



## **CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY (C-DIT)**

An Autonomous organization under Government of Kerala,  
Thiruvallom (PO), Thiruvananthapuram, Kerala – 695 027;

[www.cdit.org](http://www.cdit.org);

mail id: headoffice@cdit.org; mr@cdit.org

# **EOI Document**

**Expression of Interest for identifying a Joint venture partner for participating in e-Tender published by the Police Department, Kerala for Design, Supply, Installation, Testing, Commissioning, Operationalizing and Maintenance 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 Kerala**

**Ref. No. C-DIT/EGOV/01-22/ CCTV-001 Dated 18-01-2022**

**Date of Publishing of EOI : 19.01.2022**

**Last Date of Submission of EOI : 26.01.2022 Time:3.30 PM**

## **EXPRESSION OF INTEREST NOTICE**

Centre for Development of Imaging Technology (C-DIT) invites Expression of Interest (EOI) to identify suitable agencies for building a Joint Venture for participating the e-Tender (ID 2022\_KP\_466098\_1 Reference Number KPET/01/2022/PHQ) published by the Police Department, Kerala. The tender is for design, supply, installation, testing, commissioning, operationalizing and maintenance 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 Kerala. Interested agencies/firms/companies meeting the eligibility criteria can submit EOI.

Interested eligible agencies may for further information contact:

**Sri.M R Mohanachandran,  
Deputy Director, EGID,  
C-DIT, Thiruvallom, Thiruvananthapuram.  
Kerala - 695027  
Phone: 9895788133  
mail.id: mr@cdit.org**

Thiruvananthapuram  
Date: 18-01-2022

**Registrar**

## FORMAT FOR COVERING LETTER

---

*(This letter to be submitted on the official letter head of the tenderer, signed by the authorized signatory.)*

Letter No: .....

date: .....

To  
The Registrar,  
Centre for Development of Imaging Technology (C-DIT)  
Thiruvallom (PO), Thiruvananthapuram.  
Kerala- 695027

**Sub:** Expression of Interest for building a joint venture with C-DIT to participate in the bid published by Police Department (e-Tender ID 2022\_KP\_466098\_1, Ref. No. KPET/01/2022/PHQ)- reg.

**Ref:** EOI No. C-DIT/EGOV/01-22/ CCTV-001 Dated 18-01-2022 published by C-DIT

**Sir,**

I/We hereby submit our expression of Interest for forming a joint venture with Centre for Development of Imaging Technology (C-DIT) for participating the bid published by Police Department and we are ready to undertake the work assigned by CDIT for the project of Police Department **“design, supply, installation, testing, commissioning, operationalizing and maintenance 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 Kerala”** as per the terms and conditions of EOI.

We have read and understood in full the e-tender (ID 2022\_KP\_466098\_1 Reference Number KPET/01/2022/PHQ) published by the Police Department, Kerala) and this EOI and agree to comply in full the terms and conditions for participating in the bid as a JV partner, and if the work is awarded to C-DIT to act under the control and supervision of C-DIT, the primary bidder, for the successful conduct of the project during its entire duration.

*Yours faithfully,*

*Place:*

*Date:*

*Signature Name*

*Designation*

(Office Seal)

## 1. About C-DIT

Centre for Development of Imaging Technology (C-DIT) is a unique organization under the Government of Kerala working in the area of convergence and beyond of Information and Communication Technologies (ICT). C-DIT has been functioning as a Total Solutions Provider to the departments and agencies under the Government of Kerala in the areas of ICT applications.

## 2. Purpose of Empanelment

The Police Department, Kerala has invited bids from Total Solution Providers for Design, Supply, Installation, Testing, Commissioning, Operationalizing and Maintenance 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. As a TSP in the state government sector, Centre for Development of Imaging Technology(C-DIT) is interested to participate in the bid, as a joint venture with a suitable OEM approved System Integrator. C-DIT shall be the primary bidder and shall determine the rates to be quoted by the JV and the JV partner shall work under the direction and supervision of C-DIT, if the work is awarded. Accordingly, C-DIT invites Expression of Interest from reputed organizations having sufficient expertise and good track record in undertaking similar works to be part of the venture.

