



GOVERNMENT OF KERALA

POLICE DEPARTMENT

Vazhuthacaud, Thiruvananthapuram - 695010

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www.keralapolice.gov.in

H6/150123/2021/PHQ

Dated: 06/01/2022

**e-Government Procurement (e-GP)
NOTICE INVITING TENDER**

The State Police Chief, Kerala Police Department, Government of Kerala invites online bids from **Total Solution Providers (TSPs)** approved by the Govt. of Kerala/ Govt. of India for **DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATIONALIZING AND MAINTAINENCE OF IP BASED CCTV SURVEILLANCE SECURITY CAMERAS AT 520 NOS. OF POLICE STATIONS IN KERALA BY PROVIDING CENTRALIZED MONITORING AT ALL DISTRICT POLICE CONTROL ROOMS IN THE STATE.**

Tender validity should be one year. The project will be completed in a phased manner. Work order to implement the project will be issued for specified number of Police Stations subject to the availability of fund for the purpose. Price quoted for one Police Station would be applicable throughout the tender validity period. After the tender validity period, a fresh tender would be floated.

The contract period shall commence from the date of successful user acceptance of the project implementation. Submission of bids shall be deemed to have been done after careful study and examination of the Tender document with full understanding of its implications. This Tender is issued on **E-Government**

Procurement (e-GP) Marketplace <https://www.etenders.kerala.gov.in> and at <https://keralapolice.gov.in> .

All the Terms and Conditions are to be read jointly as mentioned in the e-procurement market website and in this document. The bidders should comply with the following General conditions in addition to the additional conditions of the Tender.

GENERALCONDITIONS:

All Tender Documents attached with this Invitation to Tender including the specifications are **sacrosanct** for considering any offer as complete offer. It is therefore important that each page of the TENDER DOCUMENTS IS DULY COMPLETED AND SIGNED.

- a) The Bidder should be TSP approved by Govt. of Kerala/Govt. of India and who is having an Authorization Certificate (MAF) from the reputed OEM to participate in the Tender floated by Kerala Police. The MAF Certificate from the OEM must be for all aspects of the project and must include for sales, service and installation and maintenance during the entire warranty period.
- b) One bidder cannot represent two Suppliers/OEMs or quote on their behalf in a particular Tender.
- c) The Bidder should have valid GST registration. Copy of GST registration certificate should be enclosed along with the Tender.
- d) The bidder should have valid PAN/Taxation Index Number. Copy of PAN/Taxation Index Number allocation letter should be enclosed along with the Tender.
- e) TSPs having required capability, experience and resources to undertake this Turnkey Project may send their proposal, duly supported by requisite documentary evidence through the e-Tender portal of Govt. of Kerala.
- f) The bidder must fulfill the following minimum qualification criteria to prove the techno commercial competence and must submit the following documents in

support thereof:

- 1) Valid Authorization letter from the OEM to bid for this particular Tender.
 - 2) Certificate of Registration/Incorporation Certificate of the bidder.
 - 3) The bidder must provide expression of willingness to submit a warranty certificate along with invoices.
- g) The bidder must be able to design, supply, install, commission, test, and provide Warranty support and maintenance of IP based CCTV Camera System and Accessories at all Police Stations in Kerala with OEM's 5 Years Comprehensive On-site Warranty (or) 3 years standard warranty with 2 years extended warranty as defined in this document.
- h) It is the responsibility of the bidder to supply all the items strictly in accordance with the specifications as mentioned in this document and to ensure integrating the existing CCTV Camera System presently available in the Police Stations onto this proposed new system.
- i) During the warranty period, the successful bidders should conduct preventive maintenance once in 4 (Four) months besides attending to calls for resolution.
- j) During the warranty period, all the upgrades of the system and application software, firmware, bug fixes, patches and other relevant services shall also be done by the vendor at no extra cost.
- k) During the project period, the identified bidder should setup a helpdesk for receiving calls for technical support and maintenance of the deployed CCTV Surveillance system 24x7. A dedicated team should be deployed for this purpose along with dedicated phone number and email ID for immediate resolution. A daily report on number of calls received, closed or pending should be submitted to the authorities as may be determined from time to time, and a consolidated report must be sent to Police Headquarters/ appropriate authority as decided from time to time.
- l) The bidder should supply the Bill of Material at the locations/sites within time specified as per the project schedule in this document from the date of order released by the user. All the equipment should be latest and of the

prevailing/current standard production of the manufacturer at the time of the proposal.

m) Bidder shall meet the Service Level Agreement (SLAs) during the support & maintenance period as mentioned in this document. The calculation for penalties for not meeting the SLA requirement during warranty period is defined in this document.

n) Successful Bidder shall carry out the optimal performance test run of the completed system with various cases under the guidance of the user before the user acceptance test to ensure its efficiency.

Pre- Bid Qualifications

Technical Proposal shall contain the scanned copies of the following documents which every bidder has to upload:

1. Document establishing that the bidder is a PSU, Government Enterprises or Government owned societies and a TSP approved by the State Government or Central Government.
2. Document establishing that the OEM should have development Centre/ manufacturing facility in India.
3. The bidder has to provide OEM authorized MAF for the above Project.
4. MAF from OEM to be produced for Cameras, NVR, Cables, Switches, UPS, Surge Protectors, Monitor/ TV, Workstation and relevant software.
5. The bidder should have valid GST registration. Copy of GST registration certificate should be enclosed along with the Tender.
6. Certificate of Registration/Incorporation Certificate of the Bidder.
7. The bidder should have valid PAN/Taxation Index Number. Copy of PAN/Taxation Index Number allocation letter should be enclosed along with the Tender.
8. The Bidder has to provide financial status of the bidder(s) of last 3 years through

P&L and Balance Sheet/ Audit report of last 3 years.

9. Tenderers/ bidders who have been blacklisted/ debarred by Tender Inviting Authority or blacklisted / debarred by any State Government or Central Government department/ Organization /PSUs/ Autonomous Bodies shall not participate in the tender during the period of black listing. Affidavit thereof should be submitted along with the Technical bid.
10. Signed scanned copy of Tender document.
11. Item wise Technical Compliance Sheet
12. Bid capacity certificate (Registration certificate, Market standing certificate often Years, Copy of purchase orders, Performance Certificate).
13. The OEM/ Bidder should have a well-equipped Service Centre functioning in India (preferably in Kerala State) and be ready to set up a centre in Kerala, once selected (within 30 days), to cater to after sales service. A copy of the Service Centre details must be closed along with Tender document.
14. The bidding party must indicate their willingness to provide a PoC at any local site as suggested by the user.
15. CCTV Camera OEM should have been in business in Indian market for the last 10 years.
16. Work should be executed by certified OEM Integrator.
17. Integrator/ TSP must indicate experience of having successfully completed similar works (similar work means, supply, installation and commissioning of IP based CCTV project) during last 7 years ending last day of month previous to the one in which applications are invited to be one of the following.
 - Three (03) similar (CCTV project) completed works costing each not less than the amount equal to 50 Lakhs.

OR

- Two (02) similar (CCTV project) completed works costing each not less than the amount equal to 1 Crores.

OR

- One (01) similar (CCTV project) completed work costing each not less than the amount equal to 1.5 Crores.

18. OEM who supplies the product must indicate experience of having successfully completed similar works (similar work means, supply, installation and commissioning of IP based CCTV project) during last 7 years ending last day of month previous to the one in which applications are invited to be one of the following.

- Three (03) similar (CCTV project) completed works costing each not less than the amount equal to 10 Crore.

OR

- Two (02) similar (CCTV project) completed works costing each not less than the amount equal to 15 Crores.

OR

- One (01) similar (CCTV project) completed work costing each not less than the amount equal to 30 Crores.

19. In the above, preference will be for integrators/ TSPs who have undertaken the work for Government of India/ State Governments.

20. Evidence has to be submitted in the form of Purchase Order / Supply contract, along with installation & commissioning report from client.

21. The bidders may also bid as Joint Venture either with OEM or OEM approved System Integrator (SI) who satisfies the experience criteria as mentioned above. In such cases, the TSP will be the Primary bidder.

22. TSP should have an office in Kerala with GST Number.

23. TSP should have been in business for the last 10 years.

24.TSP should have a minimum annual turnover of 25 (Twenty Five) Crores for the last 3 years (necessary turnover details to be produced).

25.TSP should be ISO certified Organization (ISO certificate to be produced).

26. Any other documents mentioned in the Tender document.

Tender No. & Date	KPET/01/2022/PHQ Dated 06.01.2022
Description of Work	DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATIONALIZING AND MAINTAINENCE OF IP BASED CCTV SURVEILLANCE SECURITY CAMERAS AT 520 NOS. OF POLICE STATIONS IN KERALA BY PROVIDING CENTRALIZED MONITORING AT ALL THE DISTRICT POLICE CONTROL ROOMS IN THE STATE as per the specification enclosed.
No. of Locations	520 Police Stations and 7 District Control Rooms
Estimated Amount	Rs. 41.60 Crores
Tender Fees	(through online mode only) Rs. 28,750 /- [Rupees Twenty eight thousand seven hundred and fifty Only] (GST extra) 18% GST amount on tender fees mentioned above shall be paid to GST Department directly by the bidder.
Earnest Money Deposit	Rs. 41,60,000/- (Rupees Forty one lakh and sixty thousand Only) (through online mode/ Bank Guarantee)

Specifications	Attached in the Tender document.
Date and Time of Publication of e Tender	07.01.2022, 06:00 PM
Pre-bid meeting date, time and place	14 .01.2022, 11.00 AM State Police Headquarters, Vazhuthacaud Thiruvananthapuram –695010
Date and time of submission of e-Tender	18.01.2022, 12.00 NOON
Last date and time for online Submission of e Tender	01.02.2022, 12.00 NOON
Date and time of opening of e-Tender	04.02.2022, 03.00 PM
Place of opening	Police Headquarters, Vazhuthacaud, Thiruvananthapuram- 695010
Date of Technical Evaluation	Will be intimated later
Warranty	Five years comprehensive OEM warranty. Charges inclusive of comprehensive OEM warranty/ 3 years OEM warranty and two years extended warranty should be quoted in the financial Bid. Separate BOQ is attached for 2 years extended warranty.

Address of Tender Inviting Authority	State Police Chief, Kerala, Vazhuthacaud, Thiruvananthapuram - 695010 Ph: 0471-2722566 Mobile No. 9497996998 Fax: 0471-2722566 e-mail: aig2phq.pol@kerala@gov.in Website: www.keralapolice.gov.in
Bid Validity	(Total Number of Days up to which the rates are to be firm) 365 days

PERFORMANCE GAURANTEE

A Security Deposit as per the Store Purchase Rules of the value of the work order and valid till the expiry of the warranty period has to be furnished. The Performance Security should be drawn in favour of the State Police Chief, Kerala. The Contract Performance Security shall be valid for a period of Five (5) years from the date of signing the Contract by the successful Vendor.

1. **Mode of submission of bids:** - Online. All Bid documents shall be submitted only in online procedure through the e-GP website www.etenders.kerala.gov.in their designated online covers. Details of covers are given separately. No other mode of submission shall be accepted and such tenders will be rejected outright.
2. **Cover details:** - No. of covers - 2. i) Technical Bid ii) Financial Bid. In the case of Foreign equipments, the rate must be quoted in Indian Rupees. The documents to be uploaded under each online covers are specified in the website.
3. **Downloading of e-Tender documents:** - The tender document can be downloaded from the e-GP website www.etenders.kerala.gov.in from the date and time of publication of etender onwards to last date and time for online submission of e-tender. Downloading of tender documents will not be possible after the date specified above.

4. **Submission of e-Tender documents:** - The digitally signed tender document and other specified documents shall be submitted online through the e-GP website www.etenders.kerala.gov.in well in advance before the last date and time mentioned above. No submission shall be allowed after the last date mentioned above.

5. **Payment of Tender Fees:** - A non-refundable tender fee shall be paid in online mode through the e-GP website www.etenders.kerala.gov.in at the time of bid submission. No other mode of payment shall be accepted. The tenders of bidders who do not remit fees through online will be rejected outright

6. **Payment of Earnest Money Deposit (EMD):** - The EMD shall be paid in online mode or Bank guarantee through the e-GP website www.etenders.kerala.gov.in at the time of bid submission.

