms, generic alarms, and remote site alarms</p> <p>In the Central System, detect camera alarms configured on remote site</p> <p>Support to save event as alarm when editing event</p> <p>Set linkage actions for event and alarm respectively</p> <p>Send emails to notify users of configured event</p> <p>Send emails to notify users of configured alarm information with email template configurable</p> <p>Set arming template for the events: All-Day Time-based Template, All-Day Event-Based Template, and Custom Template</p> <p>Set alarm priority: high, medium, low, and custom level</p> <p>Set alarm category: true, false, to be acknowledged, and to be verified</p> <p>Set multiple alarm linkage actions: trigger pop-up image, audible warning (voice text is supported), PTZ linkage, map linkage, alarm output linkage, smart wall linkage, recording linkage and alarm notification</p>			
<p>Map management:</p> <p>GIS map to manage the added remote sites E-map to manage the resources on current site</p> <p>Local map file (PNG /JPG /BMP)</p> <p>Main maps and sub maps for the areas</p> <p>Max. 6-hierarchies of maps</p> <p>Add/edit/delete the hot region on the map</p> <p>Add/edit/delete hot spots (camera / alarm input/alarm output) on the map</p> <p>Set monitoring area for camera hot spots</p> <p>Set name, icon and description for the hot regions and hot spots</p> <p>Get live view of cameras on map</p> <p>Customize icon of hot region and hot spot</p> <p>Vehicle management</p> <p>Add vehicle information manually</p> <p>Import vehicle information according to the pre-defined template</p> <p>Role & User management</p> <p>The default password of the admin user must be changed at first-time login.</p> <p>Support changing the password of the admin user</p> <p>The admin user can reset other users' password</p> <p>The user account will be frozen for 30 minutes after 5 failed password attempts</p>			



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<p>Add/Edit/Delete roles and users Roles can be assigned with different permissions, including area display rule, resource access, and user permissions Two default roles are supported: administrators and operators The role name, expiry date, and text description can be set for the roles The users can be assigned with the roles to obtain the corresponding permissions The user name, expiry date, and text description can be set for the users Two types of user status are supported: active and inactive PTZ control permission level (1~100) can be set Domain users can be imported in batches The user can be forced to logout by the admin user</p>			
<p>Security settings: Lock IP address for configurable duration when reaching the configured failed password attempts Set the min. password strength Set the max. password age Lock the Control Client after a time period of inactivity</p>			
<p>System configuration & maintenance: Create a name for the current site A static IP address can be set for the WAN access NTP settings Enable GIS map function and configure the map API URL Active directory settings Allow the system to receive the configured generic events. For Central System, allow remote site registration For remote site, register remote site to Central System VSM server NIC settings Set transfer protocol as HTTP or HTTPS System hot spare settings Reset network information of added devices Export service component certificate from VSM server.</p>			
<p>Live view: View real-time video from the cameras on the current site or cameras imported from a remote site PTZ control; 256 presets/16 patrols/ 1 pattern</p>			



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<p>Manual recording Capture Instant playback Digital zoom Two-way audio Switch between main stream or sub-stream Display live view parameters. Turn on/off the audio in live view; adjust the volume Set the window division POS Live View Display transaction data alongside corresponding video Transaction information video overlay / separate display</p>			
<p>Playback: Play back the recorded video of the cameras on the current site and cameras imported from a remote site Playback by files/ timeline Playback for up to 16 cameras Download the recordings for backup Reverse playback Playback frame-by-frame Single-frame backward Slow forward/fast forward Turn on/off the audio in playback; adjust the volume Video clipping and capture Set the window division Digital zoom Display video parameters Customize playback speed Select storage location and stream type for playback</p>			
<p>Local configuration: Set the network transmission settings Network Performance: Normal/ Better/ Best Play Performance: Shortest Delay/ Self-adaptive Captured Picture Format: JPEG/ BMP Network Connection Mode: Automatically Judge / Proxy View local saving path of videos/ pictures</p>			
<p>Control Client:</p>			



