

CITY CCTV SURVEILLANCE – NABARANGPUR TOWN



PROPOSAL FOR SELECTION OF MASTER SYSTEM
INTEGRATOR FOR IMPLEMENTATION OF INTEGRATED
CCTV SURVEILLANCE PROJECT
NABARANGPUR, ODHISHA

SCOPE OF WORK

(Functional and Technical Requirements)

RFP Number: 53/NM-2022 Dt.10.01.2022

Prepared by: Nabarangpur Municipality, Odisha

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This RFP may not be appropriate for all persons, and it is not possible for E.O, Nabarangpur Municipality, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads Or uses this RFP. The assumptions, assessments, statements, and information contained in the Bidding Documents, may not be complete, accurate, adequate, or correct. Each Bidder should, therefore, conduct its own investing actions and analysis and should check the accuracy, adequacy, correctness, reliability, and completeness of the assumptions; assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

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The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Authority, or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the Authority shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conductor outcome of the Bidding Process.

1. Introduction

The key objective of this project is to establish a collaborative frame work where input from local police stations will get monitored at the center location for smooth functioning of the town. The project is to be implemented by **Nabarangpur Municipality** and maintained by **Nabarangpur Police Office**, Odisha with the help of local police for Smooth functioning of the Town operations. Command & Control System further will have to converted to actionable intelligence, which would be propagated to relevant stake holder sand citizens in coordinated and collaborative manner. The main objective of the solutions to provide simple, robust system and the key outcomes expected to be achieved by the proposed interventions:

- a. Improved visualization of emergency in the city
- b. Efficient traffic management
- c. Enhanced safety and security
- d. Better management of utilities and quantification of services
- e. Better Emergency Response
- f. Efficiency in improvement in public service delivery
- g. To integrate 2 or more remote police station to work in a collaborated environment.
- h. Reduce time to close the cases with the surveillance-based video evidence.
- i. System should be scalable and in future can be integrated with the state command & control room.

To meet the objective following systems proposed

- j. Command and Control Centre
- k. CCTV based Surveillance System
- l. Automatic Number Plate Detection System
- m. Dedicated wired secured network
- n. GPS system for vehicle tracking

1. Solution Components & services overview

The selected MSI shall ensure the successful implementation of the proposed Town Surveillance project implementation as per the scope of work detailed in this RFP. Any functionality not expressly state din this document but

required to meet the needs of the requirements of the project to ensure successful operation soft he system shall essentially be under the scope of MSI and for that no extra charges shall beadmissible.MSI shall deliver the systems and components as per the techno-functional specifications as per the Annexure-D MSI's scope of work shall include but will not be limited to the following broad areas.

- a. Assessment, Scoping and Survey Study: Conduct a detailed assessment, survey and scoping study and develop a comprehensive project plan.
- b. Design a dedicated wired and wireless secured and stable network, Network connectivity with in the city and the other sites for the scope items mentioned in this Volume of the RFP
 1. Conduct site survey for finalization of detailed technical architecture, final Bill of Quantities, and project implementation plan
 2. Conduct Site Surveys to identify the need for the site preparation activities
- c. Design, Supply, Configuration, Installation, Implementation, Testing and Commissioning of the components/systems as mentioned in Tender Boq.
- d. To separate setup and 2 remote control stations. These remote stationed will have viewing & recoding rights only and in case of any investigation their rights will be reevaluated with the situations.
- e. MSI will provided special field enclosures with cooling arrangement for mounting UPS, Switches, and other components with cooling arrangements.
- f. MSI will have to make necessary survey to provide dedicated secured network for
 1. Surveillance cameras (In case of network failure, local storage should be available in the camera end and auto synchronization should happened when network resumes.
 2. Traffic Management System
 3. Public Management System
 4. Automatic Number Plate
- g. MSI will have to handover operational manuals, training documents and support during warranty and comprehensive maintenance support.MSI should have their local office setup for smooth warranty operation. MSI will get additional weightage during evaluation.

Project Milestone & Payment Schedule

SL NO.	MILESTONE	DELIVERABLES	TIMELINES	MILESTONE PAYMENT
1	Project Initiation phase	<ul style="list-style-type: none"> Submission of detailed site survey reports Detailed Project Plan including Operations management, Contract management, Risk management, Safety and quality implementations plan. Detailed plan for installation of ground level solution components and network design. 	T+1week	10%of the contract value (without AMC Value) as mobilization advance against ABG.
	Supply of components	<ul style="list-style-type: none"> Supply of IT &Non IT assets which are proposed by the MSI as part of the project E.O,Nabarangpur Municipality can undertake an inspection of the IT& Non- IT assets to ensure compliance of the equipment supplied 	T+9 Weeks	60% of the contract value without AMC Value on delivery of materials
	Installation & Commissioning	<ul style="list-style-type: none"> Commission in gof the ground level IT & Non IT assets which are installed Commissioning of the Control room IT & Non- IT components Commissioning of Field equipment's 	T+10 Weeks	20% of the contract value (without AMC Value) on I&C and commissioning
	Go-Live phase and Handover Phase	<ul style="list-style-type: none"> Go Live of the project Submission of the warranty certificates & licenses Undertake the services official inauguration with all handing over compliances and documents 	T+11 Weeks=W	10% of the contract value PBG of Equivalent value
	Operation &Maintenance phase	<ul style="list-style-type: none"> Provision of the O&M services as per the terms & condition of the RFP 	W+12 Months=M	Performance BG will be returned on completion of successful completion of 24 months warranty

Annexure- A

Details of locations for commissioning of assets

SL. NO.	LOCATIONS	BULLET CAMERA	PTZ	ANPR
1	Majhiguda Chowk on NH- 26(entry to town from Papadahandiside)	03	0	02
2	Indirabati river check point on NH- 26 (entry to town fromBoriguma side)	02		02
3	Beheraguda Chowk (entry to town from Kodinga/Kosagumudaside)	02		02
4	Rangamatiguda Chowk near new Court building.(entry to town from Dangarbhaje/Tentulikhunti side)	02		02
5	Near Collector Residence/ DPO Road	02		
6	PWD I.B, Chowk/ R.O Chowk	03	0	
7	Christian Medical Chowk on NH- 26	02		
8	Tribeni Chowk	04		
9	LIC Office Chowk	03		
10	Women's College Chowk	03		
11	Fire Station Chowk	03		
12	Ichhabatiguda/MTPL Road	02		
13	MTPL Chowk	03		
14	Ram Mandir Chowk	03		
15	NuabandhSahi near Hanuman Temple	03	0	
16	RMC Mill/ C.T.School Chowk	02		
17	B.B.College/ Court	02		
18	R.D Office/ Medical/Dahana Road Chowk	03		
19	Dasrapada/ Podalguda road	02		
20	Axis Bank/ Mira Auto Chowk	03		
21	Gandhi Chowk	02		
22	NuabandhSahi Chowk/ Main Road on NH- 26	02	0	
23	Andhra Bank/ Jagarnnath Mandir Temple	02		
24	Cinema Hall Chowk near old market	02		
25	Akhandalamani Chowk near Gouda Sahi	02		
26	Maszid Chowk, Pathan Sahi	02		
27	Ambedkar Chowk	03		
28	Gandhinagar Chowk	03		
29	LoharaSahi Chowk	02		
30	Old Police Station near Pvt. Bus Stand	02		
32	Vigilance Office bypass road	03		
33	Near Block Office on NH- 26	02		
34	Additional Nine Location add after inspection	14		
	TOTAL :	93		08



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No 53 /NM-2022

Date: 10 /01 /2022

TENDER CALL/EXPRESSION OF INTREST

On behalf of Executive Officer, Nabarangpur Municipality sealed bids are invited from eligible resourceful, experienced contractors as per the enclosed list (Table -1).

Table – 1: **Date & Time Schedule**

1	Name of the work	Supply, Installation and Commissioning of CCTV Surveillance System for Nabarangpur , Odisha
2	Estimated Cost	Approx. 1 Crore
3	Period of completion	1 Month
4	Earnest Money (1 % of EC)	Not required as per Works Deptt Letter No-18281/W Dt.31.12.2021
5	Tender Paper Cost (Non-Refundable)	10,000/-
6	Tender Publication Date	10/01/2022
7	Selling of Document	10/01/2022 to 17/01/2022 (10.00 AM to 5.00PM)
8	Last Date of Bid Submission	17/01/2022 till 5.00PM
9	Opening of Technical Bid & Financial Bid.	18/01/2022 till 5.00PM

Details of the projects and all terms & conditions can be availed from the Municipality Office, Nabarangpur from Dt.10/01/2022 to 17/01/2022 in official hour. The last date for receipt of the tender complete in all respect 17/01/2022 up to 5.00PM through **Registered Post / Speed Post** only. All other mode of submission of Tender will be rejected.