7. **Exemption from payment of EMD:** - Bidders who are registered with Store Purchase Department, Kerala or National Small Scale Industries Corporation Ltd., New Delhi (for the items tendered) are exempted from submission of EMD. Those bidders claiming exemption shall submit valid registration certificate from the SPD, Kerala or NSSIC, New Delhi. Tenders of bidders who do not remit EMD online or do not upload documental proof (digitally signed) for exemption of EMD will be rejected outright.

8. **Withdrawal and re-submission of e-Tender:** - The Bidders are at liberty to withdraw the submitted tender/documents and to submit fresh tender/documents till the last date and time of submission of the e-Tender after which withdrawal/re-submission will not be allowed.

9. **Opening of e-Tenders:** - The bids shall be opened online through the e-GP website www.etenders.kerala.gov.in at Police Headquarters (Office) on the date and time mentioned above in the presence of the Bidders/authorized representatives who wish to attend at the above address. If the tender opening date happens to be a holiday or non-working day due to any valid reason, the tender opening process will be done on the next working day at the same time and

place specified. Any change in the opening date/time/venue due to other reasons shall be informed by way of Corrigendum published in the e-GP website. The Technical Bids will be evaluated by a Technical Evaluation Committee and those that do not conform to the specifications or to the satisfaction of the Committee will be rejected. The financial bids of the technically qualified Tenderers only will be considered for opening. The date of opening of financial Bids will be intimated to the concerned technically qualified Tenderers, over Phone/e Mail. This will be within 7 to 10 days of evaluation of technical bid.

10. **Technical Evaluation:** - The Bidders needs to show a live demonstration (PoC) of the same to the utmost satisfaction of the Technical Evaluation Committee, at the Local site or any other venue which will be intimated in due course. Any clarification/doubts regarding the specification or related matters pertaining to the items tendered may be freely got cleared through Additional Assistant Inspector General of Police on all Government working days from 10:30 am to 5:00 pm Ph. No. 9497996998.

11. Bidder should provide unpriced BOQ with make & model for technical verification in TQ bid. The bidder should quote in commercial bid for all the items as per the technical specifications furnished in Technical bid, otherwise the bid will be rejected.

12. All Bidders who participate in e-tender should produce hard copies of all relevant documents related to e tender at the time of technical evaluation, without fail.

Note to Bidders:

i. Bidders have to procure legally valid Digital Certificate (Class III) as per Information Technology Act, 2000 for digitally signing their electronic bids. Bidders can procure the same from any of the license certifying authority of India. For more details, please visit the e-GP website www.etenders.kerala.gov.in

ii. Bidders are advised to note the Tender ID and Tender No. & Date for future reference.

iii. All uploaded documents should contain the signature and the office seal of the bidder/ authorized persons and should be digitally signed while uploading. Documents uploaded without digitally signing shall entitle rejection of the tender.

iv. In the case of foreign equipments, the rate should be quoted in Indian Rupees. Letter of Credit- Ordinarily, no advance payment will be made for procuring the above item. In case advance payment has to be made, a clear case has to be made out by the Tenderer. However, this will be only on extraordinary circumstances, and subject to approval from Government.

v. For obtaining Digital Signature Certificate and help on e-tendering process, contact Kerala State IT Mission, e-Government Procurement PMU & Helpdesk, Basement floor of Pension Treasury Building, Uppalam Road, Statue, Thiruvananthapuram; Ph: 0471- 2577088, 2577188; Toll free no: 18002337315; email:etendershelp@kerala.gov.in; Website: www.etenders.kerala.gov.in on all govt working days from 9:30 am to 5:30 pm.

vi. State Police Chief is empowered to reject any tender without assigning any reason.

vii. Bidders using Internet Banking shall make online payment 72 hours in advance.

SCOPE OF WORK:

1. It is mandatory for the vendor to deploy qualified professional to install, commission & maintain the equipments, as defined under scope of work.
2. The successful bidder shall install CCTV systems as per the specifications prescribed in the tender document and should install the cameras in the Specified locations at the respective Police Stations (**12** Nos. of Cameras in each Police Stations). In addition, 50 cameras shall be installed in specific locations in

police stations as specified by Police Headquarters to meet any shortfall in a particular police station.

3. Thus, as per the observations made by the Hon'ble Supreme Court it is mandatory to install CCTV Cameras in Police Stations for covering the areas such as

- Entrance-1No
- Exit-1No.
- Main Gate-1No.
- All Lockups-2 Nos.
- Corridor/Lobby-1 No.
- Reception Area-1 No.
- Outside wash Room-1No.
- Duty Officer Room-1No.
- Inspector's Room -1No.
- Sub- Inspector's Room-1No.
- Back side of the Police Station-1No

4. The above locations are indicative and may change from site to site, based on its structure.

5. The bidder has to finalize the location of the cameras in consultation with the SHO of each police station before installation. The locations finalized shall be certified by the SHO and the certificate obtained from SHOs shall be forwarded by DPCs to PHQ for records.

6. All the Cameras have to be cabled by UTP CAT-6 Cable and connected to PoE Switch using structured cabling for the LAN. The NVR should have a minimum of 18 months recording storage facility.

7. The CCTV Surveillance Systems installed in 274 Police stations during the year 2018, has two Cameras (ONVIF) and monitoring system at the respective District Control Rooms. These Cameras needs to be integrated with this proposed new CCTV Surveillance systems by the bidder.

8. The Camera Video feeds have to be transmitted to the respective District Headquarters for remote monitoring 24x7.
9. All the Cameras/ NVR have to be configured in the Work Stations at the District Headquarters, with necessary VMS Software for remotely accessing and remote monitoring.
10. The Police Department will provide sufficient bandwidth by providing Fibre Internet connectivity (FTTH) at each Police Station. Kerala Police will provide FTTH connection with sufficient Bandwidth for District Headquarters also.
11. Nos. of District Headquarters in the State have already been equipped with Desktop Computer (i7) and Monitor (43 inch) for remote monitoring. In the remaining 7 Nos. of Police District Headquarters, the bidder has to provide Desktop Computer and 43 inch LED TV as per the Specifications. VMS has to be provided at all the District Control Rooms (20).
12. It is to be noted that any reference to the Camera made in this document should be construed as the Camera with built-in video, voice, audio and microphone features in synchronized video and audio streams as defined in the respective technical specifications of the equipments.
13. Each site installation is standalone by itself as part of the scope. However, it will be connected to the backbone to access from central command center or any viewing centers.
14. The responsibility of providing connectivity is not that of the vendor. However, in case of any connectivity issues, the vendor should jointly work with the network service provider for resolution. The vendor should also provide technical support to the network service provider for the connectivity. It is the vendor's responsibility to ensure that the CCTV system is performing to satisfaction within each site.
15. The vendor is responsible for all the work that is required to be done at the camera locations connecting to the Local Control Room (Police Station) that includes installation & commissioning of CCTV system; works such as civil, electrical, and mechanical at no additional costs to the user.
16. The successful vendor must supply all the items strictly in accordance with the specifications as mentioned in this document.

17. The vendor shall act as a single point of contact to organize and manage the entire scope and phases as per the Project requirement.
18. The CCTV system installation includes the installation of cameras for indoor at specified locations inside the site and one or more cameras for outside at the main gate and other areas of the site. The camera locations are mentioned in this document, however, the locations at the time of installation may change based on the site requirement at the discretion of user.
19. The Cameras at each of the locations within the site would be connected through Power-over-Ethernet (PoE) Switch and converge at Local control room (Police Station) within the site. The power requirement at the Police Station would be provided by the user. However, it is the responsibility of the vendor to plan the necessary equipment; accessories & fixtures; items; power connectivity from raw source provided by the user etc., at standard specifications, which is required to complete the system installation at No cost to the user.
20. As mentioned above, it is the responsibility of the vendor to ensure that all the locations should be equipped with a Camera including built-in voice/audio microphone features that captures the activities through video and audio streams are recorded with high quality both in synchronization mode.
21. The camera installation at the locations in each of the site should be carefully designed and crafted out to be able to record, retrieve and replay the conversations and video of highest quality. The vendor should work with the user to identify and design the exact locations where the video & audio quality is not compromised and the design should be communicated in advance.
22. The technical specifications mentioned in this document are the minimum suggestive specifications. The vendor not meeting these minimum suggestive technical specifications are liable to be rejected.
23. The equipment should tolerate the local power supply spikes and fluctuations in all weather conditions and the environment where the equipment is installed. The vendor should take extra precautions to withstand their equipment to the conditions of the location.
24. It is the responsibility of the vendor to provide adequate and proper power

points with earthing at all the locations to complete the deployment of the CCTV System. The power source will be provided by the user and the recurring expenses for power will be paid by the user. Accordingly, it is the responsibility of the vendor to ensure the electrical connectivity to the CCTV cameras as per the site requirements at each of the site.

25. All the equipments should be latest and of the prevailing/current standard production of the manufacturer at the time of the proposal.
26. The successful bidder is required to supply the latest version of licensed software in the name of the user, providing all the features enumerated in this specification, at the time of award of contract. Equipment must be compatible with other Network vendor equipment also. The software stack provided by the vendor must be ONVIF Complaint and able to be integrated seamlessly with other 3rd party solutions.
27. The scope of work includes all necessary software that is needed to the system for its completeness and functional working at each location.
28. Vendor should survey and evaluate the site conditions if necessary and is responsible to design the surveillance system including all necessary cabling, wiring and other related accessories including power supply to the equipment.
29. The user's responsibility is to provide bandwidth connectivity where required and the camera connectivity through PoE and the system configuration for optimal performance is in the scope of the vendor.
30. **All the items including spare parts; service; labour; on-site carry comprehensive warranty for the contract period from the date of successful User Acceptance Test is the responsibility of the vendor.**
31. Vendor shall meet the SLAs during the support & maintenance period as mentioned in this document. The calculation for penalties for not meeting the SLA requirement during warranty period is defined in this document.
32. The vendor should provide the necessary documentation including the Design and Technical Configurations of the System.
33. Successful vendor should provide training to the team identified by the user for operation of the CCTV System and handhold on job.
34. The vendor is responsible to perform highest quality of workmanship, including

ensuring aesthetics while commissioning the CCTV System under UTP Cat6 cabling. The vendor should ensure that the cables and equipment are commissioned with proper routing of cables keeping the aesthetics of the site environment intact.

35. The successful bidder shall provide a centralized complaint registration facility over phone and email (24x7).
36. The total cost of the project has to be included in the financial bid.
37. All products supplied under this tender should not be end of life and service support should be available for minimum of 5 years.

Technical PoC Setup

1. The bidder will be asked to undertake demonstration /proof of concept of the quoted Cameras, VMS and other equipments during evaluation of the Technical bid, at NO COST NO COMMITMENT Basis.
2. The bidder should arrange components as quoted in the proposal to be available for the PoC setup to showcase the features as per evaluation criteria.
3. The make & model should be same as per the bid proposal; otherwise the bid is liable for rejection.
4. The place & date of PoC shall be intimated to the bidders at least 3 days in advance so as to make necessary arrangements.
5. The bidder has responsibility to handover the recorded video stream of complete demo to the user at the end of POC.
6. The built-in voice/audio feature is critical and it is mandatory to capture all conversations within a range of minimum 10 meter radius from the camera location.
7. The Evaluation Committee may provide use cases to the qualified bidders at the time of PoC, in addition to the bidder's use cases.
8. The Department Technical Evaluation committee reserves the right to reject any proposal completely or partially, if the PoC does not meet the project criteria.

Project Implementation:

1. CCTV Surveillance Systems will be implemented in multi cycle phases across the State, as directed by the Government/Police Headquarters
2. The vendor shall install and implement the proposed system at such sites as mentioned by the user within such period as mandated by the user at the time of issue of Work Order/SLA.
3. In case, the material/solution supplied and installed is rejected, owing to its non-conformity to the specification or due to poor quality of workmanship, the same shall be replaced promptly.
4. Vendor shall treat all matters connected with the contract strictly confidential and shall undertake not to disclose, in any way, information, documents, technical data, experience and know how, without prior written permission from the user.

USER ACCEPTANCE TEST

The User Acceptance Test (UAT) will be conducted as follows:

After successful installation of the system in accordance with the requirements as mentioned in schedule of requirements, Final Acceptance Test will be conducted. The details of FAT will be jointly decided by the vendor & the user. The date on which Acceptance Certificate is issued shall be deemed to be the date of successful commissioning of the System.