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	<p>GPU hardware decoding Receive alarm Access to VSM via IP address Log in with the domain user The user account will be frozen after 5 failed password attempts Live view View real-time video from the cameras on current site or cameras imported from remote site PTZ control; 256 presets/ 8 patrols/1 pattern PTZ control lock/unlock Set virtual presets Public view and private view Camera auto-switch/View auto-switch Manual recording Capture Instant playback Custom window division Fisheye expansion modes: Fisheye, Panorama, PTZ, etc. Auxiliary screen preview Digital zoom Two-way audio Turn on/off the audio in live view; adjust the volume Camera status detection Arming control Switch the live view stream to main stream or sub-stream Live view on smart wall</p>			
	<p>Playback: Normal playback for continuous recordings VCA playback based on motion analysis/intrusion/line crossing events Async/Sync playback for up to 16 cameras Playback in fisheye expansion mode Add default, customized tag to mark the important video footage Play back the tagged video footage Play back by files/timeline</p>			



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<p>Lock/unlock the video file for file protection Download the video files Reverse playback Single-frame backward Playback frame-by-frame Slow forward/fast forward Customize high speed playback settings Turn on/off the audio in playback; adjust the volume Provide video thumbnail on the timeline Accurate positioning for playback Digital zoom Video clipping Capture Set the window division Camera status detection Switch the video stream to main stream or sub-stream Playback on smart wal Transcoding playback</p>			
<p>Map control GIS map to view the geographic location of remote site and current site E-map to control the resources on current site and remote site <input type="checkbox"/> Get the live view and playback of the cameras on the map Arming control: arm and disarm the hot spots Search and view history alarm of the camera on the map Jump to the hot region map Get a notification message on the map when alarm is triggered Zoom in/out on the map</p>			
<p>Alarm center:</p> <p>Display alarm info including alarm time, alarm name, alarm status, etc. Display system alarm info including time and description View the live video or images from the related camera Play the alarm related video on smart wall. Add a tag to the alarm information Acknowledge the alarm with a text description</p>			



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<p>Arming control for alarms Clear alarms manually Enable/disable the alarm audio Enable/disable alarm triggered pop-up window Search LPR alarms Search event log files and alarm log files</p>			
<p>ANPR control:</p> <p>View live video of ANPR cameras, and the license plate displays. Search logs of vehicle license plate recognized by the camera and the related vehicle passing information</p>			
<p>Video search:</p> <p>Search the video clip by tag, lock, segment or interval Search in storage location in Main Storage or Auxiliary Storage Search the transaction event by inputting the keywords in POS information Search the ATM event by inputting the card number that is contained in the ATM information Set VCA rules to search the video where a VCA event occurs Play back the searched video clip Download the searched video clip Search video files stored on local devices or Recording Server</p>			
<p>People counting statistic Heat map statistic Health monitoring Status overview including camera status, remote site status, decoding device status, VSM status, Recording Server status, and Streaming Server status Detailed status page of cameras, encoding devices, remote site, decoding device, Recording Servers, and Streaming Servers</p>			
<p>Tools:</p> <p>Smart Wall Decode and display the video streams from the camera on the smart wall Switch the live view stream to main stream or sub-stream PTZ con-</p>			



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<p>trol Instant playback View auto-switch VS Player Broadcast Alarm Output Two-Way Audio.</p>			
<p>Download center Check the downloading tasks and status centrally Continuous transmission on the breakpoint Download the player for playing back the video files</p>			
<p>Log search Search log files of VSM, remote site, cameras, and smart walls that are connected to the system Back up log files</p>			
<p>System settings Configure the general parameters Network Performance: Normal/ Better/Best Picture Format: JPEG/BMP Maximum Mode: Maximize/Full Screen Enable/disable auto-login Enable/disable to resume last interface Configure the image parameters View Scale: Full Screen, 4:3, 16:9 or Original Resolution Video Caching: Small (1 Frame), Medium (6 Frames), or Large (15 Frames). Enable/disable main/sub stream auto-adaptive Enable/disable highlight for Motion Enable/disable VCA rule Enable/disable GPU hardware decoding Enable/disable display the transaction information on the live view and playback image Enable/disable display the temperature information on the live view and playback image Configuring file saving path Set local saving path of videos/pictures/packages Configure the FTP parameters</p>			