1. For Participating in the tender, the Tenderer shall have to pay the cost of Tender Paper as indicated in Table -01 in shape of D.D/Bankers Cheque in favor of **Executive Officer, Nabarangpur Municipality, Nabarangpur.**
2. A prospective Tenderer shall be allowed to participate in the job either in the capacity of individual or as a partner of a firm. If found to have applied severally in a single job all his applications will be rejected for that job. The Security Deposit Money of the all the unsuccessful tenderers, will be refunded after issuing work order of the said work.

3. Eligibility criteria for participation in tender:

The technical evaluation will be done on the following parameters and offers from firms not conforming to any of these parameters will be rejected.

- a) The bidder should have valid GST Registration Certificate, PTax & PAN. Bidder shall have to submit photocopy of the documents.
- b) The bidder should have at least 4 years' experience of CCTV Surveillance System installing in major urban areas. Necessary documents (Work Order/Completion Certificate of Govt. Organization) has to be submitted.
- c) Bidder with experience of working with Police in similar projects will be given additional weightage.
- d) The bidder should have executed at least three or more similar nature projects not less than 4 Cr commutative in last 5 years.
- e) Bidder's experience working with Police Department of any state will be preferred.
- f) The bidder should have total turnover of not less than Rs. 4.00 Crore in the minimum three financial years. Bidder shall have to Audited Balance Sheet of minimum 3 financial years (2017-18, 2018-19, 2019-20).
- g) Manufacturer's tender specific authorizations (MAF) for main items i.e., NVR, Camera, ANPR, Video Display, Field Switches, UPS, Active & Passive Network components**
- h) Cameras & recording servers should be UL listed, CE and FCC Certified.
- i) Camera Test Report of UL accredited lab with lab accreditation certificate.
- j) The bidder should be an ISO Certified organization. Copy of valid Certificate is to be submitted
- k) The bidder should be MSME Registered unit.
- l) The bidder shall not have been blacklisted by any State/Central Government or PSU Organization or bilateral/multilateral funding agencies for breach of ethical conduct or fraudulent practices as on date of submission of the proposal. Declaration on bidder's letter head to be submitted.
- m) MSME/NSIC Registered units should have Relevant Documents to be submitted along with Technical Bid.
- n) NVR, Camera & Field switch should have from same OEM for better performance and seamless connectivity
- o) All technical compliance to be signed & stamp by OEM on their letter head.
- p) Camera & NVR OEM should be in Top 5 IHS Brand, Documentary Prof Required.
- q) Camera & NVR OEM should have direct presence in India from last 3 years or more, Documentary Prof Required.
- r) Camera & NVR OEM should have factory in India or any third-party arrangement, Documentary Prof Required.
- s) Camera & NVR OEM should have supplied 5000 + Cameras in Government sector, Documentary Prof Required.
- t) Camera & NVR OEM's Product should have UL, Ce, FCC Certified.
- u) Camera & NVR OEM should not be debarred or blacklisted from any government institution in India (Non recommendation of any department of any brand also will not be allowed to participate), if participated and found documentary evidence Municipal corporation, Municipality has the rights to Black list and Banned the OEM.
- v) Passive OEM should be ISO 9001:2015 and ISO 14001:2015

- w) Passive OEM should have local sales representative and service Centre at end customer state.
- x) Passive OEM should be a Company registered in India under the Indian Companies Act.
- y) Passive Offer products should be Make in India.
- i) Passive Offer Products should be RoHS compliant.
- ii) All copper and fiber cable and component from same OEM

For Display OEM,

1. Bidders need to submit Bid Specific MAF
2. OEM must have R & D Centre in India.
3. OEM must have Service Centre in Odisha from last 10 year
4. OEM must have 9001: 14001 certificates
5. OEM must have facility of colour calibration using mobile technology
6. Product should not be manufactured in any country sharing land border with India
7. OEM Should have toll free call Centre number for service call registration

4. Submission of Tenders

Please enclose the TECHNICAL BID in a separate sealed Envelope (Marked as Envelope-1) , FINANCIAL BID in a sealed Envelope (Marked as Envelope-2) and all the two sealed envelopes should be placed in a Third Envelope (Marked as Envelope – 3) sealed and submitted to the undersigned super scribing with “Tender for Supply, Installation and Commissioning of CCTV Surveillance System for Nabarangpur, Odisha”.

The Tender Inviting Authority to reserve the right to accept or reject any tender application without assigning any reason whatsoever.

Note

- i)The Tender Inviting Authority to reserve the right to accept or reject any tender application without assigning any reason whatsoever.
- ii) If any contractor is selected for qualifying tender, he/she has to submit copy of relevant Government Order needs to be furnished.
- iii) Tenders will be summarily rejected if any item in the statutory cover is missing.
- iv) In case of any inadvertent typographical mistake the same to be treated to be Corrected as to confirm to the prevailing relevant schedule of rates or technically Sanctioned estimate.
- v) Necessary deduction i.e. GST, IT, CESS etc. will be made as per relevant Govt. order.

b. Non -Statutory Technical cover containing,

- i)Up to date Professional Tax (PT) Clearance receipts and ITPAN, up to date Income Tax Return receipts valid up to the date of opening of the tenders. Application for Such clearance addressed to the competent authority may also be considered.

- ii) Up to date GST Registration Certificate and up to date and valid Return Certificate of the last submitted of the current financial year.
- iii) Registered Deed for Partnership Firm.
- iv) Work Order and Work Completion Certificate.
- v) Up to date audited balance sheet.
- vii) Experience profile should be furnished in given format in Annexure-A in the end of this page.

THE ABOVE STATED NON-STATUTORY TECHNICAL DOCUMENTS SHOULD BE ARRANGED IN THE FOLLOWING MANNER

Sl. No	Category Name	Sub Category Description	Details
A.	CERTIFICATES	CERTIFICATES (ALL CERTIFICATE SHOULD BE UP TO DATE)	1. GST Registration Certificate 2. PAN Card 3. P Tax Registration Certificate 4. Income Tax Returns
B.	COMPANY DETAILS	COMPANY DETAILS	1. Proprietorship Firm (Trade License) 2. Partnership Firm (Partnership Deed, Trade License) 3. LTD. Company (Registration Certificate, Trade License) 4. Co-Operative Society (Society Registration Certificate) Bye Laws, up to date Audited Balance Sheet. 5. Power of Attorney (Registered)
C.	CREDENTIAL	Credential	1. Completion Certificate for Similar Nature of Work Done

NOTE: FAILURE OF SUBMISSION OF ANY ONE OF THE ABOVE-MENTIONED DOCUMENTS WILL RENDER THE TENDER LIABLE TO REJECT.

5. Financial Proposal:

- i) The Financial proposal should contain the following documents in one cover (folder) i.e. Bill of quantities (BoQ). The contractor is to quote the rate (item wise against the total items cost Of the intended job through price bidding in the space marked for quoting Rate in the BOQ.
- ii) Only signed copies of the above documents are to be submitted.

6. Penalty for suppression /distortion of facts:

If any Tenderer fails to produce the Original hard copies of the documents or any other documents on demand of the Tender Inviting Authority within a specified time frame or if any deviation is detected in the hard copies or if there is any suppression, the Tenderer will be suspended from participating in the tenders one-Tender plat

form for a period of 3(Three) years. In addition, his user ID will be deactivated, and it will stand forfeited. Besides, the Administrator, Nabarangpur may take appropriate legal action against such defaulting Tenderer.

7. Rejection of Bid

The employer (Tender accepting authority) receives the right to accept or reject any bid and to cancel the bidding process and reject all bids at any time prior to the award of contract without thereby incurring any liability to the affected Tenderers or any obligation to inform the affected Tenderer or Tenderers.

8. Award of Contract

The Tenderer whose Bid has been accepted will be notified by the Tender Inviting & Accepting Authority. The notification of award will constitute the formation of the Contract. The Agreement in Municipal Tender Form with incorporation of all the required documents, i.e., NleT including all its addenda & corrigendum, Application and Financial Offer on Bill of Quantities (BOQ) will be executed between the Tender Accepting Authority and the successful Tenderer. The Tender Inviting Authority may ask for submission of the hard copy of all the uploaded documents of all eligible tenderers along with original, before awarding contract.