Packing, Forwarding & Shipment

The vendor shall provide proper packing of the goods to prevent their damage or deterioration during transit to the final destination site. The vendor shall notify the date of each shipment and the expected date of arrival of goods at the site.

Total Camera Requirements and Existing Deployments

1. No. of Police Stations: 520 Nos.
2. No. of Fixed Lens Bullet Camera with two-way built-in voice / audio feature: 5770 Nos.
3. No. of Motorized Varifocal Bullet Camera with two-way built-in voice / audio feature: 520 Nos. (*At the entrance area of the Police station*)
4. Existing Camera (ONVIF) deployment at 274 Nos. of Police Stations: 548 Nos.

The BOQ for each of the 520 Nos. of Police Stations and 7 Nos. of District Police Headquarters and the Specification of CCTV Equipments are enclosed as ANNEXURE-I.

ON-SITE COMPREHENSIVE OEM WARRANTY AND MAINTENANCE SUPPORT

The warranty and maintenance Support would be on-site and comprehensive in nature and provide for seamless support from the OEM. The successful bidder shall provide warranty for defects during the tenure of the contract. In case of repair /replacement of equipment / spare parts are delayed, the supplier shall provide stand by equipment of similar configuration support for uninterrupted service.

The equipments and all accessories supplied and installed should be covered by on-site comprehensive warranty and seamless support from the OEM for a period of five years. The L1 will be decided on the basis of Total Project cost plus Five years Warranty cost. In case where comprehensive OEM warranty is not available for 5 years, the cost of 3 year standard warranty with 2 years extended warranty may be furnished.

SERVICE LEVEL AND PENALTY:

1. Defective hardware components shall be repaired / replaced by the vendor at own cost. If the defect is not resolved within the stipulated time frame, penalty will be attracted unless stand by device is provided.
2. If the defect is not rectified and the stand by equipment is not replaced within 7 working days, a penalty will be attracted.
3. The Vendor shall submit the Service Level Agreement in the prescribed format in Kerala Stamp Paper in one week from the date of the work order.
4. The conditions on warranty shall be strictly included in the Service Level Agreement.
5. The Vendor should meet the following SLAs during the warranty period, however a separate SLA agreement will be executed with a successful Vendor when the project is awarded and accepted.
6. The SLA is designed for rapid response to mission critical service, hardware and software application emergency. The time between the initial request for service and the time a technical person respond to the request should not exceed 1 hour. The Resolution for permanent solution to an emergency should be within 4 hours.
7. The calls shall be divided into the following three categories:
- 8.

SL No.	CALL PRIORITY	DESCRIPTION
01	High priority calls	The system / all the connected systems are totally affected and are down. All the services rendered from this system/ connected systems are not available

02	Medium priority calls	The sub system/ system are affected and the services rendered from the system are partially affected/ performance of the system is deteriorated.
03	Low priority calls	The system or subcomponent of the system is affected and the system is running in backup mode and the services are running.

The SLA during warranty shall be as follows.

SL No.	CALL PRIORITY	RESOLUTION	PENALTY
1	High Priority Calls	<= 6 hrs	0
2		> 6 hrs and < = 12 hrs	Rs. 500 per hour starting from time of notification
3		> 12 hrs and < = 24 hrs	Rs. 1000 per hour starting from time of notification.
4		> 24 hrs and < = 48 hrs	Rs. 1500 per hour starting from time of notification.
5		> 48 hrs	User reserves the right to get it done and recover the cost + penalty of Rs. 1,00,000 from the Vendor.
6	Low/ Medium Priority Calls	<= 6 hrs	0
7		> 6 hrs and < = 24hrs R	Rs. 500 per hour starting from time of notification
8		> 24 hrs and < = 48 hrs	Rs. 1000 per hour starting from time of notification

9		> 48 hrs	User reserves the right to get it done and recover the cost + penalty of Rs. 25,000 from the Vendor
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- i) The vendor shall provide all the software/firmware updates to the supplied equipment during the warranty period.
- ii) The vendor is responsible to update the equipment with the latest firmware periodically unless there is a written directive from the User from doing so. Any deviation will attract penalty.
- iii) The user is not responsible for any costs incurred by the vendor for meeting the obligations of the warranty.
- iv) The vendor is responsible for the warranty of any third party products included as buyouts or sub systems in the supplied equipment.
- v) The vendor shall do a preventive maintenance of the supplied equipment once in four months unless there is a written directive from the User.
- vi) The vendor shall deploy tools which can automatically raise the complaint with the vendor if any defect/ malfunction are detected. An alert should also be provided through SMS/email etc. to the designated persons.
- vii) In case of the vendorCompany being taken over or sold out to any other entity, the obligations of the warranty shall be transferred to the taking over entity and this obligation shall be part of the agreement between them. The same shall be informed to the user before the transfer of ownership through written communication.
- viii) The vendor shall submit an undertaking from the O.E.M stating that the O.E.M shall take the responsibility of supplying the spares throughout the warranty period in case of non-supply of material by the vendor.
- ix) The vendor is responsible for the back linking of the warranty of the equipment with the OEM and the vendor shall furnish the necessary proof for that for release of payment.

PAYMENTS:

Payments will be governed by the Store Purchase Rules and other Government Orders existing at the time of the contract/ payment.

NOTE: - BIDDERS ARE ADVISED TO GO THROUGH THE CONDITIONS IN THE NOTICE INVITING TENDER AND THE TENDER DOCUMENT CAREFULLY AND COMPLY WITH THEM TO AVOID OUTRIGHT REJECTION OF THEIR TENDER.

For any litigation relating to this order, the jurisdiction will be Thiruvananthapuram City.

Sd/-

Inspector General of Police, Traffic & RSM
For Director General of Police &
State Police Chief, Kerala

ANNEXURE I

BOO FOR SUPPLY & INSTALLATION OF IP SURVEILLANCE CCTV SYSTEM IN POLICE STATIONS 12 Nos. 4MP IP IR Bullet Cameras with 64-Ch NVR with RAID Facility (18 Months Storage) For each Police Station (520 Police Stations)

SL No.	Parameters	Details	Qty.
1	4MP IP Bullet Camera with WDR.	Details are separately enclosed 12 Cameras per each PS	11+1
2	64-Ch NVR with 16 SATA Port (Back up for 18 months)	Details are separately enclosed	1
3	8 TB HDD	Details are separately enclosed 16 HDD PER NVR	16
4	24 Port PoE Switch	24 port Giga byte PoE Switch with 190W	1
5	43 " LED TV	Details are separately enclosed	1
6	2 KVA UPS with minimum 8 hours battery back-up	2 KVA UPS with Two Nos. of 150 AH batteries(or better) <i>For at least 8 hrs Battery back-up</i>	1
7	15 U Rack	15 U Rack with fan for mounting NVR & PoE Switch and all Accessories	1
8	Cabling	Cabling by CAT-6 UTP cable in ISI marked PVC conduit	Average 400 Meters/PS
9	Miscellaneous	Installation charges with all accessories for completing the project	Lump sum

BOQ for One District Head Quarters (For 7 Nos. of Police Districts)

SL. No	Description	Qty
1	i7 Computer. Details are separately enclosed	1
2	43" LED TV. Details are separately enclosed	1
3	Central Monitoring Software (CMS)/ VMS (Video Management Software)	1
4	2 KVA UPS with 2 Nos. of 150 AH batteries (or better) For at least 8 hrs back-up.	1

RESERVE CAMERAS- 50 Numbers to be deployed as per need

SPECIFICATION FOR CCTV EQUIPMENTS

1) 4 MP IP BULLET CAMERAS WITH IR

SL No	PARAMETER	SPECIFICATION	Remarks
	Item Name		
		4MP Bullet Professional/ Project series camera with OEM Warranty for 5 years	
1	Lens Type	Fixed 3.6mm	
2	Image Sensor :	1/3" Progressive Scan CMOS or better	
3	Min. Illumination -	Color: 0.2Lux@F2.0 and 50 IRE, B/W: 0Lux with IR ON or better	
4	WDR	120dB	
5	IR Distance	Min Up to 50m or better	
6	S/N Ratio	>=50Db	
7	Noise Reduction	3D DNR	
8	Resolution	Minimum Up to 2688x1520	
9	Video Compression	H.265+ H265&H 264MJPEG	
10	ONVIF Profile	ONVIF profile S and Profile G compliant	
11	Minimum No of Streams	3	
12	Main Stream Resolution	Main Stream: 2688 x 1520 / 2304 x 1296 / 1920 x 1080 / 1280 x 960 / 1280 x 720@ (1 ~ 25/30 fps)	
13	Sub Stream Resolution	Sub Stream: 704 x 576 / 640 x 480 / 352 x 288@ (1 ~ 25 fps) ; 704 x 480 / 640 x 480 / 352 x 240@ (1 ~ 30 fps)	

14	Third Stream	Third Stream: 1280 x 720 / 704 x 576 / 640 x 480@ (1 ~ 25 fps) 1280 x 720 / 704 x 480 / 640 x 480@ (1 ~30 fps)	
15	Audio Interface	Line In/ Out (In- built Microphone)	
16	Ethernet Port	10 Base-T / 100 Base-TX Ethernet (RJ-45)	
17	Supported Network Protocols	HTTP; HTTPS; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS	
18	Storage	Micro SD Card Support 128 GB or more	
19	Lightning and surge protection(Inbuilt or External)	4000V Lightning-proof, 2000V Surge-proof	
20	Power consumption	10W MAX with IR ON	
21	Ingress Protection	IP67 rated for Weather resistant performance.	
22	Impact Resistance	IK10 rated vandal proof	
23	Event	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access	
24	Security	Must support image overlay watermarking	
25	Certification	CE, UL, FCC, BIS	
26	Warranty	Minimum 5 Years Warranty	

2) 4MP Bullet Motorized Varifocal Camera (At the entrance of Police Station)

SL No	PARAMETER	SPECIFICATION	Remarks
	Item Name	4MP Bullet Professional/ Project series Motorized Varifocal Camera with OEM Warranty for 5 years	
1	Lens Type	2.7mm ~13.5mm, Motorized F1.5	
2	Image Sensor :	1/3" Progressive Scan CMOS or better	
3	Min. Illumination -	Color: 0.2Lux@F2.0 and 50 IRE, B/W: 0Lux with IR ON or better	
4	WDR	120dB	
5	IR Distance	Up to 60m or better	

6	S/N Ratio	>=50Db	
7	Noise Reduction	3D DNR	
8	Resolution	Minimum Up to 2688x1520	
9	Video Compression	H.265+ H265&H 264MJPEG	
10	ONVIF Profile	ONVIF profile S and Profile G compliant	
11	Minimum No of Streams	3	
12	Main Stream Resolution	Main Stream: 2688 x 1520 / 2304 x 1296 / 1920 x 1080 / 1280 x 960 / 1280 x 720@ (1 ~ 25/30 fps)	
13	Sub Stream Resolution	Sub Stream: 704 x 576 / 640 x 480 / 352 x 288@ (1 ~ 25 fps) ; 704 x 480 / 640 x 480 / 352 x 240@ (1 ~ 30 fps)	
14	Third Stream	Third Stream: 1280 x 720 / 704 x 576 / 640 x 480@ (1 ~ 25 fps) 1280 x 720 / 704 x 480 / 640 x 480@ (1 ~ 30 fps)	
15	Audio Interface	Line In/ Out (In- built Microphone)	
16	Ethernet Port	10 Base-T / 100 Base-TX Ethernet (RJ-45)	
17	Supported Network Protocols	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS	
18	Storage	Micro SD Card Support 128 GB or more	
19	Lightning and surge protection(Inbuilt or External)	4000V Lightning-proof, 2000V Surge-proof	
20	Power consumption	10W MAX with IR ON	
21	Ingress Protection	IP67 rated for Weather resistant performance.	
22	Impact Resistance	IK10 rated vandal proof	
23	Event	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access	
24	Security	Must support image overlay watermarking	
25	Certification	CE, UL, FCC, BIS	
26	Warranty	5 Years Warranty	

3) NVR (NETWORK VIDEO RECORDER)