## 3. SCOPE OF THE EOI

This Expression of Interest is only for selection of one OEM approved System Integrator to associate with C-DIT in the joint venture for submitting the e-tender **KPET/01/2022/PHQ Dated 07.01.2022** of Police Department for Design, Supply, Installation, Testing, Commissioning, Operationalizing and Maintenance 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.

**Agencies having sufficient experience and fulfilling the conditions set out below may submit the EOI.**

Please see Annexure 1 for detailed Scope published by the Police Department.

#### **4. GENERAL CONDITIONS**

- a) **The agency shall be registered Proprietorship/ Partnership/ Company/ having registered office in India and should have a registered support centre/ service centre in Kerala.** Copy of relevant certificate of Registration and Address details shall be provided.
- b) The agency shall have a PAN and GST Registration. Copy of the document shall be submitted along with EOI.
- c) The agency should have been in business in CCTV Projects for the last 10 years.
- d) **The agency should be an OEM approved System Integrator for implementing CCTV solutions. Certificate to this effect should be submitted along with the EOI**
- e) The system integrator should have Manufacturers Authorization Form (MAF) from reputed OEMs of major components of supply such as Cameras, NVR, Cables, Switches, UPS, Surge Protectors, Monitor/ TV, Workstation and relevant software to participate in the tender. The MAF Certificates from the OEM must be for all aspects and must include for sales, service, availability of spares and installation and maintenance during the entire five year warranty period. **The MAFs must be mandatorily submitted along with EOI.**
- f) The firm 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. (Necessary documents to be produced).
  - Three (03) similar (CCTV project) completed works costing each not less than the amount equal to 50 Lakhs and should have an average turn over not less than 1.5 Crore during the last three years

OR

- Two (02) similar (CCTV project) completed works costing each not less than the amount equal to 1 Crores and should have an average turn over not less than 1.5 Crore during the last three years.

OR

- One (01) similar (CCTV project) completed work costing each not less than the amount equal to 1.5 Crores and should have an average turn over not less than 1.5 Crore during the last three years.

g) The Proposed CCTV Camera OEM should have been in business in Indian market for the last 10 years and should undertake projects through integrators during last 7 years having a minimum eligibility of any 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.

h) Selected agency shall execute a Joint Venture agreement with C-DIT to be part of the joint Venture that shall bid for the Police Department against e tender No e-Tender ID 2022\_KP\_466098\_1, Reference Number KPET/01/2022/PHQ, and if the work is awarded, to fulfill obligations as stipulated by the agreement.

i) The selected agency shall provide a valid power of attorney in the name of C-DIT authorising to submit the bid as the primary bidder and enter into correspondence with the Police Department, Kerala.

j) During the evaluation of EOI, C-DIT may seek more clarifications/details from any or all of the applicants, if felt necessary.

- k) The final acceptance/rejection of any one or all the EoI rests entirely with the discretion of C-DIT. C-DIT also reserves the right, not to proceed with participating in the e-tender called by the Police Department, at any time, even after selection of JV partner.
- l) The agency should not be black listed in India/abroad for the last seven years. A self-declaration of the agency showing that they are not black listed in India/abroad for the last seven years (In company letterhead)
- m) The agency shall submit a copy of the list of completed works in Form No.3 attached with copies of completion certificates issued by clients.
- n) The agency shall submit copy of list of projects under execution in Form No.4
- o) The agency shall meet all eligibility criteria stated for the System Integrator mentioned in e-tender document( (e-Tender ID 2022\_KP\_466098\_1 published by Police Department)