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<p>Configuring keyboard and joystick parameters Configuring live view and playback settings Configure icons on live view and playback toolbar <input type="checkbox"/> Enable/disable Screen Toolbar Display Set alarm sounds by local audio files or voice engine (require support of the OS)</p>			
<p>Mobile Client:</p> <p>Access to the VSM via IP address Log in with normal user or domain user Log in with HTTP or HTTPS transfer protocol Add/remove cameras to/from My Favorites Search cameras in different sites Live view View real-time The user account will be frozen after 5 failed password attempts video from the cameras Set 1/4/9/16 window division PTZ control Turn on/off the audio in live view Set the video quality Manual recording Capture Two-way audio Digital zoom Fisheye dewarping Add to Favorites and view</p>			
<p>Playback</p> <p>Search by date/storage mode Provides three storage modes: encoding devices, Hybrid SAN, and Cloud Storage Server Play back the recordings Turn on/off the audio in playback Video clipping Capture Synchronous playback</p>			



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Digital zoom Switch the video stream to main stream or sub-stream Fisheye dewarping Transcoding playback PIP mode (only for tablet) Scale up or scale down the playback timeline bar			
Receive and display the alarm notification and view the alarm related live video or recording View the alarm time of current site and remote site Display the camera details including appearance, online status, PTZ controlled. Heat map statistics View/delete/share the captured images and video clips Provide flow statistics of Current Day/ Current Month/History Provide hardware decoding Receive alarm information			
Supported Language English, Spanish, Russian, French, Italian, Polish, Turkish, Dutch, Portuguese, German, Czech, Bulgarian, Hungarian, Thai, Danish, Japanese, Simplified Chinese			

Technical Specification of Workstation			
Parameters	Offered Specification	Compliance	Remarks
Processor –Intel 7th Gen Core i7 processor			
Processor Speed – Minimum 3.2 GHz			
Memory – Minimum 16 GB DDR4			
Hard disks – 1TB SATA HDD			
Computer Memory Type - DIMM			



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OS- Windows 10, 64bit			
Back Panel <ul style="list-style-type: none"> • 2 x PS/2 • 1 x HDMI • 1 x Display Port • 2 x USB3 • 2 x USB2 • 1 x RJ-45 • 2 x audio jacks 			
NVIDIA GTX / Quadro 2GB Graphic card			
Connectivity Type: <ul style="list-style-type: none"> • USB 3.0 • USB 2.0 • 802.11 b/g/n WiFi • LAN: Realtek 10/10/1000 Mbit • Video: as per graphics card output 			
Audio: Realtek ALC87 HD. 2/4/5.1/7.1 channel			
<ul style="list-style-type: none"> • Power Unit: Internal 350 Watt • Chassis: Cooler Master Mini tower • Fans: 2 • LEDs: Power, HDD activity 			

TECHNICAL SPECIFICATION FOR LED SCREEN					
No.	Parameter	Desired Configuration	Offered Configuration	Compliance	Remarks
	Make & Model				
1.	Screen Size(Inches)	42" or above			
2.	LED Type	Edge			
3.	Native Resolution	1920 x 1080 (Full HD)			
4.	Brightness	450cd/m2 or More			



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5.	Dynamic Contrast Ratio	400,000:1 or Higher			
6.	Viewing Angle(HXV)	178 x 178 Degree			
7.	Surface	Hard coating, Anti Glare treatment.			
8.	Orientation	Suitable for Landscape			
9.	Input Ports	HDMI-2,DVI-1,DP-1VGA-1,RJ45-1,USB(3.0)-1, SD Card Slot, Audio-1 or more ports			
10.	Output Ports	Audio-1, RS-232			
11.	Processor	Quad core or Higher version			
12.	Additional features	24X7 grade, SNMP support			
13.	Certifications	UL,FCC, Energy Star 6 rated			
14.	Stand	Wall Mount with installation			
15.	Speakers	10Wx2 – Inbuilt			
16.	Power Consumption	75 watt (Typ)			
17.	Power supply	100-240 VAC, 50/60 HZs			
18.	Accessory	Power Cord, Manual CD, RGB cable, Control software CD/from web site			

Technical Specifications of Central Management Server

Sr. No.	Parameter	Desired Configuration	Offered Configuration	Compliance	Remarks
1.	Form factor	1/2U rack server			
2.	Processor	Intel® Xeon® processor E3-1220 v5 3.0GHz or better			
3.	Chipset	Intel chipset			