SL No	PARAMETER	SPECIFICATION	REMARKS
	Item Name	64 Channel Enterprise Class Network Video Recorder (NVR)	
1	No of Channels (Min)	64	
2	Network Interface	2 Nos. of RJ45 100/1000 ports	
3	Input Bandwidth	Min 320Mbps	
4	Network Protocols	IPv4/ IPv6, TCP	
5	Interface	2x HDMI Ports; (1 HDMI up to 3840 × 2160); (HDMI supports Audio Output)	
		4 USB Ports	
		1 VGA Port	
6	Recording Resolution	12MP/8MP/6MP/5MP/4MP/3MP/1080P/ UXGA/720P/D1/VGA/CIF/QCIF	
7	Recording Type	Continuous, Motion Detection, Alarm, Smart Event, Event (Motion Detection, Alarm, Smart Event)	
8	Synchronous Playback	16 CH synchronous playback	
9	Supported Video Compression	H.265+/H.265 or better	
10	Supported Audio Format	G.711/ AAC/ G.722/ G.726	
11	Storage Support	Should have min 16 SATA HDD Ports and each support 8TB or above and should be hot swappable and should support RAID 0/1/5/6	
12	External HDD	1 e SATA Port	
13	Ethernet	1 x RJ-45 port (10/100/1000 Mbps)	
	Security	Must support digital watermarking (digital hashing) for export	
14	Compatibility	ONVIF 2.4	
15	Power Supply	AC 120V to 240V	
16	Certification	CE, FCC, UL, CUL, ROHS	
17	Warranty	5 Years Warranty	

4) MONITOR/TV

		Professional/ Commercial LCD Display	
1	Device Type :	43 inch, LED-backlit LCD monitor	
2	Aspect ratio :	16:9	
3	Resolution :	Full HD	
4	Brightness :	Min 350 nit	
5	Operating Hours	24x7	
6	Input connections :	Min 2xHDMI ports	

MONITOR MOUNTS

- 1) It shall be capable for mounting all type of LCD monitor with dimensions of 43" using suitable adaptor/additional base plate, if required any.
- 2) It shall have the facility to allow rotate/ tilt/ raise/ monitor as well as fix their adjustment.

5) COMPUTER WORK STATION

Video Management Software shall be provided in all District Police Headquarters for monitoring purpose. VMS shall be installed and configured on a Work station having following Specification.

- 1) 11th Generation Intel Core i7-11700T (8 Cores, 16 MB Cache, 1.4 GHz, 35 W)
- 2) Operating System: Windows 11 Professional, English
- 3) Memory: 16GB, 1x16GB, DDR4 non ECC Memory
- 4) M.2 1TB PCIe NVMe Class 40 Opal 2.0 Self Encrypting SSD
- 5) Security – Effective Anti-Virus software shall be provided.
- 6) Warranty: 5 Years comprehensive On-site Warranty including Monitor
- 7) Ports: 1. Power Button | 2. Universal Audio Jack | 3. Line-In/Out | 4. USB 3.2 Gen2 Type-C® Port | 5. USB 3.2 Gen1 Type-A Port | 6. Knock-out Slots for Wireless Antenna | 7. Optional Port: VGA/DP1.4/HDMI 2.0b/USB Type-C® Port | 8. USB 3.2 Gen1 Type-A Ports (4) | 9. Thumbscrew | 10. Padlock Loop | 11. RJ-45 | 12. K-lock Slot | 13. Display Port (2) | 14. Power Connection
- 8) Chipset: compatible Chipset
- 9) Motherboard: OEM Motherboard
- 10) Keyboard: USB interface. Keyboard. Same make as PC.
- 11) Mouse: Optical with USB interface. Same make as PC.
- 12) Networking facility: 10/100/1000 on board integrated Network Port, & Wi-Fi 802.11 b/g/n connectivity Certifications

6) **Surveillance Hard Disk**

To store camera visuals of 12 Nos. of cameras for 550 days (18 Months) in full resolution (4MP) @ 20fps requires around 100 TB after compression using H.265+/ H.265. So 16 Nos. of 8TB HDD are considered for each PS and it shall be configured in RAID 5 mode for redundancy.

SURVEILLANCE HDD			
PARAMETERS & SPECIFICATION			REMARKS
Drive	Form Factor	3.5 inch	
	Capacity	8TB	
	Recording Technology	CMR	
	Cache (MB)	256	
Reliability	MTBF(Hours)	2M	
	Warranty (Years)	5 yrs	
Performance	Interface	SATA 6Gb/s	
	RPM	7200	
	Max. Sustained Transfer Rate (MB/s)	255	
Power	Idle (W)	7.4	
	Operating (W)	8.8	

7) 24 Port PoE Switch

24 port PoE Switch			
S.No.	Technical Specifications		
	24-port 1000base-T Gigabit PoE Smart Switch		Compliance
1	Physical Specifications	24 # 10/100/1000 Base-T auto-sensing PoE+ ports,2 dedicated 100/1000 Base-X Fiber SFP ports	
2	Performance Specification	Bandwidth: 52 Gbps non-blocking	
		Heat Dissipation (at full PoE load): 780.20 Btu/H	
		Forwarding modes: Store-and-forward	
		8 Priority queues,Priority queuing: Weighted Round Robin (WRR)	
		MAC Address database size: 8,000 media access control (MAC) addresses	
		VLAN: 64,128 Multicast groups	
		256 DHCP snooping bindings,Packet buffer: 0.5 MB	
		Power Consumption: 228.53W Max,PoE budget: 190W	
3	IEEE Network Protocols	IEEE 802.3 Ethernet	

		IEEE 802.3u 100BASE-T, IEEE 802.3ab 1000BASE-T	
		IEEE 802.1Q VLAN Tagging, IEEE 802.3x full-duplex flow control	
		IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX, IEEE 802.3ad Trunking (LACP)	
		IEEE 802.1ab LLDP with ANSI/TIA-1057 (LLDP-MED)	
		IEEE 802.1p Class of Service	
		IEEE 802.3 af (PoE), IEEE 802.3 at (PoE+)	
4	Network Security and Traffic	IEEE 802.1x	
		Guest VLAN	
		RADIUS based VLAN assignment via .1x, MAC-based .1x	
		Network Storm Protection	
		Broadcast, Unicast, Multicast Protection	
		Access Control Lists (ACLs) L2 / L3 / L4	
		IP-based ACLs (IPv4), MAC-based ACL, TCP/UDP-based ACL	
		MAC lockdown, MAC lockdown by the number of MACs	
		IEEE 802.1x Radius Port Access Authentication	
5	L2 Services	IEEE 802.1Q VLAN Tagging	
		Voice VLAN	
		IEEE 802.3ad - LAGs - LACP (8 LAGS with max. of 8 members in each LAG)	
		Broadcast Storm Control	
		IGMP Snooping (v1, v2 and v3)	
		MLD Snooping Support (v1 and v2)	
		IGMP Snooping queriers	
		DHCP Client, DHCP Snooping	
6	Network Monitoring and Discovery Services	802.1ab LLDP	
		SNMP V1, V2, V3	
		RMON 1,2,3,9	
7	Quality of Service(QoS)	Access Lists	
		Egress rate limiting	
		Diff ServQoS	
		IEEE 802.1p COS	
		Destination MAC and IP	

		IPv4 DSCP,IPv4 TOS	
		WRR (Weighted Round Robin)	
		Strict Priority queue technology	
		Auto-VoIP Vlan,Auto Voice Vlan,Port Mirroring	
8	Management	Password management	
		Configurable Management VLAN	
		Admin access control via Radius and TACACS+	
		Web-based graphical user interface (GUI)	
		Smart Control Centre (SCC) for multi Switch management	
		Dual Software (firmware) image, Dual Configuration file	
		SNTP client over UDP port 123	
		SNMP v1/v2,SNMP v3 with multiple IP addresses	
		RMON 1,2,3,9,HTTP Download (firmware)	
		Syslog (RFC 3164)	
9	LEDs	Per port: Speed, Link, Activity	
		Per device: Power, Fan and PoE Power Status	
10	Environmental Conditions	Operating Temperature: 32° to 122°F (0° to 50°C)	
		Operating Humidity: 95% maximum relative humidity, non-condensing	
		Storage Temperature: – 4° to 158°F (–20° to 70°C)	
		Storage Humidity: 95% maximum relative humidity, non-condensing	
11	Certifications	CE mark, commercial,FCC Part 15 Class A	
		RCM: AS/NZS CISPR 32:2013 Class A	
		ISED: ICES-003:2016 Issue 6 , Class A, ANSI C63.4:2014	
		EN 55024,CCC,UL listed (UL 1950)/cUL IEC 950/EN 60950	
12	Warranty and Support	5 Year hardware replacement warranty	

8) CAT 6 LSZH U/UTP Cable (Indoor)			
Sl. No.	Parameters	Cat-6 Horizontal Cable	Compliance
1	Type	Unshielded / Unshielded Twisted Pair (U/UTP), Category 6 Cable - White color.	
2	Standards	The Cable should meet ANSI/TIA 568C.2 Category 6 Specifications	
3	Conductors	The cable should consist of Eight 23 AWG bare copper conductors. Copper Clad Aluminum or any other combinations are not allowed	

4	Cable weight	The weight of the cable box of 1000 Feet should not be less than 25 lb/kft	
5	Frequency	Maximum Operating Frequency will be 300 MHz	
6	Jacket thickness	The nominal Jacket thickness should be 0.020 inches	
7	Outside diameter	The nominal Outside diameter should be 0.233 inches	
8	Operating Voltage	Maximum Operating Voltage will be 80V	
9	Pair Separator	Pair Separator shall be Bisector tape reduce the cross talk and improve performance	
10	Pulling Tension	maximum Pulling Tension will be 11 KG	
11	Temperature	The cable should support the installation temperature: 0 to 60 0 C	
12	Third party certificate (Genuine)	ETL four connector channel certificate for long distance and short distance test report.	
13	Jacket type	The LSZH Cable should support the following standard to qualify	
		(a) ISO/IEC 60332-3-22 Vertical Flame spread test	
		(b) ISO/IEC 60754-2Acidity	
		(c) ISO/IEC 61034-2 Smoke Density	
		(d) 3rd Party verification of Fire safety/environmental tests listed above must be provided as part of the bid response.	
14	Additional info	The cable and cordage shall be UTP components that do not include internal or external shields, screened components or drain wires that require additional grounding and bonding	
15	Online Verification	The cable test parameters shall include NEXT, PSNEXT, Return Loss, Attenuation, ELFEXT and PSELFEXT. The on-line reference must be available on the SCS vendor public website, such that it can be accessed at any time.	
16	RoHS	RoHS Compliant	

9) Cat-6 U/UTP Outdoor Cable-Double sheath, Anti-Rodent			
SI No.	PARAMETERS	SPECIFICATION	REMARKS
1	Type	Unshielded Twisted Pair, Jell free, Category 6, TIA / EIA 568-C.2 & ISO/IEC 11801	
2	Environment	Double jacketed cable for indoor & outdoor application and crush resistance	
3	Conductors	23 AWG solid bare copper	
4	Protection	Anti-Rodent	
5	Insulation	Polyolefin	
6	Outer sheath	Fire Retardant LSZH for Indoor purpose	
7	Inner sheath	Polyethylene, UV Resistant for outdoor purpose	
8	Pair Separator	Cross-member (+) fluted Spline.	
9	Temperature range	-20 Deg. C to +70 Deg. C	
10	Frequency tested up to	Minimum 250 MHz	

11	Packing	Box of 305 meters	
12	Cable Outer Diameter	7.2 mm nominal	
13	Delay Skew	45ns MAX.	
14	Bend Radius	28mm Minimum	
15	Color	Black	
16	Conductivity	Cable shall not have any metal/Armour layer to protect. They can carry the electrical/lighting current directly to switch, if the cable is exposed to environment	
17	Impedance	100 Ohms + / - 15 ohms, 1 to 250 MHz.	
18	Mutual Capacitance	5.6 NF MAX /100 Mtr.	
19	Conductor Resistance	66.58 Ohms Max / KM	
20	Propagation Delay	536 ns/100 Mtrs. MAX @ 250 Mhz	
21	Transmission Standards	ANSI/TIA-568.2-D, ISO/IEC 11801 Class E	
22	Remote Powering	Cable shall be fully complied with the recommendations set forth by IEEE 802.3bt (Type 4) for the safe delivery of power over LAN cable when installed according to ISO/IEC 14763-2, CENELEC EN 50174-1, CENELEC EN 50174-2 or TIA TSB-184-A	
23	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR	
24	ROHS Compliant	ROHS/ELV Compliant	