## **2. SPECIAL CONDITIONS**

- a) The agency shall have offices in Kerala and have district level support Centres/ Service Personnels for timely installation of CCTV system as per the direction of the Police Department, if work is awarded and also for service call resolutions with minimum downtime penalty.
- b) During the period, the identified firm 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 a dedicated phone number and email ID for immediate resolution. A daily report on the number of calls received, closed or pending should be submitted to C-DIT as may be determined from time to time, and a consolidated report must be sent to C-DIT/appropriate authority as decided from time to time. The agency shall also set up and operationalise a dedicated ticketing software for resolution of complaints with provision of web based issue reporting from each police station and the said software should have provisions to denote call resolution times and call escalation

mechanisms to C-DIT, if not rectified within the minimum resolution time as desired by the Kerala Police. C-DIT shall be provided privileges in the software application to view the daily status of implementation, issue reporting, call resolution with time details etc and should be provided any reports as called for.

- c) This EOI is only for identifying a bidding partner to C-DIT for submitting an e-Tender ID 2022\_KP\_466098\_1 published by the Police Department Kerala. All terms and conditions stipulated in the e-Tender, including those published subsequently vide any corrigendum will be part of this document and applicants shall carefully read the referred tender document before participating this EOI
- d) The role of the System Integrator shall be to procure and supply the hardware from the OEMs and to install and commission them as per the directions from the C-DIT and also to ensure warranty support and service issues during the entire 5 year period, if the work is awarded. In case of any default in performance by the System Integrator, C-DIT shall be free to terminate the JV agreement and engage other suitable SI or complete on its own the reminder of the obligation to the Police Department. SI shall provide an undertaking from the OEMS to directly do business with C-DIT so that the obligations to the Police Department are complied by C-DIT even in the default of the SI.
- e) The selected agency shall provide all necessary assistance to C-DIT for the timely submission of e-Tender.
- f) The selected agency shall be responsible for all payments including tender fee, EMD, or any type of Security deposit on behalf of C-DIT coming as a part of the e-Tender, unless exempted by law.

### **3. HOW TO APPLY**

- a) The agencies who meet the eligibility criteria mentioned above can apply for being a bid partner in the joint Venture for the tender floated by the Police Department



- b) The agency can download the EOI document from the web site **www.cdit.org**. The soft copy of the duly filled and signed EOI document in all pages along with scanned copy of the supporting documents shall be e-mailed to **procurement@cdit.org** and a copy to **egov@cdit.org** before the last date. The soft copy shall be in '**pdf**' format.
- c) The file name of the EOI document shall be **EOI\_Companyname.pdf**
- d) EOIs that are not in the prescribed form are liable to be rejected.
- e) The agency shall send a signed copy of the EOI with all documents to CDIT within 7days from the last date of EOI.

#### **4. DOCUMENTS TO BE SUBMITTED**

- Eoi Document- Signed and sealed in all pages.
- FORM 1- Structure and Organisation.
- Copy of Company Registration Certificate/ Certificate of incorporation etc.
- Copy of the PAN.
- Copy of GST Registration.
- FORM 2 -Financial Information.
- Copy of the audited statements
- Form 3-Details of all works of similar nature completed during the last seven years ending last day of December 2021 along with Copy of Work orders.
- FORM 4- Projects under execution or awarded along with Copy of Work orders.
- Form 5 Manufacturers' authorization Forms, certificate of OEM approved SI, OEM credentials
- Form 6 - BoM Proposed Make and Model of equipments **without** financials
- ***EOIs with incomplete or missing forms will be summarily rejected***

#### **5. LAST DATE OF SUBMISSION OF EOI**

The last date of submission of EOI document through email is **22/01/2022 5.00 PM** and the hard copy of the entire documents shall be received in the office by **25/01/2022 5.00 PM**.

## **6. DEVIATIONS**

The offers of the agencies with deviations in the Technical Terms of the EOI Document shall be summarily rejected.

## **7. BLACK LIST**

All the intending agencies shall agree that in the event of the documents furnished with the offer being found to be bogus or the documents contain false particulars, they shall be blacklisted for future association with C-DIT and shall initiate legal proceedings against such agencies.