9. Formalities

During execution if any approval from the competent authorities is required the same has to be obtained by the tenderer/agency.

10. Specification

Before quotation of rate the tenderer should inspect the site and get fully acquainted with all physical and technical parameters related to the successful completion of the work.

11. Submission of DPR

After qualifying the tender, the L1 bidder has to submit the complete Detail Project Report (DPR) to the tender inviting authority.

12. Mode of Payment

Payment will be made as per the availability of the fund from the Municipality office for the respective project.

13. Security Deposit

The successful bidder has to submit the Performance Security Deposit amounting to 10% (ten percent) of the bidding value of the work in form of Bank Guarantee or the amount will be deducted from the running account bill of the tenderer. No interest will be paid on Security Deposit.

14. Warranty

All the items of this tender should be under warranty for 24 months with Comprehensive maintenance of Two year.

- 15. E.O, Nabarangpur Municipality** has the right to cancel or modify the tender without citing the reason thereof.
- 16.** All disputes will be settled within the jurisdiction of the Court of Nabarangpur.

17. Supplementary/Additional items of Works:

Notwithstanding the provisions made in the related printed tender form, any item of work which can legitimately be considered as not stipulated in the specific price schedule of probable items of work but has become necessary as a reasonable contingent item during actual execution of work will have to be done by the Contractor, if so directed by the Engineer-in-Charge and the rates will be fixed in the manner as stated below-

- (a) Rate of Supplementary items shall be analyzed in the 1st instant extended possible from the rates of the allied items of work appearing in the tender schedule.
- (b) Rate of supplementary items shall be analyses to the maximum extent possible from rates of the allied items of work appearing in the schedule of rates of probable items of work as will be in force at the time of NleT.
- (c) If the rates of the supplementary items cannot be computed even after application of clauses stated above, the same shall be determined by analysis from market rates of material, Labour and carriage cost prevailing at the time of execution of such items of work. Profit and overhead charges (both together) @ 10% (ten percent) will be allowed only. The contractual percentage will not be applicable.
- (d) Black market rates shall never be allowed.
- (e) It may be noted that the cases of supplementary items of claim shall not be entertained unless supported by entries in the Work Order Book or any written order from the tender accepting authority.

**Executive Officer
Nabarangpur Municipality**

ANNEXURE-A

Experience profile (in non-Statutory cover)

List of projects completed that are similar in nature to the works executed for the last 4 (four) financial years i.e. from FY 2018-2021

Name of Work	Name & Address of Agency	Value of the Work	Date of Completion

ANNEXURE – B
BILLS OF QUANTITY (BoQ)

Bills Of Quantity For Nabarangpur Town Area

SL. NO.	ITEMS DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT WITHOUT GST
1	4Mp V/F Bullet Camera as per the specification with micro storage 256GB(can store footage in case of network failure) and inbuild analytics like face Recognitions - Refer Technical Spec	Nos	93		
2	Storage/Recorder Server, hard discs, software with Red 10 and above with redundancy N+M. In case failure auto changeover is must. 30 days Storage to be calculated as per the technical requirements. Refer Technical Spec	Set	5		
3	2Mp ANPR/Enforcement Camera with necessary software and analytics as per technical specs	Set	8		
4	4 port 10/100/1000 L2 Manageable POE Switch with 48v 7ADin-rail industrial grade Power supply	Nos	42		
7	IP 66 JB with cooling arrangement and Temperature Controller- as per technical specification	Nos	40		
8	24U Rack Fully Loaded	Nos	1		
9	L2 Manageable OLT Question	No.	1		
10	24 Port L3 Fully manageable switch	Nos	1		
11	16 Port LIU	Nos	1		
12	Armour OFC cable with Laying & all accessories as per technical specs and site requirements	Mtr.	22,000		
13	Cat6 Face plate keystone back box set per the tender technical specifications	Nos.	30		
14	CAT-6 UTP/STP (As per project technical requirements)	Mtr	2200		
15	2 sq.mm 3core Power Cable as per the system requirements.	Mtr.	2,500		
16	SPD (Surge Protector Device)	Nos	40		
17	1 KVA Online UPS Battery Backup one Hour as per the tender specifications	Nos	40		
18	6 KVA Online UPS with battery Backup as per the tender specifications	Nos	1		
19	Display For Control Room 65" as per the tender specifications	Set	4		
	TOTAL				

Note: The above-mentioned quantities are tentative only, which may be increase or decrease as per requirement. Payment will be done on the actual consumption of the quantity.

Place:

Date:

Signature of bidder
With seal

ANNEXTURE- C

Minimum Techno-Functional Requirements

The following section describes the techno-functional specifications of the project solution components. The bidder must make sure all the technical parameters are met during the submission of bidding, however under no circumstances the following mentioned Techno-functional specifications can be dis-regarded.

Annexure- C.1.

Bullet Camera

Category	Parameter	Description	Compliance Yes/No
Camera	Image Sensor	1/2.7" 4 Megapixel progressive scan CMOS	
	Effective Pixels	2592 (H) × 1944 (V)	
	Electronic Shutter Speed	Auto/Manual, 1/3 s–1/100000 s	
	Video Frame Rate	Outputs max. 4MP (2592 × 1944)@20 fps	
	Min. Illumination	0.003 Lux@F1.3	
	IR Distance	120 m (394 ft)	
Lens	Lens Type	Motorized vari-focal	
	Mount Type	Board-in	
	Focal Length	7 mm–35 mm	
	Field of View	H: 31°–9°, V: 23°–7° (2592 × 1944)	
	Aperture Type	Auto (HALL)	
	Wavelength	845nm or Better	
Video	Video Compression	H.265; H.264; H.264H; H.264B; MJPEG	
	Smart Codec	Smart H.265+, Smart H.264+	
	Stream Capability	3 streams	
	WDR	120 dB or Better	
	HLC	Supported	
	Defog	Supported	
	Smart Illumination	Supported	
	EIS	Supported	
	Noise Reduction	3D DNR	
	Privacy Masking	4 areas	
Audio	Audio Input& Output	1/1 channel In/Out	
	Audio Compression	G.711a, G.711Mu, AAC, G.726, G.723	
Network	Network	RJ-45 (10/100 Base-T)	
	Protocol	IPv4;IPv6;HTTP;HTTPS;TCP;UDP;ARP;RTP; RTSP;RTCP;RTMP;SMTP;FTP;SFTP;DHCP; D NS;DDNS;QoS;UPnP;NTP;Multicast;ICMP;IG MP;NFS;PPPoE;802.1x;SNMP	
	Interoperability	ONVIF(Profile S/Profile G/Profile T), CGI, Milestone, Genetec	

	Edge Storage	NAS; FTP; SFTP; Micro SD card 256 GB included	
Alarm	Alarm Input & Output	1 channel in: 5mA 3V–5V DC 1 channel out: 300mA 12V DC	
	Alarm Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly,	
Power	Power Supply	DC 12V (±30%), PoE (802.3af)	
Environment	Operating Temperature	-30° C to +59° C (-22° F to +139° F)/Less than 95% RH	
	Protection	IP67, IK10	
Intelligent function	Face Detection	Face detection; track; optimization; snapshot; report high quality picture; face enhancement; face exposure; face attribute extract, 6 attributes and 8 expressions: Gender, age, glasses, expressions (anger, calm, happiness, sadness, disgust, surprise, confusion, and fear), mask, beard; face matting setting: face, single inch photo; three snapshot methods: real-time snapshot, optimization snapshot, quality priority; face angle filter; optimization time setting	
Intelligent function	People Counting	Support the counting of enter number, leave number, and pass number, and displaying and outputting yearly/ monthly/ daily reports. Support the counting of number in area, and 4 rules configuration. Count number of people or stay time and link alarm.	
General Intelligence	Event Triggering	Motion detection, video tampering, scene changing, network disconnection, IP address conflict, Illegal Access, storage anomaly.	
	General Intelligence	Object Abandoned/ missing	
Intelligent function	Perimeter Protection	Tripwire; intrusion; fast moving (the three functions support the classification and accurate detection of vehicle and human); loitering detection; people gathering; parking detection	
Certificate	CE	CE-LVD: EN62368-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU	
	FCC	FCC: 47 CFR FCC Part 15, Subpart B	
	UL	UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07	