10) CAT 6 Patch Panel-24 port-Loaded

Sl. No.	PARAMETERS	SPECIFICATION	REMARKS
1	Type	Patch panel Unshielded / Unshielded Twisted Pair (U/UTP), Category 6	
2	Standards	The panel should meet ANSI/TIA 568C.2 Category 6 Specifications	
3	Panel configuration	The panel shall be available in 24-port and 48-port configurations with universal A/B labeling and 110 connector terminations on rear of panel allowing for quick and easy installation of 22 to 24 AWG cable	
4	Modular panel	The ganged adapter style patch panel will utilize increments of six RJ-45 style jacks in a common molded component.	
5	Insertion life cycle	The patch panel shall be compliant with IEC 60603-7 for Plug Insertion life test and minimum Plug Insertion life shall be 750 times	
6	Patching and Termination procedure	The ganged adapters shall have RJ45 jack in the front and Insulation Displacement Connector (IDC) at the rear of the module.	
7	Material used	Panel shall be available in straight and angled style with made of	

		Powder-coated steel	
8	Additional future for noise cancellation	Termination managers must be provided with the panel. These termination managers provide proper pair positioning, control, and strain relief features to the rear termination area of the panel.	
9	Panel size	Panel size shall be 120mm (D), 45mm (H), 485 mm (W)	
10	Flammability Rating	UL 94 V-0	
11	Third party certificate for Genuity	ETL four connector channel certificate for long distance and short distance test report.	
12	Rear cable manager	Panel shall have rear cable manger with proper design to hold all 24 cable. This shall provide strain relief for outlet and organization of cables being routed to the back of a patch panel.	
13	Channel performance	When configured in worst-case 100-meter channels with full cross-connects and consolidation points with the other products proposed in this tender, the panel shall be capable of delivering the minimum guaranteed channel performance.	
14	RoHS	RoHS Compliant	

11) CAT 6 LSZH U/UTP RJ45 Patch Cords			
Sl. No.	Parameter	Specification	Remarks
1	Type	Unshielded / Unshielded Twisted Pair (U/UTP), Category 6 patch cords -Different color shall be available.	
2	Standards	The Cordage should meet ANSI/TIA 568C.2 Category 6 Specifications	
3	Length	The cordage shall be available in different length based on the site requirement	
4	Construction	All cords shall be round, and consist of copper conductors, tightly twisted into individual pairs.	
5	Cordage diameter	Nominal cordage diameter shall not exceed 5.92 mm.	
6	Plug design	Plugs shall be designed with an anti-snag latch to facilitate easy removal during move, add and change processes.	
7	Jacket type	The cordage sheath shall be made of Low-Smoke, Zero Halogen (LSZH)	
8	Fire Safety standards:	The LSZH version must comply with the following Fire Safety standards:	
		a. ISO/IEC 60332-3-22: Vertical Flame Spread	
		b. ISO/IEC 60754-2: Acidity	
		c. ISO/IEC 61034-2: Smoke Density	
9	3rd Party verification	3rd Party verification of the Fire Safety/ Environmental tests listed above must be provided as part of the bid response.	
10	Additional info	The cable and cordage shall be UTP components that do not include internal or external shields, screened components or drain wires that require additional grounding and bonding	
11	insertion life cycle	The patch cords will have insertion life of 750 cycles minimum.	
12	RoHS	RoHS Compliant	

12) Category 6 UTP Information Outlets		
Sl. No.	Details	Standard Compliance
1	Standards	All Category 6 UTP outlets shall meet or exceed Category 6 transmission requirements for connecting hardware, as specified in TIA/EIA 568-B.C.2 Commercial Building Telecommunications Cabling Standard and ISO/IEC 11801:2002 Second Edition.
2	Compatibility	The Category 6 outlets shall be backward compatible with Category 5E, 5 and 3 cords and cables.
3	Outlet Design	The Category 6 outlets shall be of a universal design supporting T568 A & B wiring.
4	Termination procedure	The Category 6 outlets shall be able to terminate without tool for the quick termination
5	Mounting options	The Category 6 outlets shall be capable of being installed at either a 45 ⁱ or a 90 ⁱ angle in any M-series modular faceplate, frame, or surface-mounted box avoiding the need for special faceplates.
6	Noise cancellation	The Category 6 outlets shall have improved pair splitters and wider channel for enhanced conductor placement.
7	General specifications:	a. Meets or exceeds the mechanical, electrical, and clearance specifications in FCC Rules and Regulations, Part 68, Subpart F b. Meet or exceed the Category 6 requirements in ISO/IEC 11801, CENELEC EN 50173, and TIA/EIA568B c. The 8-pin modular (RJ-45) jacks shall comply with IEC 60603-7-4.
8	Third party certificate for Genuity	ETL four connector channel certificate for long distance and short distance test report.
9	PoE and PoE+ applications	The information outlet shall have a Current Rating of 1.5 A at 20°C to support the PoE and PoE+ applications
10	insertion life cycles	The information outlet will have insertion life of 750 cycles minimum.
11	Type of conductors	The information outlet must be able to accept termination of solid conductors with nominal diameter of between 0.40 mm to 0.64 mm (26 to 22 AWG).
12	Test Methodology for performance	Outlet shall be tested with MDM Methodology for higher performance
13	RoHS	RoHS Compliant

13) TECHNICAL SPECIFICATION OF SURGE PROTECTION DEVICES (SPD) & EARTHING

Parameter	Specifications	Remarks
Applicable standards	IEC 62305 part3, IEC 62561	
Earth electrode diameter	14.2 mm	

Earth electrode length	2 Mtr	
Copper bonding thickness	250 micron	
Earth enhancement Compound	OEC 2 10 mineral compound	
Resistance earth of enhancement compound	<0.2 Ohm.m	
Connector earth for electrode	Universal connector made of 304 SS suitable to connect 14.2 mm dia electrode to strip	

14) Technical Specification of Power line SPD

Class B+C/Class I+II (according to IEC 61643)

Pluggable type SPD with potential free contact, thermal disconnecter & provision for inbuilt common remote indication for defective arresters has to be connected between Line and Neutral and SPD of Spark Gap type between Neutral and Earth of following ratings should include base element & pluggable arresters.

Parameter	Specifications		Remarks
	Line to Neutral	Neutral to Earth	
Type	MOV with built in thermal fuse	Spark Gap Encapsulated / Non-exhausting	
Nominal Voltage, Un	230V, 50/60 Hz		
Maximum Continuous Operating Voltage, Uc	≥ 320 Volt	255 Volt	
Nominal Discharge Current I _n	30 KA(8/20 μ sec)	50 KA(8/20 μ sec)	
Maximum Discharge Current I _{max}	50 KA (8/20 μ sec)		

Lightning Current	Impulse	7 KA(10/350 μ sec)	25 KA(10/350 μ sec)	
Voltage Level	Protection	\leq 1300 volts	\leq 1200 Volt	
Response Time		< 25 nano seconds	< 100 nano seconds	
Operating temperature range		-40 μ C to +80 μ C		
Mounting on		Din Rail		
Degree of Protection		IP 20		
Max. Back-up fuse / MPCB		Up to 160 amps max. Depending up on panel design & breaking capacity.		

15) 15U WALL MOUNT RACK

SL No	Specification
1	Racks manufactured out of steel sheet punched, formed, welded and Powder coated
2	Rack should be from ISO 9001:2008, ISO14001:2004, ISO 27001:2013 ISMS,OHSAS18001:2007& UL Listed Certified company and have proper EHS Policy.
3	Standard for Racks configuration will be welded frame integrated with side panel and vented top cover
4	Rack should have Front Toughened Glass Door with lock & Key
5	Rack should have provision to mount racks on wall.
6	Rack should be 15U(1U=44.45 mm) in Height, 600MM Width, 600MM Depth and overall height 666.75 MM.
7	Rack should Conform to DIN 41494 or Equivalent EIA /ISO / EN Standard
8	Rack should have Adjustable mounting depth,
9	Rack 2 No Adjustable, 19" verticals with Punched 9mm Square Hole and Universal 12.7mm-15.875mm-15.875mm alternating hole pattern offers greater mounting flexibility, maximizes usable mounting space.
10	Rack should have 100% assured compatibility with all equipments conforming to DIN 41494 (General industrial standard for equipments)
11	Powder coated finish with seven Tank pretreatment process meeting IS
12	Rack should have Proper Grounding & Bonding
13	Rack should have the provision for mounting 2 Fan on Top cover ITE / Server Rack Air Circulation module/Tower Mount/180CFM

14	Rack should have 1 No Cantilever Shelf for mounting NON Rack mountable Equipments
15	Rack should have 1 No Power Distribution Units with 6 No 5/15A Indian Round Pin with PDU Rating 3.6KVA/Side feed-1.5Mt/ Black
16	Rack should have 2 No Horz. Cable Organizer/1U/ Channel On Front.
17	Rack should have provision for cable entry Exit from Both top & Bottom.
18	Rack should have 1 Packet of Mounting hardware, Pack of 20

16) 2KVA Sine Wave UPS With 150 Ah Battery 2 Qty.

- 1) Pure Sine Wave Output, Synchronized Charge over
- 2) MCB Protection, Seven Segment Display, By Pass Switch,
- 3) Capacity: 2000VA/24V, Input: Voltage (100-285V), Output: Max.Bulb Load (1600 Watt)
- 4) Tubular Battery, Factory charged battery in ready to use condition
- 5) Nominal Voltage (V): 12
- 6) Rated Capacity (Ah) : 150

17) HDMI Cable

- 1) High Speed 10.2Gbps
- 2) HDMI Cable - CL3 Rated
- 3) Supports 4K 30Hz, Ultra HD, 3D, 1080p, Ethernet and Audio Return (Latest Standard)
- 4) 50 Feet (15 Meters)**

18) VMS Software features

VMS Key Features	
Video Device and Channel	1,000 Channels
Auto-Register	1,000 Channels
ONVIF	400 Channels
Map	Support Google map and raster map.
	Display the video channel on the map.
	View live and recorded videos.
Log	System, admin, client log.
	Search and export log
Live View	Display device tree; show or hide offline device.
	Display the device IP address or device name on the device tree.
	View real-time video.
	Common layout (1,4,6,8,9,13,16,20,25,36,64) and customized layout.
	PTZ control.

	Electronic focus.
	Manual recording (store on PC or central storage).
	Snapshot.
	Instant playback.
	Digital zoom.
	Fisheye dewarp.
	Fisheye -PTZ smart track.
	Smart track for panorama camera.
	Bullet-PTZ smart track.
	Audio talk. · Dual audio input.
	Set alarm window.
	Turn on/off the audio in live view.
	Turn on/off the IVS display in live view.
	Restore face image from face privacy mask.
	Region of interest: Divide one window into 4 or 6 parts, one for whole image, others for the details.
	Display map in Live View. ·
	Save the current live view as a view.
	Up to 4 Live View tabs.
	Support adding channel to favorites.
	Video tour by device, org, favorites, view.
	Quickly switch to playback.
	Support Network Keyboard to control camera on Live View.
	Adjust the video image.
	Adjust the display mode (full screen and original).
	Live video quick positioning on Map.
	Basic setting: Camera properties, video, audio
Playback	Play video from the devices or central storage.
	Video filter: Normal, motion, alarm.
	Sync play
	Reverse playback of central and device video.
	Thumbnails on the progress bar.
	Digital zoom.
	Slow and fast forward (up to 64X and 1/64X).
	Playback frame by frame.
	Lock or mark the important record for central storage.
	Download the video, supports avi, dav, mp4, asf.
	Turn on/off the IVS display in playback.

	Decode the video to video wall.
	Fisheye dewarp.
	Adjust the video image.
	Snapshot.
	Quickly switch to live view.
	Adjust the display mode (full screen and original).
	Common layout (1/4/6/8/9/13/16/20/25/36) and custom layout.
	Support thumbnail search.
	Support smart search
Download Center	Download record from central storage or device, supporting avi, dav, mp4, asf.
	Download record by timeline, files or tags.
	Support multi-task download.

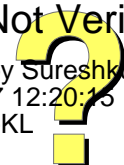
BEST AVAILABLE EQUIPMENT IN THE MARKET

Professional/ Project series cameras and Enterprise Class NVRs of reputed make and best model available in the market shall be quoted as laid down by the Supreme Court in their Judgment. Project warranty is for a total period of 5 Years and if OEM warranty is not available for 5 years, then 3 year standard warranty with 2 years extended warranty would be applicable.