## **8. AGENCIES LOCATION**

The agencies are requested to furnish the exact location of their offices/ client sites with Name of contact person, Postal address, pin code, Mobile phone numbers, email etc. . C-DIT shall conduct a site /sites visit of the project completed location/locations if deemed necessary and the agency shall render assistance for such visits.

## **9. SELECTION OF FIRMS**

A duly constituted technical evaluation committee constituted by CDIT shall examine the application to determine whether the documents submitted are complete, whether required information has been provided as underlined in the EOI response documents, whether the documents have been properly signed, and whether response to EOI is in order and meets the technical and non-technical criteria laid down in the tender called by the Police Department.

The eligible agencies shall be shortlisted based on the documents submitted in accordance with evaluation parameters defined by C-DIT and most apt for the work and C-DIT shall invite financial proposal in sealed cover form from the technically qualified agencies. Upon receipt of the financial proposal, C-DIT shall proceed to select as JV partner the agency with L1 rates, execute a JV agreement and will finalise and submit the tender to the State Police Department as per norms.

The financial rates from the technically qualified agencies shall be opened by authorized C-DIT personnel and L1 rates identified and the JV partner selected based on L1 only. The rates shall not be published before the closing date of the tender invited by the Police Department so as to ensure the secrecy of bid rates. However, the rates given by agencies shall be maintained in a sealed cover after identifying L1 and the same shall be published after the closing date of the e-tender as stated.

If the consortium wins the bid, the agency shall work cohesively and in close coordination towards completing the project within the scheduled **deadline of the work**.

The role of C-DIT as the prime bidder will be to function effectively as the Project Manager for the co-ordination with the client, the SI and the OEMs, involved towards the timely completion of work ( installation and maintenance) and to liaison with the Police Department as the Primary bidder.

Payment to JV partner shall be governed by the conditions of agreement executed between CDIT and the JV partner and subject to receipt of payment from the Police Department, if work is awarded

## FORM 1 –AGENCY DETAILS

(To be filled in by the agency)

1.	Name of the Agency	
2.	Address of the Registered Office (Copy of the Registration Certificate shall be uploaded)	
3.	Date of Incorporation	
4.	Area of Business	
5.	PAN No	
6.	GST Registration No	
7.	Name of the proposed OEM (incorporate letter from OEM)	
8.	Name and Address of Office in Kerala	
9.	Contact Details Name Designation Mobile Land Phone Email	
10.	Number of Support Centres in Kerala (Attach the details of district level contact persons)	
11.	Name and Designation of the authorised signatory	

Documentary evidence for the bid qualification requirements are to be submitted along with this document and the details furnished above are true and correct.

Signature of Authorised Signatory  
Name & designation

## FORM 2 – FINANCIAL INFORMATION

I. Financial Analysis - Details to be furnished duly supported by figures in balance sheet/profit & loss account for the last three years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

### Years

Financial Year	Income	Expenditure	Profit/Loss	Remarks
2018-2019				
2019-2020				
2020-2021				

i. Gross Annual turnover ::

ii. Profit /Loss:

Signature of Chartered Accountant with seal

Signature of Authorized Signatory

**FORM 3 - DETAILS OF WORKS OF SIMILAR NATURE COMPLETED DURING THE  
LAST SEVEN YEARS ENDING LAST DAY OF DECEMBER 2021.**

(To be filled in by the agency)

**Name of Agency:** .....

Sl. No	Name of work/project and location	Owner or sponsoring organization	Cost of work in lakhs of rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/arbitration cases in progress with details*	Name and phone no of the officer in charge	Remarks
1	2	3	4	5	6	7	8	9	10

Note:-

- For those works included in this form which are to be considered for basic eligibility criteria,
- Work completion certificate issued by the client should be attached

**Signature of Authorised Signatory**

**Name:**

**Designation:**

**Agency:**

## FORM 4 - PROJECTS UNDER EXECUTION OR AWARDED

(To be filled in by the agency)

Name of Agency: .....