Signature of bidder
With seal

Annexure – C.2.
Enforcement Camera/ANPR

Category	Parameter	Description	Compliance Yes/No
Basic	Main processor	High-performance embedded processor	
	Image Sensor	1/1.8" CMOS	
	Image Resolution	2688 × 1520	
	Electronic Shutter Speed	1/25 s–1/100000 s (manual/auto)	
	Video Frame Rate	Maximum 25fps; main stream (2688 × 1520 @ 25fps), (1920 x 1080 @ 50/60fps)	
	IRIS Control	Fixed iris/manual iris/auto iris/P iris	
	Lens Type	Vari-Focal	
	Mount Type	On-Boards	
	Focal Length	10 ~ 40 mm or better	
	Video Bit rate	32kbps–32767kbps	
	Picture Encoding Format	JPEG	
	Wavelength	845nm or better	
	Video Compression	H.265/H.264M/H.264H/H.264B/MJPEG	
	White Balance	Auto/ outdoor/ manual/ local white balance/ natural light/ street light	
	Bad Pixel Correction	Supported	
	WDR	90 dB or better	

	Edge Enhancement	Supported	
	Noise Reduction	2DNR/3DNR	
	Composite Image	Supports composing 1, 2, 3, or 4 pictures	
	OSD Overlay	Motor vehicles: Time, location (video channel location), lane (number, direction), plate (number and color), speed, region, vehicle color, vehicle logo, vehicle type Non-motor vehicles: Helmet, passenger overloading	
	Automatic Network Replenishment (ANR)	Platform, FTP (TF card is required)	
	Image Tampering Prevention	Yes. Watermark and verification are available for videos and pictures	
	Drawing Detection Line	Supports automatically drawing detection lines	
	Auto Registration	Supported	
	Target Detection	Motor vehicles and non-motor vehicles	
	License Plate Recognition	Adopts self-developed algorithm to recognize license plates combining numbers and letters	

Intelligence	Vehicle Type Recognition	Vehicle head: Coach bus, medium bus, SUV, MPV, pickup, heavy truck, medium truck, car, van, and light truck Vehicle tail: SUV, car, van, coach bus, pickup, cargo truck, mini truck, tank truck, and mixer truck	
	Motor Vehicle Violation Capture	Overspeed, under speed, wrong-way driving, illegal lane change	
	Non-motor Vehicle Violation Capture	Overloading, not wearing a helmet	
	Traffic Flow Detection	Statistics of vehicle flow, average speed, vehicle type, lane occupancy, average time headway, average queue length, road status, and more; statistics can be exported in Excel	
Ports	Storage	FTP, TF card (maximum 256GB@Class10)	
	Network	1 RJ-45 Ethernet port, 10/100/1000M network transmission	
	RS-485	1 Port	
	RS-232	2 Ports	
	Alarm Input & Output	3/2 Channel Input/ Output	
	Audio Input& Output	1/1 Channel Input/ Output	
Power	Power Supply	12V DC, 36V DC, PoE	
	Operating Temperature	-40°C to +60°C (-40°F to +149°F) or better	
	Ingress Protection	IP67;	
Certificate	Certifications	CE, FCC, UL	

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Annexure-C.3.

Recording Server

(Hard Disk to be calculated for 30 days recording and should be compatible with the recording server with auto failover solution.)

Parameter	Description	Compliance Yes/No
Star Features	Fisheye Dewarp, Smart Track, POS(Optional), N+M Redundancy	
Max HDD	8 SATA III ports, up to 10 TB for a single HDD or better	
Display	2HDMI, VGA	
RAID	0/1/5/6/10/50/60 or better	
USB	2 USB3.0, 2 USB2.0	
Motion Detection	Smart Motion Detection	
Ethernet Port	2 Gigabit Ports	
Alarm In/Out	16/8 Input/ Output	
Audio In/Out	1/1, 2-way	
eSATA/Mini SAS	1	
Power	AC100V~240V<40W(Without HDD)	
Main Processor	Industrial embedded micro-processor	
Video Compression	Smart H.265+/ H.265/ Smart H.264+/ H.264/ MPEG4/ MJPEG	
Intelligent Video	Tripwire, Intrusion, Abandoned/Missing, Scene Change, Face Detection, People Counting, Heat Map, ANPR by camera	
Max Decoding	16ch@1080P	
Max Input/Record	384Mbps/384Mbps	
Operating temperature	-10°C to +55°C (+14°F to +131°F)	
Certifications	CE: EN55022, EN55024, EN50130-4, EN60950-1 FCC: Part 15 Subpart B, ANSI C63.4-2014 UL: UL 60950-1 and CAN/CSA C22.2 No.60950-1	

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VMS TECHNICAL SPECIFICATIONS			
S. No.	Technical Parameters	Descriptions	Compliance (Yes/No)
1	OS	Windows	
2	From	Software	
3	Type of Deployment	Single Server	
4	Cascade As Subordinate Level	Yes	
5	Role & User	ROLE: 20	
		USER: 10 Online Users & 50 Total Users	
6	Recording Plan & Event Plan	Central Recording- UP TO 64 Video Channels	
		Event Rules- Up To 256 Event Sources	
7	Map	Hierarchies= 8	
		Maximum Size of Raster Map- 15MB	
		Number of Raster Maps- Up to 32	
		Number of Resources per Raster Map- Up to 300	
8	Face and Vehicle Watch Lists	Face Watch Lists- 50	
		Total Faces- 5000	
		Faces per Face Watch List- 5000	
		Vehicle Watch Lists-8	
9	Data Storage	Event Records- 200000	
		Face Recognition Records- 200000	
		ANPR Records- 200000	
		Operator Logs-200000	
		Service Logs-200000	
10	Personnel and Vehicle Management	Persons	
		Vehicles	
11	Total Devices	Devices	
12	Video Devices and Channels	Video Devices and Channels	
		Add devices by ONVIF	
		ANPR Channels	
		Face Recognition Channels	
		Video Metadata Channels	
13	Backup and Restore	Manual Backup	
		Auto Backup	
14	Event	Link Video	
		Trigger Snapshot	
		Link PTZ	
		Link Alarm Out	
		Link A&C	
		Link Video Wall	
		Link E-mail	
		Notify User	
		Handle Event	
		Forward Event	

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Annexure- C.4.**Field Switch**

Category	Parameter	Description	Compliance Yes/No
Hardware	PoE	Supported	
	Ethernet Port	4/8 PoE Ports (10/100/1000 Mbps)+ 1 Non-PoE Port(10/100/1000 Mbps)	
	Optical Port	2 Ports 1G SFP Ports	
	Console Port	1	
	Layer	L2	
	Managed	Yes	
	Switching Capacity	14 Gbps	
	Packet forwarding Rate	10.42 Mpps	
	Packet Buffer size	1.75 Mbits	
	MAC Table Size	4K	
	PoE Protocol	EEE 802.3af (PoE); IEEE 802.3at (PoE+); Hi-PoE; IEEE 802.3bt	
	Long Distance PoE Transmission	Supported	
	Jumbo Frame	9,000 bytes	
	Spanning Tree Protocol	ERPS Supported	
	Link Aggregation	Static link aggregation; LACP	
	Security	User management, HTTPS, SSH, SNMP V1/V2C/V3, ACL, 802.1x, Loop protection	
	Power Supply	48 V–57 V DC	
	Operating Temperature	–40 °C to +75°C (–40 °F to +167 °F)	
	Operating Humidity	10%–90% (RH)	
	Lighting Protection	Common mode: 6 kV Differential mode: 4 kV	

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Annexure- C.5.**Display for Control Room**

Parameter	Description	Compliance Yes/No
Diagonal Size	65” Inch	
Panel Technology	SVA or Equivalent	
Resolution	3840*2160	
Brightness(Typ.)	500 nit	
Static Contrast Ratio(Typ)	4000:1	
Viewing Angle	178/178	
Dynamic Contrast Ratio	Mega	
Response Time(G to G)	8ms or less	
Display Colors	16.7 True Colour	
Haze	25%	
Operational Hour	24*7	
Connectivity Input	Video input- HDMI 2.0 (2)	
	Display Port 1.2(1)	
	HDCP input-HDCP 2.2	
	Audio input- Stereo Mini Jack	
	Audio out- Stereo Mini Jack	
External Control	RS232C(in/out) , RJ45	
Power Supply	AC 100 - 240 V~ (+/- 10 %), 50/60 Hz	
Power consumption (Typ)	131 or less	
Operating Temperature	0 °C ~ 40 °C	
Humidity	10 % ~ 80 %	
Key Features	Auto Source Switching & Recovery,LFD Home ,Button Lock,Hot Key Option, Plug & Play (Initial Setting)	
Certification	"BIS, CE, FCC, UL	
Warranty	3 yrs onsite	

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Annexure-C.6.