The lowest bidder (L1) will be decided considering the price quoted for the BOQ Materials and Warranty.

Signature Not Verified

Digitally signed by Sureshkumar K
Date: 2022.01.07 12:20:45 PST
Location: Kerala-KL



			the Notice Inviting Tender and specification
2	Finance	.xls	Financial Bid
		.rar	Financial bid for those who have quoted 3 years OEM warranty in the 1st BOQ

Other Important Documents

S.No	Category	Sub Category	Sub Category Description	Format/File
1	Certificate Details	Permanent Account Number	Permanent Account Number	
2	Certificate Details	Registration Certificate	Registration Certificate	
3	Certificate Details	Income Tax Certificate	Income Tax Certificate	
4	Certificate Details	Labour License	Labour License	
5	Certificate Details	Affidavit regarding correctness of bid	Required in tender document in bidder file 1	
6	Certificate Details	Excise registration Number	Excise registration Number	
7	Financial Details	Bankers Details	Bankers Details	
8	Financial Details	P/L and Balance Sheet 2018-2019	P/L and Balance Sheet 2018-2019	
9	Financial Details	P/L and Balance Sheet 2019-2020	P/L and Balance Sheet 2019-2020	
10	Financial Details	P/L and Balance Sheet 2020-2021	P/L and Balance Sheet 2020-2021	
11	Miscellaneous	Company profile	Company profile	
12	Miscellaneous	Tender documents	Tender documents	
13	Work Details	Works Completed Details	Works Completed Details	
14	Work Details	Quantity of Work Done Details	Quantity of Work Done Details	

Tender Fee Details, [Total Fee in ₹ * - 28,750]

Tender Fee in ₹	28,750		
Fee Payable To	Nil	Fee Payable At	Nil
Tender Fee Exemption Allowed	Yes		

EMD Fee Details

EMD Amount in ₹	41,60,000	EMD through BG/ST or EMD Exemption Allowed	Yes
EMD Fee Type	fixed	EMD Percentage	NA
EMD Payable To	Nil	EMD Payable At	Nil

[Click to view modification history](#)

Work /Item(s)

Title	DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATIONALIZING AND MAINTAINENCE OF IP BASED CCTV SURVEILLANCE SECURITY CAMERAS AT 520 NOS. OF POLICE STATIONS IN KERALA BY PROVIDING CENTRALIZED MONITORING AT ALL DISTRICT POLICE CONTROL ROOMS				
Work Description	DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATIONALIZING AND MAINTAINENCE OF IP BASED CCTV SURVEILLANCE SECURITY CAMERAS AT 520 NOS. OF POLICE STATIONS IN KERALA BY PROVIDING CENTRALIZED MONITORING AT ALL DISTRICT POLICE C ROOMS				
Pre Qualification Details	Refer Notice Inviting Tender, Specification and tender document				
Independent External Monitor/Remarks	NA				
Show Tender Value in Public Domain	Yes				
Tender Value in ₹	41,60,00,000	Product Category	Equipments	Sub category	CCTV installation and maintenance
Contract Type	Tender	Bid Validity(Days)	365		45

Location	All Kerala	Pincode	695010	Period Of Work (Days)	
Pre Bid Meeting Address	Police Headquarters Vazhuthacaud Thiruvananthapuram Kerala 695010	Pre Bid Meeting Date	14-Jan-2022 11:00 AM	Pre Bid Meeting Place	Police Headquarters
Should Allow NDA Tender	No	Allow Preferential Bidder	No	Bid Opening Place	Police Headquarters

Critical Dates

Publish Date	07-Jan-2022 06:00 PM	Bid Opening Date	04-Feb-2022 03:00 PM
Document Download / Sale Start Date	07-Jan-2022 06:00 PM	Document Download / Sale End Date	01-Feb-2022 12:00 PM
Clarification Start Date	NA	Clarification End Date	NA
Bid Submission Start Date	18-Jan-2022 12:00 PM	Bid Submission End Date	01-Feb-2022 12:00 PM

Tender Documents

NIT Document	S.No	Document Name	Description	Document Size (in KB)
	1	Tendernotice_1.pdf	Notice Inviting Tender	214.23

Work Item Documents	S.No	Document Type	Document Name	Description	Document Size (in KB)
	1	Tender Documents	GeneralConditions.pdf	Tender Document, General conditions, format for agreement etc	52.15
	2	BOQ	BOQ_667441.xls	Financial Bid	295.50
	3	Other Document	Specification.pdf	Specification	99.74
	4	Other Document	CCTVWARRANTYBOQ.rar	Financial bid for quoting 2 years extended warranty	4.89

Bid Openers List

S.No	Bid Opener Login Id	Bid Opener Name	Certificate Name
1.	fouzy94400@gmail.com	FOUZIYA K M	Fouziya K M
2.	suresh5160@gmail.com	Sureshkumar K	Sureshkumar K
3.	visakh1156@gmail.com	Visakh N	VISAKH N

Tender Properties

Auto Tendering Process allowed	No	Show Technical bid status	Yes
Show Finance bid status	Yes	Show Bids Details	Yes
BoQ Comparative Chart model	Normal	BoQ Compative chart decimal places	3
BoQ Comparative Chart Rank Type	L	Form Based BoQ	No

Tender Inviting Authority

Name	DGP and State Police Chief
Address	Police Headquarters Vazhuthacaud Thiruvananthapuram Kerala 695010

Tender Creator Details

Created By	Sureshkumar K
Designation	Junior Superintendent

Created Date	07-Jan-2022 12:30 PM
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ANNEXURE I

BOO FOR SUPPLY & INSTALLATION OF IP SURVEILLANCE CCTV SYSTEM IN POLICE STATIONS
12 Nos. 4MP IP IR Bullet Cameras with 64-Ch NVR with RAID Facility
(18 Months Storage)
For each Police Station (520 Police Stations)

SL No.	Parameters	Details	Qty.
1	4MP IP Bullet Camera with WDR.	Details are separately enclosed 12 Cameras per each PS	11+1
2	64-Ch NVR with 16 SATA Port (Back up for 18 months)	Details are separately enclosed	1
3	8 TB HDD	Details are separately enclosed 16 HDD PER NVR	16
4	24 Port PoE Switch	24 port Giga byte PoE Switch with 190W	1
5	43 " LED TV	Details are separately enclosed	1
6	2 KVA UPS with minimum 8 hours battery back-up	2 KVA UPS with Two Nos. of 150 AH batteries(or better) <i>For at least 8 hrs Battery back-up</i>	1
7	15 U Rack	15 U Rack with fan for mounting NVR &PoE Switch and all Accessories	1
8	Cabling	Cabling by CAT-6 UTP cable in ISI marked PVC conduit	Average 400 Meters/PS
9	Miscellaneous	Installation charges with all accessories for completing the project	Lump sum

BOQ for One District Head Quarters (For 7 Nos. of Police Districts)

SL. No	Description	Qty
1	i7 Computer. Details are separately enclosed	1
2	43" LED TV. Details are separately enclosed	1
3	Central Monitoring Software (CMS)/ VMS (Video Management Software)	1
4	2 KVA UPS with 2 Nos. of 150 AH batteries (or better) For at least 8 hrs back-up.	1

RESERVE CAMERAS- 50 Numbers to be deployed as per need

SPECIFICATION FOR CCTV EQUIPMENTS

1) 4 MP IP BULLET CAMERAS WITH IR

SL No	PARAMETER	SPECIFICATION	Remarks
	Item Name		
		4MP Bullet Professional/ Project series camera with OEM Warranty for 5 years	
1	Lens Type	Fixed 3.6mm	
2	Image Sensor :	1/3" Progressive Scan CMOS or better	
3	Min. Illumination -	Color: 0.2Lux@F2.0 and 50 IRE, B/W: 0Lux with IR ON or better	
4	WDR	120dB	
5	IR Distance	Min Up to 50m or better	
6	S/N Ratio	>=50Db	
7	Noise Reduction	3D DNR	
8	Resolution	Minimum Up to 2688x1520	
9	Video Compression	H.265+ H265&H 264MJPEG	
10	ONVIF Profile	ONVIF profile S and Profile G compliant	
11	Minimum No of Streams	3	
12	Main Stream Resolution	Main Stream: 2688 x 1520 / 2304 x 1296 / 1920 x 1080 / 1280 x 960 / 1280 x 720@ (1 ~ 25/30 fps)	
13	Sub Stream Resolution	Sub Stream: 704 x 576 / 640 x 480 / 352 x 288@ (1 ~ 25 fps) ; 704 x 480 / 640 x 480 / 352 x 240@ (1 ~ 30 fps)	

14	Third Stream	Third Stream: 1280 x 720 / 704 x 576 / 640 x 480@ (1 ~ 25 fps) 1280 x 720 / 704 x 480 / 640 x 480@ (1 ~30 fps)	
15	Audio Interface	Line In/ Out (In- built Microphone)	
16	Ethernet Port	10 Base-T / 100 Base-TX Ethernet (RJ-45)	
17	Supported Network Protocols	HTTP; HTTPS; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS	
18	Storage	Micro SD Card Support 128 GB or more	
19	Lightning and surge protection(Inbuilt or External)	4000V Lightning-proof, 2000V Surge-proof	
20	Power consumption	10W MAX with IR ON	
21	Ingress Protection	IP67 rated for Weather resistant performance.	
22	Impact Resistance	IK10 rated vandal proof	
23	Event	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access	
24	Security	Must support image overlay watermarking	
25	Certification	CE, UL, FCC, BIS	
26	Warranty	Minimum 5 Years Warranty	

2) 4MP Bullet Motorized Varifocal Camera (At the entrance of Police Station)

SL No	PARAMETER	SPECIFICATION	Remarks
	Item Name		
		4MP Bullet Professional/ Project series Motorized Varifocal Camera with OEM Warranty for 5 years	
1	Lens Type	2.7mm ~13.5mm, Motorized F1.5	
2	Image Sensor :	1/3" Progressive Scan CMOS or better	
3	Min. Illumination -	Color: 0.2Lux@F2.0 and 50 IRE, B/W: 0Lux with IR ON or better	
4	WDR	120dB	
5	IR Distance	Up to 60m or better	

6	S/N Ratio	>=50Db	
7	Noise Reduction	3D DNR	
8	Resolution	Minimum Up to 2688x1520	
9	Video Compression	H.265+ H265&H 264MJPEG	
10	ONVIF Profile	ONVIF profile S and Profile G compliant	
11	Minimum No of Streams	3	
12	Main Stream Resolution	Main Stream: 2688 x 1520 / 2304 x 1296 / 1920 x 1080 / 1280 x 960 / 1280 x 720@ (1 ~ 25/30 fps)	
13	Sub Stream Resolution	Sub Stream: 704 x 576 / 640 x 480 / 352 x 288@ (1 ~ 25 fps) ; 704 x 480 / 640 x 480 / 352 x 240@ (1 ~ 30 fps)	
14	Third Stream	Third Stream: 1280 x 720 / 704 x 576 / 640 x 480@ (1 ~ 25 fps) 1280 x 720 / 704 x 480 / 640 x 480@ (1 ~ 30 fps)	
15	Audio Interface	Line In/ Out (In- built Microphone)	
16	Ethernet Port	10 Base-T / 100 Base-TX Ethernet (RJ-45)	
17	Supported Network Protocols	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS	
18	Storage	Micro SD Card Support 128 GB or more	
19	Lightning and surge protection(Inbuilt or External)	4000V Lightning-proof, 2000V Surge-proof	
20	Power consumption	10W MAX with IR ON	
21	Ingress Protection	IP67 rated for Weather resistant performance.	
22	Impact Resistance	IK10 rated vandal proof	
23	Event	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access	
24	Security	Must support image overlay watermarking	
25	Certification	CE, UL, FCC, BIS	
26	Warranty	5 Years Warranty	

3) NVR (NETWORK VIDEO RECORDER)

SL No	PARAMETER	SPECIFICATION	REMARKS
	Item Name	64 Channel Enterprise Class Network Video Recorder (NVR)	
1	No of Channels (Min)	64	
2	Network Interface	2 Nos. of RJ45 100/1000 ports	
3	Input Bandwidth	Min 320Mbps	
4	Network Protocols	IPv4/ IPv6, TCP	
5	Interface	2x HDMI Ports; (1 HDMI up to 3840 × 2160); (HDMI supports Audio Output)	
		4 USB Ports	
		1 VGA Port	
6	Recording Resolution	12MP/8MP/6MP/5MP/4MP/3MP/1080P/ UXGA/720P/D1/VGA/CIF/QCIF	
7	Recording Type	Continuous, Motion Detection, Alarm, Smart Event, Event (Motion Detection, Alarm, Smart Event)	
8	Synchronous Playback	16 CH synchronous playback	
9	Supported Video Compression	H.265+/H.265 or better	
10	Supported Audio Format	G.711/ AAC/ G.722/ G.726	
11	Storage Support	Should have min 16 SATA HDD Ports and each support 8TB or above and should be hot swappable and should support RAID 0/1/5/6	
12	External HDD	1 e SATA Port	
13	Ethernet	1 x RJ-45 port (10/100/1000 Mbps)	
	Security	Must support digital watermarking (digital hashing) for export	
14	Compatibility	ONVIF 2.4	
15	Power Supply	AC 120V to 240V	
16	Certification	CE, FCC, UL, CUL, ROHS	
17	Warranty	5 Years Warranty	

4) MONITOR/TV

		Professional/ Commercial LCD Display	
1	Device Type :	43 inch, LED-backlit LCD monitor	
2	Aspect ratio :	16:9	
3	Resolution :	Full HD	
4	Brightness :	Min 350 nit	
5	Operating Hours	24x7	
6	Input connections :	Min 2xHDMI ports	

MONITOR MOUNTS

- 1) It shall be capable for mounting all type of LCD monitor with dimensions of 43" using suitable adaptor/additional base plate, if required any.
- 2) It shall have the facility to allow rotate/ tilt/ raise/ monitor as well as fix their adjustment.