Sl. No	Name of work/ project and location	Owner or sponsoring organization	Cost of work in lakhs of rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/ arbitration cases pending/ in progress with details	Name and phone no of the officer in charge	Remarks
1	2	3	4	5	6	7	8	9	10

Note: Copy of the Work Orders shall be produced

**Signature of Authorised Signatory**

**Name:**

**Designation:**

**Agency**

**FORMS 5 - OEM certificate of eligibility, OEM approved SI certificate  
& MAF certifications**

(To be filled in by the agency and supporting documents to be attached )

**Name of Agency:** .....

**OEMS from whom MAF is produced :**

- 1
- 2
- 3
- 4
- 5
- 6

**IMPORTANT :**

- The Agency shall, along with the MAFs as above, submit a certificate from the CCTV camera OEM that they are an OEM approved System Integrator for implementing CCTV solutions.
- The CCTV camera OEM's certificate, detailing with documents, proof of eligibility of the OEM as per qualification criteria stipulated must also be attached .
- In the absence of MAF certifications, OEM approved SI certificate and the OEM's own eligibility criteria documents, the EOI shall be summarily rejected.



## FORMS - 6

### BOM Make & Model details

The below appended Make/model form should be attached with duly filled-in- details

SI No	Item	Quantity	Make / Model Offered	Whether compliant with Police tender spec ( Yes/No)
1	2	3	4	5
1.	4MP IP Bullet Camera with WDR. b) vari focal	11 1		
2.	64-Ch NVR with 16 SATA Port (Back up for 18 months)	1		
3.	8 TB HDD	16		
4.	24 Port PoE Switch- 24 port Giga byte PoE Switch with 190W	1		
5.	43 " LED TV	1		
6.	2 KVA UPS with minimum 8 hours battery back-up- 2 KVA UPS with Two Nos. of 150 AH batteries (or better) For at least 8 hrs Battery back-up	1		
7.	15 U Rack- 15 U Rack with fan for mounting NVR &PoE Switch and all Accessories	1		
8.	Cabling by CAT-6 UTP cable in ISI marked PVC conduit	1		
9.	Miscellaneous- Other Items mentioned in the BoQ SPD Earthkit			
10.	i7 Computer. Details are separately enclosed (for District Head Quarters)	1		

11.	Central Monitoring Software (CMS)/ VMS (Video Management Software) (for District Head Quarters)	1		
12.	2 KVA UPS with 2 Nos. of 150 AH batteries (or better) For at least 8 hrs back-up. (for District Head Quarters)	1		

Signature of Authorised Signatory

Name:

Designation:

Agency:

## ANNEXURE I - ( Copy of Tender Document)

**BOQ 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.	<b>Details are separately enclosed</b> 12 Cameras per each PS	<b>11+1</b>
2	64-Ch NVR with 16 SATA Port (Back up for 18 months)	<b>Details are separately enclosed</b>	<b>1</b>
3	8 TB HDD	<b>Details are separately enclosed</b> 16 HDD PER NVR	<b>16</b>
4	24 Port PoE Switch	24 port Giga byte PoE Switch with 190W	<b>1</b>
5	43 " LED TV	<b>Details are separately enclosed</b>	<b>1</b>
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>	<b>1</b>
7	15 U Rack	15 U Rack with fan for mounting NVR &PoE Switch and all Accessories	<b>1</b>
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)**