SPD (Surge Protection system)

SI.	Feature	Technical Specification	Compliance (Yes/ No)
1	Network	230 Volt Single Phase	
2	Maximum Operating Voltage	320 Vac	
3	Temperature Over Voltage	335Vac	
4	Fallow Current (If)	Zero	
	Nominal Discharge Current (In)	20KA	
5	Maximum Discharge Current (In)	40KA	
6	Protection Level	1,5KV	
7	Certification	UL	

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Annexure-C.7.**TENDER SPECIFICATION FOR SINGLEMODE UNITUBE ARMoured FIBER CABLE**

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	06 -Core, Single mode 9/125-micron primary coated buffers, 10G Ethernet OS2, Armoured Loose Tube, ECCS (Electrolytic Chrome Coated Steel) Tape, Jelly Filled Loose Tube.		
2	Two Steel Wires/Rods embedded in outer periphery of the jacket as strength members. UV Stabilized jacket and protected from Rodent attacks		
3	Complying to ANSI/TIA-568-C.3, ISO/IEC 11801, Telcordia GR-20 Core, ITU-T REC G.652D, IEC 60793-1/60794-1, EN 50173, RoHS Compliant		
4	Suitable for use in indoor/outdoor ducts, direct burial and backbone cabling		
5	Loose tube material: Polybutylene Terephthalate (PBT) with Natural/White Colour having Inner Diameter/Outer Diameter $1.7/2.5 \pm 0.1$ mm		
6	Peripheral strength member as two steel wires/rods having dimensions as 0.6 ± 0.05 mm		
7	Moisture Barrier as Water Swellable Tape, Armouring ≥ 0.150 mm (ECCS Tape), Number of Ripcords as 01 no polyester based yarns.		
8	Outer sheath material as HDPE/LSZH with diameter as $7.5/8.5 \pm 0.5$ mm having thickness of 1.5mm nominal		
9	Weight of the cable for 06 core (HDPE/LSZH): $65.0/75.0 \pm 10$ kg/km		
10	Fiber colour and Loose tube colour as per ANSI/TIA standards.		
11	Tensile Strength : 1000 N, Crush Resistance : 4000 N/100mm		
12	Minimum bend radius : 20 x Diameter (during installation), Minimum bend radius : 10 x Diameter (during full load)		
13	Fiber Type : G. 652D (OS2)		
14	Attenuation : ≤ 0.38 dB/km (@1310 nm), ≤ 0.25 dB/km (@1550 nm)		
15	Chromatic Dispersion : ≤ 3.5 ps/nm.km (@1285 – 1330nm), ≤ 18 ps/nm.km (@1550 nm)		
16	Zero Dispersion Wavelength : 1300 – 1324 nm		
17	Zero Dispersion Slope : ≤ 0.092 ps/nm ² .km		

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SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
18	Polarisation Mode Dispersion : ≤ 0.2 ps/ $\sqrt{\text{km}}$		
19	Cut-off Wavelength : ≤ 1260 nm		
20	Mode Field Diameter : 9.2 ± 0.4 μm (@1310 nm) , 10.4 ± 0.4 μm (@1550 nm)		
21	Core Cladding Concentricity Error : ≤ 0.8 μm		
22	Cladding Diameter : 125 ± 1 μm , Coating Diameter : 245 ± 10 μm		
23	Cladding Non-circularity : ≤ 1 %		
24	Installation Temperature : -20 °C to $+70$ ° C, Operating Temperature : -20 °C to $+60$ ° C		
25	Cable Size and Standard Length: 4F to 12F : 4.0 kms $\pm 10\%$		

Annexure-C.8.

TENDER SPECIFICATION FOR CAT6 UTP INFORMATION OUTLET/RJ45 KEYSTONE TOOLLESS JACK

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	Category 6 Keystone is Tool less Design 30 Micron Gold Plating Suitable for 23~24 AWG Solid Copper Wire, Easy For Termination and Compliant to T568A and T568B Wiring Schemes, UL Listed and ETL Verified.		
2	Efficient rotation design tool free, press with click to terminate wires		
3	Cable holder with strain relief function for better termination and transmission		
4	Fast, Easy, Reliable Termination		
5	Reliable IDC contacts with color coding for better contact resistance and transmission		
6	Removable Shutter Option		
7	Keystone Jack Can Be Easily Terminated by Hand, Optional Termination by Hand Tool		
8	Backward compatible with both RJ11/RJ12 Plug		
9	Physical Specification:		

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
9.1	Housing : High impact flame retardant plastic, Polycarbonate UL 94V-0 rated		
9.2	PCB : FR4, 1.6mm Thickness		
9.3	Jack Wire Terminals: Phosphor bronze base, gold over nickel plating Gold Plating : 30μ, Nickel Plating Base(Ni) : 40μ~80μ		
9.4	IDC Terminals: Insulation displacement connector: Phosphor bronze base, Tin Plated 100μ		
9.5	(IDC) Accept #23~24 AWG solid copper wire		
10	Electrical Specification:		
10.1	Current Rating : 1.5 Amps		
10.2	Insulation Resistance : 500 MΩ minimum		
10.3	Contact Resistance : 10 mΩ maximum		
10.4	DC Resistance : 0.1 Ω maximum		
11	Mechanical Specification:		
11.1	Plug Insertion Life : 750 Cycles minimum using FCC-approved plug		
11.2	Plug & Jack Contact Force :100 Grams minimum using FCC-approved plug		
11.3	Plug Retention Force : 11.0 lbf minimum		
11.4	Durability : 200 Termination cycles		
11.5	Storage Temperature : -40°F to 150°F (-40°C to 68°C) Operating Temperature : -10°C to 60°C		
12	ETL Verified 4 connector channel performance upto 250 MHz		
13	Standard Verification:		
13.1	Qualified unscreened Class E/Cat.6. UL Listed and ETL Verified		
13.2	Permanent Link & Channel ANSI/TIA-568-C.2		
13.3	IEC 60603-7-4 2 nd Edition		
13.4	ISO/IEC 11801 2.2 Edition		
13.5	CENELEC EN 50173-1:2011		
13.6	RoHS Directive 2002/95/EC/Compliant		

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Annexure-C.9.**TENDER SPECIFICATION FOR FACE PLATE/INFORMATION OUTLET BOX SHUTTERED TYPE**

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	Single, Dual, Quad Face Plate Square (86 x 86mm) x 12 mm		
2	Two Piece design: Mounting Frame and Cover Plate		
3	Shutter on Face Plate for closing ports to prevent from dust entry		
4	Elegant: hidden-screw design		
5	Port labeling with paper label and transparent plastic window to hold paper label		
6	Glossy Finish: Suite for all decor		
7	Cover Material: ABS-UL94-V2 Base Material: ABS-UL94-V2 Dust Cover Material: ABS-UL94-V2		
8	Plug Retention Force: 14Kgf (140N)		
9	Supports UTP and STP Jacks Cat5e, Cat6 and Cat6A		
10	Suitable for 86 x 86 mm Square type Back box		
11	Installation Temperature: -20°C to +70°C Operating Temperature: -20°C to +70°C		
12	Standards: ANSI/TIA-568-C.2, ISO/IEC 11801:2002 AMMD.2:2010, ISO/IEC 60603-7 Compliant, RoHS Directive 2002/95/EC/Compliant, YD/T 926.3-2009		

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Annexure-C.10**TENDER SPECIFICATION FOR SOLID CABLE CATEGORY 6 UTP FR-PVC**