5) COMPUTER WORK STATION

Video Management Software shall be provided in all District Police Headquarters for monitoring purpose.VMS shall be installed and configured on a Work station having following Specification.

- 1) 11th Generation Intel Core i7-11700T (8 Cores, 16 MB Cache, 1.4 GHz, 35 W)
- 2) Operating System: Windows 11 Professional, English
- 3) Memory: 16GB, 1x16GB, DDR4 non ECC Memory
- 4) M.2 1TB PCIeNVMe Class 40 Opal 2.0 Self Encrypting SSD
- 5) Security – Effective Anti-Virus software shall be provided.
- 6) Warranty: 5 Years comprehensive On-site Warranty including Monitor
- 7) Ports: 1. Power Button | 2. Universal Audio Jack | 3. Line-In/Out | 4. USB 3.2 Gen2 Type-C® Port | 5. USB 3.2 Gen1 Type-A Port | 6. Knock-out Slots for Wireless Antenna | 7. Optional Port: VGA/DP1.4/HDMI 2.0b/USB Type-C® Port | 8. USB 3.2 Gen1 Type-A Ports (4) | 9. Thumbscrew | 10. Padlock Loop | 11. RJ-45 | 12. K-lock Slot | 13. Display Port (2) | 14. Power Connection
- 8) Chipset: compatible Chipset
- 9) Motherboard: OEM Motherboard
- 10) Keyboard: USB interface. Keyboard. Same make as PC.
- 11) Mouse: Optical with USB interface. Same make as PC.
- 12) Networking facility: 10/100/1000 on board integrated Network Port, & Wi-Fi 802.11 b/g/n connectivity Certifications

6) **Surveillance Hard Disk**

To store camera visuals of 12 Nos. of cameras for 550 days (18 Months) in full resolution (4MP) @ 20fps requires around 100 TB after compression using H.265+/ H.265. So 16 Nos. of 8TB HDD are considered for each PS and it shall be configured in RAID 5 mode for redundancy.

SURVEILLANCE HDD			
PARAMETERS & SPECIFICATION			REMARKS
Drive	Form Factor	3.5 inch	
	Capacity	8TB	
	Recording Technology	CMR	
	Cache (MB)	256	
Reliability	MTBF(Hours)	2M	
	Warranty (Years)	5 yrs	
Performance	Interface	SATA 6Gb/s	
	RPM	7200	
	Max. Sustained Transfer Rate (MB/s)	255	
Power	Idle (W)	7.4	
	Operating (W)	8.8	

7) 24 Port PoE Switch

24 port PoE Switch			
S.No.	Technical Specifications		
	24-port 1000base-T Gigabit PoE Smart Switch		Compliance
1	Physical Specifications	24 # 10/100/1000 Base-T auto-sensing PoE+ ports,2 dedicated 100/1000 Base-X Fiber SFP ports	
2	Performance Specification	Bandwidth: 52 Gbps non-blocking	
		Heat Dissipation (at full PoE load): 780.20 Btu/H	
		Forwarding modes: Store-and-forward	
		8 Priority queues,Priority queuing: Weighted Round Robin (WRR)	
		MAC Address database size: 8,000 media access control (MAC) addresses	
		VLAN: 64,128 Multicast groups	
		256 DHCP snooping bindings,Packet buffer: 0.5 MB	
		Power Consumption: 228.53W Max,PoE budget: 190W	
3	IEEE Network Protocols	IEEE 802.3 Ethernet	

		IEEE 802.3u 100BASE-T, IEEE 802.3ab 1000BASE-T	
		IEEE 802.1Q VLAN Tagging, IEEE 802.3x full-duplex flow control	
		IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX, IEEE 802.3ad Trunking (LACP)	
		IEEE 802.1ab LLDP with ANSI/TIA-1057 (LLDP-MED)	
		IEEE 802.1p Class of Service	
		IEEE 802.3 af (PoE), IEEE 802.3 at (PoE+)	
4	Network Security and Traffic	IEEE 802.1x	
		Guest VLAN	
		RADIUS based VLAN assignment via .1x, MAC-based .1x	
		Network Storm Protection	
		Broadcast, Unicast, Multicast Protection	
		Access Control Lists (ACLs) L2 / L3 / L4	
		IP-based ACLs (IPv4), MAC-based ACL, TCP/UDP-based ACL	
		MAC lockdown, MAC lockdown by the number of MACs	
		IEEE 802.1x Radius Port Access Authentication	
5	L2 Services	IEEE 802.1Q VLAN Tagging	
		Voice VLAN	
		IEEE 802.3ad - LAGs - LACP (8 LAGS with max. of 8 members in each LAG)	
		Broadcast Storm Control	
		IGMP Snooping (v1, v2 and v3)	
		MLD Snooping Support (v1 and v2)	
		IGMP Snooping queriers	
		DHCP Client, DHCP Snooping	
6	Network Monitoring and Discovery Services	802.1ab LLDP	
		SNMP V1, V2, V3	
		RMON 1,2,3,9	
7	Quality of Service(QoS)	Access Lists	
		Egress rate limiting	
		Diff ServQoS	
		IEEE 802.1p COS	
		Destination MAC and IP	

		IPv4 DSCP,IPv4 TOS	
		WRR (Weighted Round Robin)	
		Strict Priority queue technology	
		Auto-VoIP Vlan,Auto Voice Vlan,Port Mirroring	
8	Management	Password management	
		Configurable Management VLAN	
		Admin access control via Radius and TACACS+	
		Web-based graphical user interface (GUI)	
		Smart Control Centre (SCC) for multi Switch management	
		Dual Software (firmware) image, Dual Configuration file	
		SNTP client over UDP port 123	
		SNMP v1/v2,SNMP v3 with multiple IP addresses	
		RMON 1,2,3,9,HTTP Download (firmware)	
		Syslog (RFC 3164)	
9	LEDs	Per port: Speed, Link, Activity	
		Per device: Power, Fan and PoE Power Status	
10	Environmental Conditions	Operating Temperature: 32° to 122°F (0° to 50°C)	
		Operating Humidity: 95% maximum relative humidity, non-condensing	
		Storage Temperature: – 4° to 158°F (–20° to 70°C)	
		Storage Humidity: 95% maximum relative humidity, non-condensing	
11	Certifications	CE mark, commercial,FCC Part 15 Class A	
		RCM: AS/NZS CISPR 32:2013 Class A	
		ISED: ICES-003:2016 Issue 6 , Class A, ANSI C63.4:2014	
		EN 55024,CCC,UL listed (UL 1950)/cUL IEC 950/EN 60950	
12	Warranty and Support	5 Year hardware replacement warranty	

8) CAT 6 LSZH U/UTP Cable (Indoor)			
Sl. No.	Parameters	Cat-6 Horizontal Cable	Compliance
1	Type	Unshielded / Unshielded Twisted Pair (U/UTP), Category 6 Cable - White color.	
2	Standards	The Cable should meet ANSI/TIA 568C.2 Category 6 Specifications	
3	Conductors	The cable should consist of Eight 23 AWG bare copper conductors. Copper Clad Aluminum or any other combinations are not allowed	

4	Cable weight	The weight of the cable box of 1000 Feet should not be less than 25 lb/kft	
5	Frequency	Maximum Operating Frequency will be 300 MHz	
6	Jacket thickness	The nominal Jacket thickness should be 0.020 inches	
7	Outside diameter	The nominal Outside diameter should be 0.233 inches	
8	Operating Voltage	Maximum Operating Voltage will be 80V	
9	Pair Separator	Pair Separator shall be Bisector tape reduce the cross talk and improve performance	
10	Pulling Tension	maximum Pulling Tension will be 11 KG	
11	Temperature	The cable should support the installation temperature: 0 to 60 0 C	
12	Third party certificate (Genuine)	ETL four connector channel certificate for long distance and short distance test report.	
13	Jacket type	The LSZH Cable should support the following standard to qualify	
		(a) ISO/IEC 60332-3-22 Vertical Flame spread test	
		(b) ISO/IEC 60754-2Acidity	
		(c) ISO/IEC 61034-2 Smoke Density	
		(d) 3rd Party verification of Fire safety/environmental tests listed above must be provided as part of the bid response.	
14	Additional info	The cable and cordage shall be UTP components that do not include internal or external shields, screened components or drain wires that require additional grounding and bonding	
15	Online Verification	The cable test parameters shall include NEXT, PSNEXT, Return Loss, Attenuation, ELFEXT and PSELFEXT. The on-line reference must be available on the SCS vendor public website, such that it can be accessed at any time.	
16	RoHS	RoHS Compliant	

9) Cat-6 U/UTP Outdoor Cable-Double sheath, Anti-Rodent			
SI No.	PARAMETERS	SPECIFICATION	REMARKS
1	Type	Unshielded Twisted Pair, Jell free, Category 6, TIA / EIA 568-C.2 & ISO/IEC 11801	
2	Environment	Double jacketed cable for indoor & outdoor application and crush resistance	
3	Conductors	23 AWG solid bare copper	
4	Protection	Anti-Rodent	
5	Insulation	Polyolefin	
6	Outer sheath	Fire Retardant LSZH for Indoor purpose	
7	Inner sheath	Polyethylene, UV Resistant for outdoor purpose	
8	Pair Separator	Cross-member (+) fluted Spline.	
9	Temperature range	-20 Deg. C to +70 Deg. C	
10	Frequency tested up to	Minimum 250 MHz	

11	Packing	Box of 305 meters	
12	Cable Outer Diameter	7.2 mm nominal	
13	Delay Skew	45ns MAX.	
14	Bend Radius	28mm Minimum	
15	Color	Black	
16	Conductivity	Cable shall not have any metal/Armour layer to protect. They can carry the electrical/lighting current directly to switch, if the cable is exposed to environment	
17	Impedance	100 Ohms + / - 15 ohms, 1 to 250 MHz.	
18	Mutual Capacitance	5.6 NF MAX /100 Mtr.	
19	Conductor Resistance	66.58 Ohms Max / KM	
20	Propagation Delay	536 ns/100 Mtrs. MAX @ 250 Mhz	
21	Transmission Standards	ANSI/TIA-568.2-D, ISO/IEC 11801 Class E	
22	Remote Powering	Cable shall be fully complied with the recommendations set forth by IEEE 802.3bt (Type 4) for the safe delivery of power over LAN cable when installed according to ISO/IEC 14763-2, CENELEC EN 50174-1, CENELEC EN 50174-2 or TIA TSB-184-A	
23	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR	
24	ROHS Compliant	ROHS/ELV Compliant	