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4.	Operating System	Microsoft Windows Server 2012 R2			
5.	Memory	Architecture: 2400MT/s UDIMMs			
6.		Memory type: UDIMMs			
7.		Memory module sockets: 4			
8.		RAM: 16GB			
9.	Hypervisor support	Microsoft Windows Server with Hyper-V, VMware vSphere ESXi			
10.	Storage	2 x 500 GB 7200 RPM SATA 3.5 enterprise level hot-plug hard drives or better			
11.	Slots	2 x PCIe 3.0 slots: x16 slot, full-height (1x8 3.0)+ x8 slot, low-profile (1x4 3.0)			
12.	RAID controllers	PERC H330			
13.	Network controller	Broadcom 5720			
14.	Communications	2 x 1GbE LOM			
15.		Network interface cards (NICs) and host bus adapters (HBAs)			
16.	Power	250W cabled PSU			
17.	Management	Systems management:			
18.		IPMI 2.0 compliant			
19.		Open Manage Essentials			
20.		Open Manage Mobile			
21.		Open Manage Power Center			
22.		Remote management:			
23.		iDRAC8 Express			
24.	Device access	5 total USB:			
25.		Rear: 2 x USB 3.0 ports			
26.		Front: 2 x USB 2.0 ports			
27.		Internal: 1 x USB 3.0 port			
28.	Rack support	Ready Rails static rails for tool-less mounting in 4-post racks with square or unthreaded round holes or tooled mounting in			
29.		4-post threaded and 2-post racks.			
30.	Temperature	Storage: -40°C to 65°C (-40°F to 149°F)			



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		Continuous operation (for altitude less than 950 m or 3117 ft) 10°C to 35°C (50°F to 95°F) with no direct sunlight on the equipment. Maximum temperature gradient (operating and storage): 20°C/h (68°F/h)			
31.	Relative humidity Specifications	Storage: 5% to 95% RH with 33°C (91°F) maximum dew point. Atmosphere must be non-condensing at all times. Operating: 10% to 80% Relative Humidity with 29°C (84.2°F) maximum dew point.			
32.	Power	Power rating per power supply unit (PSU): 250 W (Bronze) AC (100–240 V, 50/60 Hz, 4.0 A-2.0 A) Heat dissipation: 1039 BTU/hr maximum (250 W PSU) [NOTE: Heat dissipation is calculated using the PSU wattage rating] Voltage: 100–240 V AC, auto ranging, 50/60 Hz [NOTE: This system should be designed to be connected to IT power systems with a phase-to-phase voltage not exceeding 230 V]			

Technical Specifications of Control room fixture and monitoring console

- Dacobas Based Monitoring Console
- Provision of Mounting 10 Nos. x 40/42" LED Display panels
- Provision for housing 10 Nos. Workstations with proper heat dissipation mechanism
- Extruded AL Profile structure with MS (2mm) Top & Bottom Frames.
- Pre- Laminated MDF Board Based Fixed Side Panels
- Removable (Push Lock Based) Front & Rear Panel



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- Post Formed MDF Based Table Top
- Special 42" Display Mounts offering upto 15 degree (Up / Down) Tilttable provisions
- Both Horizontal & Vertical Cable Management
- Power Distribution Unit assembly
- Brush Strip on Table Top for Cable Routing
- Fans with air vents for heat dissipation
- Operator provision for upto 3 operators including 3 chairs with tilt able backs and metal wheel base



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“Supply,Installation, Testing and Commissioning of IP based Closed Circuit Television (CCTV) System”

(B) FINANCIAL BID FORM

Last Date & Time for

1. Receipt of Tender Bids ===
2. Opening of Tender Bids

(A) TECHNICAL BID ===

(B) FINANCIAL BID To be announced later (of Short-listed firms only)



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FINANCIAL BID

S. no	Item	UoM	Qty	Unit Price	Total Price
Project Capex Items - A					
1.	Supply and installation of 4MP IP Bullet Camera	Nos.	33		
2.	Supply and installation of 4MP IP Dome Camera	Nos.	262		
3.	Supply and installation of IR IP PTZ Speed Dome Network Camera	Nos.	18		
4.	Supply and installation of Joystick Keyboard for PTZ cameras	Nos.	3		
5.	Supply and installation of 64 Ports NVR with 8 SATA HDD support and RAID 0,1,5 support loaded with 30TB Surveillance grade HDD	Nos.	6		
6.	Supply and installation of Video Management software Channel License	Nos.	313		
7.	Supply and installation of Central Management Server	Nos.	1		
8.	Supply and installation of 42" Display panel for 24 x 7 CCTV application	Nos.	10		
9.	Supply and installation of Work Station for client monitoring	Nos.	10		
10.	DP to HDMI convertor with high quality HDMI cables 5 mtrs	Nos.	14		
11.	Supply and installation of Wireless keyboard mouse set with KVM software for upto 4 computers	Nos.	3		