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
1	The 4 pair Unshielded Twisted Pair cable shall be UL® Listed.		
2	This cable well exceeds the requirements of ANSI/TIA-568-C.2 and ISO/IEC 11801 Class E		
3	Nominal Outer Diameter of Cable should be 5.6 ± 0.2 mm and Conductor Diameter 23 AWG		
4	Construction: 4 twisted pairs separated by internal PE Cross Separator. Full separator. Half shall not be accepted. Rip Cord is must.		
5	Conductor: Solid bare Copper, Outer jacket sheath: FRPVC with UL approved CM/CMR rated cable. Jacket color: Grey		
6	Insulation Material: High Density Polyethylene (HDPE) with Insulation Diameter : 0.89 ± 0.01 mm		
7	Dielectric Strength of cable should be 2.5 KVDC for 2 seconds		
8	Bending Radius : < 4X Cable Diameter at $-20^{\circ}\text{C} \pm 1^{\circ}\text{C}$ Pulling Force: 25.35 lbs		
9	Electrical Parameters: Insertion loss (Attenuation), NEXT, PSNEXT, ELFEXT (ACRF), PSELFEXT (PSACRF), Return Loss, ACR and PS ACR.		
10	Insertion Loss of 32.8 db/100m at 250 MHz		
11	Cable should support operating temperature from -20° to $+70^{\circ}\text{C}$		
12	Cable support Conductor Resistance $\leq 9.38 \Omega/100\text{m}$ Max.		
13	Mutual Capacitance of cable should be < 5.6 nF/100m Max.		
14	Resistance Unbalance of cable should be 5% Max.		
15	Capacitance Unbalance of cable should Max. 330 pF/100m		
16	Cable support Delay Skew: < 45 ns/100m, Operating Voltage: 72V		
17	Nominal Voltage of Propagation (NVP): 69% and Current Rating: 1.5 A Max.		
18	Impedance: $100 \pm 15 \Omega$ @100 MHz. and Propagation Delay @250 MHz : 536 ns/100m		

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)	REMARK
19	ETL Verified 4 connector channel performance upto 250 MHz		
20	RoHS Compliant		
21	Printed sequential Length Counter of each meter on Outer Jacket		
22	Category 6 UTP cables shall Supports Gigabit Ethernet (1000 base-T) standard and Operates at bandwidth of 250MHz		

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Annexure-C.11.

TENDER SPECIFICATION FOR FIBER RACKMOUNT LIU LOADED DRAWER TYPE
06/12/24 PORT

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)
1	The Fiber Rackmount LIU loaded having Adapter panel fixed on drawer base frame, with Adapters and with Pigtails and assembled with splice tray as per the Loaded fiber port requirement and their applicable accessories.	
2	Suitable to mount at different positions (depth wise) on standard 1U 19 inch racks. Drawer type to pull out for easy maintenance when assembled in racks.	
3	Cold Rolled Steel material with black powder coating	
4	Three types of cable entry holes for different size cables through cable glands, covered with rubber cable grommets/covers.	
5	Splicing of 24 fibers in each plastic fiber splicing trays with integrated cable spool design.	
6	Non removable top cover and no rear cover. Drawer type to pull out for better access of interior.	
7	As per the Loaded fiber port requirement , Loaded 16 (SC Simplex) adapters with SC SIMPLEX Pigtails on rackmount ports.	
8	As per the Loaded fiber port requirement Accessories kit consists of Cable management rings/Cable saddles, Cable glands (PG13.5, 2 nos), Splice rods, Blanking clips, Velcro	

SR. NO.	SPECIFICATION / QUALITATIVE REQUIREMENT	COMPLIANCE (YES/NO)
	ties, Cable ties, Cable inlet/outlet hole covers (2 types, 2 nos each)	
9	Cable management rings/Cable saddles can be mounted inside the rackmount, no provision to mount outside in front of the adapter panel.	
10	Suitable for storing up to 1 meter of 900 µm tight buffered fiber pigtail per adapter.	
11	Panel Dimensions: 482 x 220 x 44.3 mm (Length x Width x Height)	
12	Splice Tray Dimensions: 220 x 90 x 15 mm (Length x Width x Height)	
13	Port identification numbers printed on the Adapter panel	
14	Standards: Comply as per ANSI/TIA-568-C.3, ISO/IEC 11801, RoHS Compliant.	
15	Operating Temperature: -20 °C to +70° C Installation Temperature: -20 °C to +70° C	

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Annexure-C.12.

UPS 6KVA

SL No.	Parameters	Descriptions	Compliance Y/N
1	PHASE	Single phase with ground	
2	CAPACITY*	6000 VA / 4800 W	
3	INPUT		
	Nominal Voltage	200/208/220/230/240VAC	
	Input Voltage Range	176-280VAC (Based on load at 100%)	
	Frequency Range	46Hz ~ 54 Hz@50Hz system	
		56Hz ~ 64 Hz@60Hz system	
	Power Factor	≥ 0.99 @ Nominal Voltage (100% load)	
4	OUTPUT		
	Output Voltage	200/208/220/230/240VAC	
	Voltage Regulation	± 1%	
	Frequency Range (Synchronized Range)	47~ 53 Hz or 57 ~ 63 Hz	
	Frequency Range (Batt. Mode)	50 Hz ± 0.25 Hz or 60Hz ± 0.3 Hz	
	Overload	100% - 110% 10 Min 110% - 130% 1 Min >130% 1 Sec	

	Current Crest Ratio	3:1	
	Harmonic Distortion	$\leq 3\%$ THD (Linear Load) $\leq 6\%$ THD (Non-linear Load)	
	Transfer Time	0 ms	
		0 ms	
	Waveform (Batt. Mode)	Pure Sinewave	
5	EFFICIENCY		
	AC Mode (overall)	88%	
	Battery Mode (Inverter)	83%	
6	BATTERY		
	Standard Model	12 V	
		16/18/20	
		9 hours recover to 90% capacity	
		1A \pm 10%	
		218.4VDC \pm 1%	
	Long-run Model*	Depending on the capacity of external batteries	
		16-20	
		1A/2A/4A/6A (Adjustable)	
		218.4 - 272VDC \pm 1%	
7	PHYSICAL		
	Standard Model	396 x 190 x 688	
		72	
	Long-run Model**	396 x 190 x 318	
		21	
8	ENVIRONMENT		
	Operation Temp	0- 40°C (battery life cycle will be shorten when temperature is above 25°C)	
	Operation Humidity	<95 and condensing	
	Noise Level	Less than 50dB @ 1 Meter	
9	MANAGEMENT		
	Smart RS-232/USB	Supports Windows 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC	
	Optional SNMP	Power management from SNMP manager and web browser	

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Annexure-C.13.**Optical Line Terminal**

SI No	Feature	Specification
1	Key Features	1U 19 inch standard box EPON OLT with 4 PON ports
2		Support DN, IPv6 Ping, IPv6 Telnet
3		Support ACL based on source IPv6 address, destination IPv6 address, L4 port, protocol type, etc.
4		Support MLD v1/v2 snooping
5		Friendly EMS/Web/Telnet/CLI/SSH management
6		CLI command style similar to mainstream manufacturers
7		Support APP management
8		Support port-based rate limitation and bandwidth control;
9		In compliant with IEEE802.3ah standard
10		Support data encryption, multi-cast, port VLAN, separation, RSTP, etc
11		Support Dynamic Bandwidth Allocation (DBA)
12		Support ONU auto-discovery/link detection/remote upgrade of software
13		Support VLAN division and user separation to avoid broadcast storm
14	EPON Port	QTY 4
15		Physical Interface SFP SLOT
16		Connector Type PX20+
17		Max splitting ratio 1:64
18	Management Ports	1*10/100BASE-T out-band port, 1*CONSOLE port
19	PON Port Specification (PX20+ module)	Transmission Distance 20KM
20		EPON port speed Upstream 1.25G
21		Downstream 1.25G
22		wavelength TX 1490nm, RX 1310nm
23		Connector SC/UPC
24		Fiber Type 9/125μm SMF
25		TX Power +2~+7dBm(PX20+)
26		Rx Sensitivity -30dB(PX20+)
27		Saturation Optical Power -6dBm
28	AC Power Supply	AC:100~240V, 47/63Hz
29	DC Power Supply	DC:-48V
30	Operatingn Environment	Working Temperature 0~+50°C
31		Storage Temperature -40~+85°C

32		Relative Humidity 5~90%(non-conditioning)
33	Other requirement	OEM should have valid ISO 9001 & ISO 14001 for design & development for wired & wireless networking products.
34		OEM should have presence in the Gartner's magic quadrant for Wired and Wireless LAN Access Infrastructure at least for last consecutive 3 years
35		At least 3 years warranty from OEM
		OLT & ONU Should have of same brand for better connectivity along with 10 years registration in India.
39		Needed certification from OEM for quoted product
40		Tender specific authorization from OEM needed

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AnnexureC.14.