<b>SL. No</b>	<b>Description</b>	<b>Qty</b>
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
	<b>Item Name</b>	4MP Bullet Professional/ Project series camera with OEM Warranty for 5 years	
<b>1</b>	Lens Type	Fixed 3.6mm	
<b>2</b>	Image Sensor :	1/3" Progressive Scan CMOS or better	
<b>3</b>	Min. Illumination -	Color: 0.2Lux@F2.0 and 50 IRE, B/W: 0Lux with IR ON or better	
<b>4</b>	WDR	120dB	
<b>5</b>	IR Distance	Min Up to 50m or better	
<b>6</b>	S/N Ratio	>=50Db	
<b>7</b>	Noise Reduction	3D DNR	
<b>8</b>	Resolution	Minimum Up to 2688x1520	
<b>9</b>	Video Compression	H.265+ H265&H 264MJPEG	
<b>10</b>	ONVIF Profile	ONVIF profile S and Profile G compliant	
<b>11</b>	Minimum No of Streams	3	
<b>12</b>	Main Stream Resolution	Main Stream: 2688 x 1520 / 2304 x 1296 / 1920 x 1080 / 1280 x 960 / 1280 x 720@ (1 ~ 25/30 fps)	
<b>13</b>	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)	
<b>14</b>	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)	
<b>15</b>	Audio Interface	Line In/ Out (In- built Microphone)	
<b>16</b>	Ethernet Port	10 Base-T / 100 Base-TX Ethernet (RJ-45)	
<b>17</b>	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	
<b>18</b>	Storage	Micro SD Card Support 128 GB or more	

<b>19</b>	Lightning and surge protection( Inbuilt or External)	4000V Lightning-proof, 2000V Surge-proof	
<b>20</b>	Power consumption	10W MAX with IR ON	
<b>21</b>	Ingress Protection	IP67 rated for Weather resistant performance.	
<b>22</b>	Impact Resistance	IK10 rated vandal proof	
<b>23</b>	Event	No SD card, SD card error, Capacity warning, Network disconnection,IP conflict, Illegal access	
<b>24</b>	Security	Must support image overlay watermarking	
<b>25</b>	Certification	CE, UL,FCC, BIS	
<b>26</b>	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	
<b>1</b>	Lens Type	2.7mm ~13.5mm, Motorized F1.5	
<b>2</b>	Image Sensor :	1/3" Progressive Scan CMOS or better	
<b>3</b>	Min. Illumination -	Color: 0.2Lux@F2.0 and 50 IRE, B/W: 0Lux with IR ON or better	
<b>4</b>	WDR	120dB	
<b>5</b>	IR Distance	Up to 60m or better	
<b>6</b>	S/N Ratio	>=50Db	
<b>7</b>	Noise Reduction	3D DNR	
<b>8</b>	Resolution	Minimum Up to 2688x1520	
<b>9</b>	Video Compression	H.265+ H265&H 264MJPEG	
<b>10</b>	ONVIF Profile	ONVIF profile S and Profile G compliant	
<b>11</b>	Minimum No of Streams	3	
<b>12</b>	Main Stream Resolution	Main Stream: 2688 x 1520 / 2304 x 1296 / 1920 x 1080 / 1280 x 960 / 1280 x 720@ (1 ~ 25/30 fps)	

<b>13</b>	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)	
<b>14</b>	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)	
<b>15</b>	Audio Interface	Line In/ Out (In- built Microphone)	
<b>16</b>	Ethernet Port	10 Base-T / 100 Base-TX Ethernet (RJ-45)	
<b>17</b>	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	
<b>18</b>	Storage	Micro SD Card Support 128 GB or more	
<b>19</b>	Lightning and surge protection( Inbuilt or External)	4000V Lightning-proof, 2000V Surge-proof	
<b>20</b>	Power consumption	10W MAX with IR ON	
<b>21</b>	Ingress Protection	IP67 rated for Weather resistant performance.	
<b>22</b>	Impact Resistance	IK10 rated vandal proof	
<b>23</b>	Event	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access	
<b>24</b>	Security	Must support image overlay watermarking	
<b>25</b>	Certification	CE, UL, FCC, BIS	
<b>26</b>	Warranty	5 Years Warranty	

### 3) NVR (NETWORK VIDEO RECORDER)

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

#### 5) MONITOR MOUNTS

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

#### 6) 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) 11<sup>th</sup> 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