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12.	Supply and installation of 21" HD LED Display for operators	Nos.	3		
13.	Supply and installation of 15" HD LED Display for NVR and Server with keyboard mouse set	Set	2		
14.	Supply and installation of Layer 2, 24 Port POE 10/100/1000 Managed Switch	Nos.	26		
15.	Supply and installation of Layer 3, 20 Port 10/100/1000 managed switch with 4 combo SFP ports and 4 SFP + ports	Nos.	2		
16.	Supply and installation of IP 65 Rated 6U Rack - indoor loaded with 4 port surge proof PDU, fan, Cable managers, Hardware set, as required	Nos.	25		
17.	Supply and installation of IP 65 Rated 6U Rack - Out door loaded with 4 port surge proof PDU, fan, Cable managers, Hardware set, as required	Nos.	2		
18.	Supply and installation of 36U Rack loaded with 12 port surge proof PDU, 4 x fans, Shelves, Kyboard tray, Cable managers, Hardware set, Cantilever wheels etc. as required	Nos.	2		
19.	Supply and installation of 1 KVA online UPS minimum 1 hour back up	Nos.	5		
20.	Supply and installation of 2 KVA online UPS minimum 1 hour back up	Nos.	4		
21.	Supply and installation of 10 KVA online UPS minimum 1 hour back up	Nos.	1		
22.	Supply and installation of Media Converter	Pair	4		
23.	Supply and installation of POE Injector	Nos.	1		
24.	Supply and installation of Fibre LIU 12 port with required couplers and splice tray and required pigtailed	Nos.	30		
25.	Supply and installation of Fibre LIU 24 port with required couplers and splice tray and required pigtailed	Nos.	4		



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26.	Supply and installation of SPF Module	Nos.	60		
27.	Supply and installation of SPF+ Module with required patch cords	Set	2		
28.	Supply and installation of Fibre Patch Cord SC-LC	Nos.	60		
29.	Supply and installation of Fibre Patch Cord SC-SC	Nos.	8		
30.	Supply and installation of Patch Cord - 3 Mtr for Server, NVR and media convertors	Nos.	24		
31.	Supply and installation of Patch Cord - 10 Mtr for Workstation, joystick	Nos.	13		
32.	Supply and installation of Copper Earthing	Nos.	10		
33.	Supply and installation of Control room fixtures and control panel for 10 nos. x 42" LCD displays with 10 workstations	Set	1		
34.	Supply and installation of 24 ports Patch Panel loaded with i/o	Nos.	28		
35.	Supply and installation of 6 m GI Pole with foundation	Nos.	1		
36.	Supply and installation of Miscellenous accessories for control room suchs as DB box, 32Amp MCB, 6Amp MCB, los with gangbox	Set	1		
37.	Hard Soil Digging and refilling	Mtr	800		
38.	RCC Digging and refilling	Mtr	200		
39.	Supply and laying of CAT6 UTP Cable	Mtr	10980		
40.	Supply and laying of 6 Core Single Mode Armoured Fibre Cable	Mtr	10000		



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41.	Supply and laying of HDPE Pipe 40mm	Mtr	1000		
42.	Supply and laying of 3 core x 2.5 sq mm Power Cable	Mtr	2000		
43.	Supply and laying of 1 Inch ISI Mark Conduit	Mtr	7500		
44.	Testing and commissioning charges with end to end project management, Training and usage guidance	Job	1		
	Total Capex (in Rupees)				
	GST as applicable at common rate of 18% under works contract				
	Total Capex with GST (A) (in Rupees)				
	Project Opex Items (B) (in Rupees)				
45.	Resident engineers for operation and maintenance of control room for a period of 36 months (Quarterly quoted charges for two engineers)	Months	12		
	GST as applicable for services at 18%				
	Total Opex with GST (B) (in Rupees)				

Total Project cost (Capex + Opex) in Words: (Rupees)

Signature of the Bidder