L3 Full Manageable Core Switch

S.No.	Technical Specifications		Compliance Y/N
	24-port 1G Base-T Layer-3 Stackable Managed Switch.		
1	Physical Interfaces	24 # 10/100/1000 Base-T Copper Ports	
		02 # 1/10G Base-T Copper Ports	
		02 # 1/10G Base-X Fiber SFP+.	
		Ethernet: Out-of-band 1G port (Front)	
		Console: RJ45 RS232 (Front)	
		Console: Mini-USB (Front)	
		Storage: USB (Front)	
		Full-width 1-unit 1U rack mount	
2	CPU/ Memory	CPU: 800 MHz	
		RAM: 1 GB	
		Packet buffer memory: 16 MB	
		Flash: 256 MB	
3	Performance	Stack height: 8 switches	
		Switching fabric: 128 Gbps Line-Rate (non blocking fabric)	
		Throughput: 95.2 Mpps	
		Forwarding mode: Store-and-forward	
		Address database size: 16,000 MAC addresses (48-bit MAC address)	
		Number of VLANs: 4,093 (IEEE 802.1Q) simultaneously	
		Number of multicast groups= 2K IPv4	
		Number of multicast groups= 2K IPv6	
		ARP/NDP= 2K	
		Number of LAGs (802.3ad): 128 LAGs with up to 8 ports per group	
		Number of hardware queues for QoS: 8 (Standalone)	
		Number of routes: 512 IPv4 Unicast routes	
		Number of routes: 256 IPv6 Unicast routes	
		Jumbo frame support: up to 9K packet size	
		Mean time between failures (MTBF): 1,328,968 hours (~151.7 years)	
		sFlow=416 samplers, 416 pollers, 8 receivers	
4	L2 Services	Protocol based VLAN	
		IP Subnet	
		IPX	
		ARP	
		Subnet based VLAN	
		MAC based VLAN	
		Voice VLAN	
		Private Edge VLAN	
		Private VLAN	

		Guest VLAN	
		Double VLAN Tagging (QoQ)	
		GARP with GVRP/GMRP	
		MVR (Multicast VLAN Registration)	
		Multiple Registration Protocol (MRP)	
		Multicast VLAN Registration Protocol (MVRP)	
		LAG Hashing	
		LAG Member Port Flaps Tracking	
		UDLD support	
		Distributed Link Aggregation	
		Storm Control	
		Link Dependency	
		Spanning Tree Protocol	
		Per VLAN STP (PVSTP) with FastUplink and FastBackbone	
		Per VLAN Rapid STP (PVRSTP)	
		STP Loop Guard	
		STP Root Guard	
		BPDU Guard	
		STP BPDU Filtering	
		STP BPDU Flooding	
		IGMP v2/v3 Snooping support	
		MLD v1/v2 Snooping support	
		Expedited Leave Function	
		Static L2 Multicast Filtering	
		MLDv1/2 Snooping Support	
		IGMPv2/3 Snooping Support	
5	L3 Services	IGMP Proxy	
		MLD Proxy	
		Any Source Multicast (ASM)	
		Source Specific Multicast (SSM)	
		Multicast streams routing between subnets, VLANs	
		Multicast Static Routes (IPv4, IPv6)	
		DVMRP	
		Neighbor discovery (IPv4, IPv6)	
		PIM-DM (IPv4, IPv6)	
		PIM-SM (IPv4, IPv6)	
		PIM multi-hop RP support	
		IPMC replication (hardware support)	
		DHCP Client (IPv4, IPv6)	
		DHCP Server (IPv4, IPv6)	
		DHCP Snooping (IPv4, IPv6)	
		DHCP/ BootP Relay (IPv4, IPv6)	
		DHCP options 66, 67, 150, and 55, 125	
		Static Routing (IPv4, IPv6)	

		Port based Routing	
		ECMP Static Routing	
		Port Based Routing	
		VLAN Routing	
		RIP v1 and v2	
		OSPF v2 and v3	
		OSPF Flood Blocking	
		Route Redistribution	
		VRRP	
		VRRP Route/Interface Tracking	
		Loopback Interfaces	
		Tunnel interfaces	
		Router Discovery	
		IP Helper	
		IP Source Guard	
		IP Event Dampening	
		ECMP	
		Proxy ARP	
		Multinetting	
		ICMP v4 and v6	
		IPv4/IPv6	
		DNS v4 and v6	
		IPv6 Routing	
		Configured v6-over-v4 tunnels	
		Automatic (6to4) tunnels	
6	QoS	IEEE 802.1p CoS	
		DiffServ QoS	
		WRED (Weighted Deficit Round Robin)	
		Single Rate Policing	
		Strict Priority queue technology	
		Auto-VoIP	
		iSCSI Flow Acceleration	
		IP DSCP	
		IP Precedence	
		IP TOS	
		L3 IPv6 Flow Label	
		Interface Traffic Shaping	
		PHB Support	
		Minimum Bandwidth per-interface	
7	Security	Broadcast, Multicast and Unicast Network Storm Protection	
		CPU Protection	
		DoS attack protection	
		ICMP throttling	
		Management ACL	
		Radius accounting	

		TACACS+	
		L2/L3/L4 Access Control List (ACL)	
		MAC, IPv4, IPv6, TCP, UDP ACL	
		Protocol based ACL	
		ACL over VLAN	
		Dynamic ACL	
		IEEE 802.1x Radius Port Access Authentication	
		802.1x MAC Address Authentication Bypass (MAB)	
		Port Security	
		Dynamic ARP Inspection	
		MAC Filtering	
		Port MAC Locking	
8	IEEE Network Protocols	IEEE 802.3 10Base-T	
		IEEE 802.3 Ethernet	
		IEEE 802.3i 10BASE-T	
		IEEE 802.3u 100BASE-T	
		IEEE 802.3ab 1000BASE-T	
		IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX	
		IEEE 802.3ae 10-Gigabit Ethernet	
		IEEE 802.3ad Trunking (LACP)	
		IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)	
		IEEE 802.1D Spanning Tree (STP)	
		IEEE 802.1s Multiple Spanning Tree (MSTP)	
		IEEE 802.1w Rapid Spanning Tree (RSTP)	
		IEEE 802.1p Quality of Service	
		IEEE 802.1Q VLAN tagging	
		IEEE 802.1v protocol-based VLAN	
		IEEE 802.1X Radius Network Access Control	
		IEEE 802.3x flow control	
		GMRP — Dynamic L2 multicast registration	
		GVRP — Dynamic VLAN registration	
		GARP -Generic Attribute Registration Protocol	
9	Management	ISDP (Industry Standard Discovery Protocol)	
		Out of band Management	
		802.1ab LLDP and LLDP-MED	
		SNMP v1, v2 and v3	
		RMON 1, 2, 3, 9	
		sFlow	
		Command Line Interface (CLI)	
		Web-based graphical user interface (GUI)	
		Admin access control via Radius and TACACS+	
		Telnet	
		IPv6 Management	
		Dual Software (Firmware) images	
		Dual Configuration file (Text-based)	

		Radius accounting	
		Malicious Code Detection	
		SNTP	
		XMODEM	
		Port Mirroring	
		Cable Test Utility	
		SSH v1/v2	
		SSL/HTTPS and TLS v1.0 for web-based access	
		File Transfer (uploads, downloads) through TFTP/HTTP	
		SCP/ SFTP/ HTTPS	
		Syslog	
		Non disruptive Config Management	
		Remote Port Mirroring (RSPAN)	
		OpenFlow 1.3	
		Persistent log supported	
10	Network Traffic	Access Control Lists (ACLs) L2 / L3 / L4	
		Time-based ACLs	
		ACL over VLANs	
		IPv6 RA Guard Stateless Mode	
		Network Authentication Successive Tiering	
		802.1x MAC Address Authentication Bypass (MAB)	
11	LEDs	Per port: Speed, link, activity	
		Power, Fan, Stack Master, Stack ID	
12	Environmental	Operating Temperature: 32° to 122°F (0° to 50°C)	
		Operating Humidity: 90% maximum relative humidity, non-condensing	
		Storage Temperature: – 4° to 158°F (–20° to 70°C)	
		Storage Humidity: 95% maximum relative humidity, non-condensing	
13	Certifications	CE mark, commercial	
		FCC Part 15 Class A, VCCI Class A	
		Class A EN 55022 (CISPR 22) Class A	
		Class A C-Tick	
		EN 50082-1	
		EN 55024	
		CSA certified (CSA 22.2 #950)	
		UL listed (UL 1950)/cUL IEC 950/EN 60950	
14	Warranty	True Lifetime Hardware Replacement Warranty	
		Lifetime free latest firmware support	
		1 year On Call Technical Support	
		Replacement with New Product Only No Refurbished Products.	