#### 7) 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.

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

### 8) 24 PORT PoE SWITCH

<b>Sl. No.</b>	<b>24-port 1000base-T Gigabit PoE Smart Switch</b>		<b>Compliance</b>
1	<b>Physical Specifications</b>	24 # 10/100/1000 Base-T auto-sensing PoE+ ports,2 dedicated 100/1000 Base-X Fiber SFP ports	
2	<b>Performance Specification</b>	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	<b>IEEE Network Protocols</b>	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	<b>Network Security and Traffic</b>	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	<b>L2 Services</b>	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	<b>Network Monitoring and Discovery Services</b>	802.1ab LLDP	
		SNMP V1, V2, V3	
		RMON 1,2,3,9	
7	<b>Quality of Service(QoS)</b>	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	<b>Management</b>	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	<b>LEDs</b>	Per port: Speed, Link, Activity	
		Per device: Power, Fan and PoE Power Status	
10	<b>Environmental Conditions</b>	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	<b>Certifications</b>	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	<b>Warranty and Support</b>	5 Year hardware replacement warranty	

### 9) 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	

### 10) 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	

### 11) 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	



## 12) 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-snap 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	

### 13) 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° or a 90° 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:	<p>a. Meets or exceeds the mechanical, electrical, and clearance specifications in FCC Rules and Regulations, Part 68, Subpart F</p> <p>b. Meet or exceed the Category 6 requirements in ISO/IEC 11801, CENELEC EN 50173, and TIA/EIA568B</p> <p>c. The 8-pin modular (RJ-45) jacks shall comply with IEC 60603-7-4.</p>
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

## 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	

### 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 <sub>n</sub>	30 KA (8/20 μ sec)	50 KA(8/20 μ sec)	
Maximum Discharge Current I <sub>max</sub>	50 KA (8/20 μ sec)		

Lightning Impulse Current	7 KA(10/350 $\mu$ sec)	25 KA(10/350 $\mu$ sec)	
Voltage Protection Level	$\leq$ 1300 volts	$\leq$ 1200 Volt	
Response Time	< 25 nano seconds	< 100 nano seconds	
Operating temperature range	-40 $\mu$ C to +80 $\mu$ 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.		

#### 14) 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

### 15) 2KVA Sine Wave UPS With 150 Ah Battery 2 Qty.

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

### 16) HDMI Cable

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

### 17) VMS Software 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.
	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.

## DETAILED 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 police stations as specified by Police Headquarters to meet any shortfall in a particular police station. 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
3. The above locations are indicative and may change from site to site, based on its structure.
4. 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.
5. 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.
6. 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.



7. The Camera Video feeds have to be transmitted to the respective District Headquarters for remote monitoring 24x7.
8. 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.
9. 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.
10. 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).
11. 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.
12. 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.
13. 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.
14. 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.
15. The successful vendor must supply all the items strictly in accordance with the specifications as mentioned in this document.
16. The vendor shall act as a single point of contact to organize and manage the entire scope and phases as per the Project requirement.

17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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.

24. All the equipments should be latest and of the prevailing/current standard production of the manufacturer at the time of the proposal.
25. 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 Compliant and able to be integrated seamlessly with other 3<sup>rd</sup> party solutions.
26. The scope of work includes all necessary software that is needed to the system for its completeness and functional working at each location.
27. 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.
28. 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.
29. 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.
30. 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.
31. The vendor should provide the necessary documentation including the Design and Technical Configurations of the System.
32. Successful vendor should provide training to the team identified by the user for operation of the CCTV System and handhold on job.
33. 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.
34. The successful bidder shall provide a centralized complaint registration facility over phone and email (24x7).
35. The total cost of the project has to be included in the financial bid.

36. 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 Equipment 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 equipment 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:

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.

8. 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	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

- a) The vendor shall provide all the software/firmware updates to the supplied equipment during the warranty period.
- b) 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.
- c) The user is not responsible for any costs incurred by the vendor for meeting the obligations of the warranty.

- d) The vendor is responsible for the warranty of any third party products included as buyouts or sub systems in the supplied equipment.
- e) The vendor shall do a preventive maintenance of the supplied equipment once in four months unless there is a written directive from the User.
- f) 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.
- g) 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.
- h) 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.
- i) 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.