10) CAT 6 Patch Panel-24 port-Loaded

Sl. No.	PARAMETERS	SPECIFICATION	REMARKS
1	Type	Patch panel Unshielded / Unshielded Twisted Pair (U/UTP), Category 6	
2	Standards	The panel should meet ANSI/TIA 568C.2 Category 6 Specifications	
3	Panel configuration	The panel shall be available in 24-port and 48-port configurations with universal A/B labeling and 110 connector terminations on rear of panel allowing for quick and easy installation of 22 to 24 AWG cable	
4	Modular panel	The ganged adapter style patch panel will utilize increments of six RJ-45 style jacks in a common molded component.	
5	Insertion life cycle	The patch panel shall be compliant with IEC 60603-7 for Plug Insertion life test and minimum Plug Insertion life shall be 750 times	
6	Patching and Termination procedure	The ganged adapters shall have RJ45 jack in the front and Insulation Displacement Connector (IDC) at the rear of the module.	
7	Material used	Panel shall be available in straight and angled style with made of	

		Powder-coated steel	
8	Additional future for noise cancellation	Termination managers must be provided with the panel. These termination managers provide proper pair positioning, control, and strain relief features to the rear termination area of the panel.	
9	Panel size	Panel size shall be 120mm (D), 45mm (H), 485 mm (W)	
10	Flammability Rating	UL 94 V-0	
11	Third party certificate for Genuity	ETL four connector channel certificate for long distance and short distance test report.	
12	Rear cable manager	Panel shall have rear cable manger with proper design to hold all 24 cable. This shall provide strain relief for outlet and organization of cables being routed to the back of a patch panel.	
13	Channel performance	When configured in worst-case 100-meter channels with full cross-connects and consolidation points with the other products proposed in this tender, the panel shall be capable of delivering the minimum guaranteed channel performance.	
14	RoHS	RoHS Compliant	

11) CAT 6 LSZH U/UTP RJ45 Patch Cords			
Sl. No.	Parameter	Specification	Remarks
1	Type	Unshielded / Unshielded Twisted Pair (U/UTP), Category 6 patch cords -Different color shall be available.	
2	Standards	The Cordage should meet ANSI/TIA 568C.2 Category 6 Specifications	
3	Length	The cordage shall be available in different length based on the site requirement	
4	Construction	All cords shall be round, and consist of copper conductors, tightly twisted into individual pairs.	
5	Cordage diameter	Nominal cordage diameter shall not exceed 5.92 mm.	
6	Plug design	Plugs shall be designed with an anti-snag latch to facilitate easy removal during move, add and change processes.	
7	Jacket type	The cordage sheath shall be made of Low-Smoke, Zero Halogen (LSZH)	
8	Fire Safety standards:	The LSZH version must comply with the following Fire Safety standards:	
		a. ISO/IEC 60332-3-22: Vertical Flame Spread	
		b. ISO/IEC 60754-2: Acidity	
		c. ISO/IEC 61034-2: Smoke Density	
9	3rd Party verification	3rd Party verification of the Fire Safety/ Environmental tests listed above must be provided as part of the bid response.	
10	Additional info	The cable and cordage shall be UTP components that do not include internal or external shields, screened components or drain wires that require additional grounding and bonding	
11	insertion life cycle	The patch cords will have insertion life of 750 cycles minimum.	
12	RoHS	RoHS Compliant	

12) Category 6 UTP Information Outlets		
Sl. No.	Details	Standard Compliance
1	Standards	All Category 6 UTP outlets shall meet or exceed Category 6 transmission requirements for connecting hardware, as specified in TIA/EIA 568-B.C.2 Commercial Building Telecommunications Cabling Standard and ISO/IEC 11801:2002 Second Edition.
2	Compatibility	The Category 6 outlets shall be backward compatible with Category 5E, 5 and 3 cords and cables.
3	Outlet Design	The Category 6 outlets shall be of a universal design supporting T568 A & B wiring.
4	Termination procedure	The Category 6 outlets shall be able to terminate without tool for the quick termination
5	Mounting options	The Category 6 outlets shall be capable of being installed at either a 45 ⁱ or a 90 ⁱ angle in any M-series modular faceplate, frame, or surface-mounted box avoiding the need for special faceplates.
6	Noise cancellation	The Category 6 outlets shall have improved pair splitters and wider channel for enhanced conductor placement.
7	General specifications:	a. Meets or exceeds the mechanical, electrical, and clearance specifications in FCC Rules and Regulations, Part 68, Subpart F
		b. Meet or exceed the Category 6 requirements in ISO/IEC 11801, CENELEC EN 50173, and TIA/EIA568B
		c. The 8-pin modular (RJ-45) jacks shall comply with IEC 60603-7-4.
8	Third party certificate for Genuity	ETL four connector channel certificate for long distance and short distance test report.
9	PoE and PoE+ applications	The information outlet shall have a Current Rating of 1.5 A at 20°C to support the PoE and PoE+ applications
10	insertion life cycles	The information outlet will have insertion life of 750 cycles minimum.
11	Type of conductors	The information outlet must be able to accept termination of solid conductors with nominal diameter of between 0.40 mm to 0.64 mm (26 to 22 AWG).
12	Test Methodology for performance	Outlet shall be tested with MDM Methodology for higher performance
13	RoHS	RoHS Compliant

13) TECHNICAL SPECIFICATION OF SURGE PROTECTION DEVICES (SPD) & EARTHING

Parameter	Specifications	Remarks
Applicable standards	IEC 62305 part3, IEC 62561	
Earth electrode diameter	14.2 mm	

Earth electrode length	2 Mtr	
Copper bonding thickness	250 micron	
Earth enhancement Compound	OEC 2 10 mineral compound	
Resistance earth of enhancement compound	<0.2 Ohm.m	
Connector earth for electrode	Universal connector made of 304 SS suitable to connect 14.2 mm dia electrode to strip	

14) Technical Specification of Power line SPD

Class B+C/Class I+II (according to IEC 61643)

Pluggable type SPD with potential free contact, thermal disconnecter & provision for inbuilt common remote indication for defective arresters has to be connected between Line and Neutral and SPD of Spark Gap type between Neutral and Earth of following ratings should include base element & pluggable arresters.

Parameter	Specifications		Remarks
	Line to Neutral	Neutral to Earth	
Type	MOV with built in thermal fuse	Spark Gap Encapsulated / Non-exhausting	
Nominal Voltage, Un	230V, 50/60 Hz		
Maximum Continuous Operating Voltage, Uc	≥ 320 Volt	255 Volt	
Nominal Discharge Current I _n	30 KA(8/20 μ sec)	50 KA(8/20 μ sec)	
Maximum Discharge Current I _{max}	50 KA (8/20 μ sec)		

Lightning Current	Impulse	7 KA(10/350 μ sec)	25 KA(10/350 μ sec)	
Voltage Level	Protection	\leq 1300 volts	\leq 1200 Volt	
Response Time		< 25 nano seconds	< 100 nano seconds	
Operating temperature range		-40 μ C to +80 μ C		
Mounting on		Din Rail		
Degree of Protection		IP 20		
Max. Back-up fuse / MPCB		Up to 160 amps max. Depending up on panel design & breaking capacity.		

15) 15U WALL MOUNT RACK

SL No	Specification
1	Racks manufactured out of steel sheet punched, formed, welded and Powder coated
2	Rack should be from ISO 9001:2008, ISO14001:2004, ISO 27001:2013 ISMS,OHSAS18001:2007& UL Listed Certified company and have proper EHS Policy.
3	Standard for Racks configuration will be welded frame integrated with side panel and vented top cover
4	Rack should have Front Toughened Glass Door with lock & Key
5	Rack should have provision to mount racks on wall.
6	Rack should be 15U(1U=44.45 mm) in Height, 600MM Width, 600MM Depth and overall height 666.75 MM.
7	Rack should Conform to DIN 41494 or Equivalent EIA /ISO / EN Standard
8	Rack should have Adjustable mounting depth,
9	Rack 2 No Adjustable, 19" verticals with Punched 9mm Square Hole and Universal 12.7mm-15.875mm-15.875mm alternating hole pattern offers greater mounting flexibility, maximizes usable mounting space.
10	Rack should have 100% assured compatibility with all equipments conforming to DIN 41494 (General industrial standard for equipments)
11	Powder coated finish with seven Tank pretreatment process meeting IS
12	Rack should have Proper Grounding & Bonding
13	Rack should have the provision for mounting 2 Fan on Top cover ITE / Server Rack Air Circulation module/Tower Mount/180CFM

14	Rack should have 1 No Cantilever Shelf for mounting NON Rack mountable Equipments
15	Rack should have 1 No Power Distribution Units with 6 No 5/15A Indian Round Pin with PDU Rating 3.6KVA/Side feed-1.5Mt/ Black
16	Rack should have 2 No Horz. Cable Organizer/1U/ Channel On Front.
17	Rack should have provision for cable entry Exit from Both top & Bottom.
18	Rack should have 1 Packet of Mounting hardware, Pack of 20

16) 2KVA Sine Wave UPS With 150 Ah Battery 2 Qty.

- 1) Pure Sine Wave Output, Synchronized Charge over
- 2) MCB Protection, Seven Segment Display, By Pass Switch,
- 3) Capacity: 2000VA/24V, Input: Voltage (100-285V), Output: Max.Bulb Load (1600 Watt)
- 4) Tubular Battery, Factory charged battery in ready to use condition
- 5) Nominal Voltage (V): 12
- 6) Rated Capacity (Ah) : 150

17) HDMI Cable

- 1) High Speed 10.2Gbps
- 2) HDMI Cable - CL3 Rated
- 3) Supports 4K 30Hz, Ultra HD, 3D, 1080p, Ethernet and Audio Return (Latest Standard)
- 4) 50 Feet (15 Meters)**

18) VMS Software features

VMS Key Features	
Video Device and Channel	1,000 Channels
Auto-Register	1,000 Channels
ONVIF	400 Channels
Map	Support Google map and raster map.
	Display the video channel on the map.
	View live and recorded videos.
Log	System, admin, client log.
	Search and export log
Live View	Display device tree; show or hide offline device.
	Display the device IP address or device name on the device tree.
	View real-time video.
	Common layout (1,4,6,8,9,13,16,20,25,36,64) and customized layout.
	PTZ control.

	Electronic focus.
	Manual recording (store on PC or central storage).
	Snapshot.
	Instant playback.
	Digital zoom.
	Fisheye dewarp.
	Fisheye -PTZ smart track.
	Smart track for panorama camera.
	Bullet-PTZ smart track.
	Audio talk. · Dual audio input.
	Set alarm window.
	Turn on/off the audio in live view.
	Turn on/off the IVS display in live view.
	Restore face image from face privacy mask.
	Region of interest: Divide one window into 4 or 6 parts, one for whole image, others for the details.
	Display map in Live View. ·
	Save the current live view as a view.
	Up to 4 Live View tabs.
	Support adding channel to favorites.
	Video tour by device, org, favorites, view.
	Quickly switch to playback.
	Support Network Keyboard to control camera on Live View.
	Adjust the video image.
	Adjust the display mode (full screen and original).
	Live video quick positioning on Map.
	Basic setting: Camera properties, video, audio
Playback	Play video from the devices or central storage.
	Video filter: Normal, motion, alarm.
	Sync play
	Reverse playback of central and device video.
	Thumbnails on the progress bar.
	Digital zoom.
	Slow and fast forward (up to 64X and 1/64X).
	Playback frame by frame.
	Lock or mark the important record for central storage.
	Download the video, supports avi, dav, mp4, asf.
	Turn on/off the IVS display in playback.

	Decode the video to video wall.
	Fisheye dewarp.
	Adjust the video image.
	Snapshot.
	Quickly switch to live view.
	Adjust the display mode (full screen and original).
	Common layout (1/4/6/8/9/13/16/20/25/36) and custom layout.
	Support thumbnail search.
	Support smart search
Download Center	Download record from central storage or device, supporting avi, dav, mp4, asf.
	Download record by timeline, files or tags.
	Support multi-task download.

BEST AVAILABLE EQUIPMENT IN THE MARKET

Professional/ Project series cameras and Enterprise Class NVRs of reputed make and best model available in the market shall be quoted as laid down by the Supreme Court in their Judgment. Project warranty is for a total period of 5 Years and if OEM warranty is not available for 5 years, then 3 year standard warranty with 2 years extended warranty would be applicable.

The lowest bidder (L1) will be decided considering the price quoted for the BOQ Materials and Warranty.