**Signature of bidder
With seal**

INSTALLATION, TESTING & COMMISSIONING OF CCTV SURVILANCE AT NABARANGPUR TOWN

Bid Reference No. – 53/NM-2022,

Dated: 10.01.2022

TENDER FORMS

TECHNICAL BID

Check List (Technical Bid)

Please check whether the following have been enclosed in the respective cover, namely, Technical Bid: (Please arrange the documents serially in the following order)

1	Form T1 (In Letter Head of the firm)	Yes/No	
2	Form T2	Yes/No	
3	Copy of the company / Firm Registration certificate	Yes/No	
4	Copy of PAN	Yes/No	
5	Copy of GST registration certificate	Yes/No	
6	DD of Rs 10,000/- towards tender paper cost (non-refundable)	Yes/No	
7	Copy of Income Tax return for F.Y. 2017 to 2020	Yes/No	
8	Company specification of the equipments/instruments (make)	Yes/No	

Authorized Signatory [In full and initials] :
Name and Title of Signatory :

Name of firm:
(Company seal)

FORM – T 1
(To be submitted with Technical Bid)
Technical Tender Submission Form

To

**The Executive Officer,
Nabarangpur Municipality
Nabarangpur -764059
Orissa**

Dear Sir,

We, the undersigned offer to **INSTALLATION, TESTING & COMMISSIONING OF CCTV SURVILANCE AT NABARANGPUR TOWN**. We are hereby submitting our bid, which includes this Technical bid, and a Price bidsealed under a separate envelope.

We hereby declare that all the information and statements made in this bid are true and accept that any of our misrepresentations contained in it may lead to our disqualification. Our bid is valid for a period of one year after the date of bid opening, subject to the modification result from Contract negotiations you may subsequently carry out with us to accept our tender.

I/We do hereby declare I/We have not been de-recognized /black listed by any State Govt./Union Territory /Govt. of India /Govt. Organization for supply of not of Standard Quality (NSQ) items / Part-supply / non-supply.

I/We agree that the Tender inviting Authority can forfeit the Security Deposit and black list me/us if, any information furnished by us proved to be false at the time of inspection/Verification and not complying with the Tender terms & Conditions.

I/We further declare that I /We possess valid manufacturing license /authorized distribution bearing no _____ Valid up to _____. If we are assigned the work during the period of validity of the bid, we undertake to carry out the same as per the terms and conditions of this tender document.

We have carefully gone through the Terms & conditions contained in the tender document and I declare that all the provisions of this tender document are acceptable to my company/firm.

I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours truly,

Authorized Signatory [In full and initials] :

Name and Title of Signatory :

Name of firm:

(Company seal)

FORM T 2**(To be submitted with Technical Bids)****General information about Firm/ Company**

SI No	Particulars	Details to be furnished	
Details of the Bidder (firm/ company)			
1	Name		
2	Address		
3	Telephone		Fax
4	E-Mail		
Details of Authorized person			
5	Name		
6	Address		
7	Telephone		
Details of local office address			
8	Contact Person		
9	Address		
10	Telephone		
11	Functioning since when		
Information about the company			
12	Status of company (public Ltd./Pvt. Ltd. /Proprietor/ Partnership)		
13	Details of Registration of firm /company (enclose the necessary documentary proof)	Date	
		Ref #	Furnish the copy of the certificate of incorporation/Registration certificate
		Year of experience	
14	Name & Address of Bankers with full address & Telephone no.		
15	Furnish copy of work experience if any.		
16	Copy of Balance Sheet for 3 years to be enclosed		
17	Details of 1 projects executed in the last 3 years (Govt./Semi Govt./ Corporate)		
18	GST Registration No.	(Enclose the copy of the certificate)	
19	Income tax Return	(Enclose the copy of the IT return)	
20	PAN.	(Enclose the copy of the PAN)	
21	Tender paper cost (DD/ of Rs10000/-)	(mention the DD number)	

Authorized Signatory [In full and initials] :**Name and Title of signatory :****Name of Firm :****(Company seal)**

INSTALLATION, TESTING & COMMISSIONING OF CCTV SURVILANCE AT NABARANGPUR TOWN

Bid Reference No. 53/NM-2022

Dated: 10.01.2022

TENDER FORMS

FINANCIAL BID

Check List (Financial Bid)

Please check whether the followings have been enclosed in the respective cover,namely, financial bid: (Please arrange the documents serially in the following order)

1. Form F1 (In letter Head of the Firm)

Yes/No

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2. Form F2

Yes/No

Authorized Signatory [In full and initials]

Name and Title of signatory

• _____

• _____

Name of Firm

Address

(Company seal)

FORM – F1
(To be furnished in the Financial Bid)

FINANCIAL BID Submission Form
(On the letterhead of the firm)

To

**The Executive Officer,
Nabarangpur Municipality
Nabarangpur -764059
Orissa**

Ref:- Bid reference No. _____

Dear Sir,

We, the undersigned, offer to **INSTALLATION, TESTING & COMMISSIONING OF CCTV SURVILANCE AT NABARANGPUR TOWN** in accordance with your tender referenced above and our Technical proposal.

Our proposal is valid for a period of one year after the date of Bid opening, subject to the modifications resulting from contract negotiations you may subsequently carry out with us to accept our tender. If we are assigned the work during the period of validity of the proposal, we undertake to carry out the same as per the terms and conditions of this tender document.

We understand you are not bound to accept any proposal you receive.

We remain,
Yours sincerely,

Authorized Signatory [In full and initials] : _____

Name and Title of signatory : _____

Name of Firm : _____

Address: _____

(Company seal)

BILL OF QUANTITIES – FINANCIAL BID FORMAT**FORM F2****(To be submitted with Price Bid)****Tender for installation, testing & commissioning of CCTV surveillance at
Nabarangpur Town.**

SL. NO.	ITEMS DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT WITHOUT GST
1	4Mp V/F Bullet Camera as per the specification with micro storage 256GB(can store footage in case of network failure) and inbuild analytics like face Recognitions - Refer Technical Spec	Nos	93		
2	Storage/Recorder Server, hard discs, software with Red 10 and above with redundancy N+M. In case failure auto changeover is must. 30 days Storage to be calculated as per the technical requirements. Refer Technical Spec	Set	5		
3	2Mp ANPR/Enforcement Camera with necessary software and analytics as per technical specs	Set	8		
4	4 port 10/100/1000 L2 Manageable POE Switch with 48v 7ADin-rail industrial grade Power supply	Nos	42		
7	IP 66 JB with cooling arrangement and Temperature Controller- as per technical specification	Nos	40		
8	24U Rack Fully Loaded	Nos	1		
9	L2 Manageable OLT Question	No.	1		
10	24 Port L3 Fully manageable switch	Nos	1		
11	16 Port LIU	Nos	1		
12	Armour OFC cable with Laying & all accessories as per technical specs and site requirements	Mtr.	22,000		
13	Cat6 Face plate keystone back box set per the tender technical specifications	Nos.	30		
14	CAT-6 UTP/STP (As per project technical requirements)	Mtr	2200		
15	2 sq.mm 3core Power Cable as per the system requirements.	Mtr.	2,500		
16	SPD (Surge Protector Device)	Nos	40		
17	1 KVA Online UPS Battery Backup one Hour as per the tender specifications	Nos	40		
18	6 KVA Online UPS with battery Backup as per the tender specifications	Nos	1		
19	Display For Control Room 65" as per the tender specifications	Set	4		
	TOTAL				

AMC (Annual Maintenance Cost) cost year wise after expiry of the warranty period.

1 st Year	2 nd Year	3 rd Year
Rs.	Rs.	Rs.

Note:

1. The cable length per branch may vary from place to place. The bidder will pay the cost of cable based on actual consumption only at the rate finalized. Total No. of cameras will be as per physical survey layout. The system for entire town should provide a minimum of 30days recording/Back-up facility.
2. Installation, testing & commissioning of the total system. This work includes every workand materials related to the job. As this is a turnkey job, no extra payment shall be made on any account.

Authorized Signatory [In full and initials] : _____

Name and Title of signatory : _____

Name of Firm : _____

Address:_____

(Company seal)