West Bengal Police Housing

&

Infrastructure Development Corporation Limited

(A Govt. of West Bengal Undertaking)

(CIN:U70109WB1993SGC058358)(GSTIN:19AAACW6099C2Z1)
Araksha Bhawan, 3rd Floor, Block – DJ, Sector – II, Salt Lake City, Kolkata – 700091.

Ph. & FAX. 033 – 23586188, E-mail: tender@wbphidcl.com

NOTICE INVITING e-TENDER

Memo No.ENGG/C.C.TV(DCH)/5081/2017/208 **Dated: 18 .01.2019**

Notice Inviting Tender No - WBPHIDCL/ACE /NIT-127(e) /2018-19(1st call)

" **Supply, Installation, Testing, Commissioning and Maintenance of Video Surveillance System in Six District Correctional Homes (Bankura, Cooch Behar, Darjeeling, Howrah, Purulia and Raiganj) of West Bengal ".**

Additional Chief Engineer, W.B.P.H. & I.D. Corpn. Ltd. Invites Tenders on behalf of the Chairman & Managing Director, West Bengal Police Housing & Infrastructure Development Corporation Limited for the following work. Collection and Submission of Tender is to be made online through the website http://wbtenders.gov.in only.

Name of the Work: "**Supply, Installation, Testing, Commissioning and Maintenance of Video Surveillance System in Six District Correctional Homes (Bankura, Cooch Behar, Darjeeling, Howrah, Purulia and Raiganj) of West Bengal ".**

In the event of e-filling, intending bidder may download the Tender documents from the website: http://wbtenders.gov.in directly with the help of Digital Signature Certificate & necessary earnest money should be remitted through online process as per Finance Department Order No. 3975-F(Y) dated 28.07.2016.

Details of submission procedure are given in Section II.

For last date & time of submission of bids online refer date and time schedule attached with this NIT.

The intending bidder must read the terms and conditions of the NIT carefully. They should particularly go through the eligibility criteria required and satisfy themselves of the requirements for eligibility. They should submit their bid only if they consider themselves eligible and they are in possession of all the documents required.

All communication should be address on the e-mail address of the Corporation.

All information posted on the website consisting of NIT and related documents, Prescribed Form of 'West Bengal Police Housing & Infrastructure Development Corporation Limited', Corrigendum etc if any, shall form part of the Tender document.

TENDER NOTICE

Additional Chief Engineer, West Bengal Police Housing Corporation Ltd. on behalf of Chairman & Managing Director, WBPHIDCL proposes to award the contract to selected bidder for implementing the CCTV System **in SIX DISTRICT CORRECTIONAL HOMES (BANKURA, COOCH BEHAR, DARJEELING, HOWRAH, PURULIA AND RAIGANJ) OF WEST BENGAL** through e-procurement portal of Government of West Bengal (www.wbtenders.gov.in). Prospective bidder willing to participate in this Tender shall necessarily register themselves with above mentioned e-procurement portal.

Cost of Tender Document	NIL
Earnest Money Deposit	**Rs. 397800 /- Only**
Completion Period	120 days from the date of awarding of Work
Validity of Bid	120 days from the last date of submission of bid
Queries, if any, regarding the Tender is to be made to:	Additional Chief Engineer, West Bengal Police Housing & infrastructure Development Corporation Limited

Date & Time schedule: -

Sl. No	Particulars	Date & Time	
1.	Date of Publishing of NIT online through the website https://wbtenders.gov.in	**18.01.2019 at 18:55 Hrs**	
2.	Date & Time for downloading of Tender Documents from the website https://wbtenders.gov.in	Start	**18. 01.2019 at 18:55 Hrs**
		End	**14.02.2019 at 16:00 Hrs**
3.	Date & Time of Submission of Tender through the website https://wbtenders.gov.in	Start	**04.02.2019 at 18:00 Hrs**
		End	**14 .02 .2019 at 16:00 Hrs**
4.	Date, Time & Place of opening of Technical Bid through the website https://wbtenders.gov.in	**16 .02.2019 at 16:00 Hrs** Office of the West Bengal Police Housing And Infrastructure Development Corporation Limited Araksha Bhawan, 3rd Floor, Block – DJ, Sector – II, Salt Lake City, Kolkata – 700091.	
5.	Date of Uploading the List of Bidders participated in the Tender through the website https://wbtenders.gov.in	To be informed later	
6.	Date of Uploading the Final List of Technically Qualified Bidders after Technical Bid Evaluation through the website https://wbtenders.gov.in	To be informed later	
7.	Date, Time & Place of opening of Financial Bid through the website https://wbtenders.gov.in	To be informed later	
8.	Date of Uploading of List of Bidders along with their Rate Offered through the website https://wbtenders.gov.in	To be informed later	

All disputes arising out of or in any way connected with this contract/ tender shall be deemed to have arisen in Kolkata and only courts in Kolkata shall have jurisdiction to determine the same.

SD/-

Additional Chief Engineer,
West Bengal Police Housing &
Infrastructure Development Corporation Ltd.

Memo No.ENGG/C.C.TV(DCH)/5081/2017/208/1(9) **Dated: 18.01.2019**

Copy forwarded for favour of kind information & wide circulation to the:-

1. The Chairman & M.D. W.B.P.H.I.D. Corpn. Ltd. Araksha Bhawan, Salt Lake City, Kolkata-700027
2. The DG & IG of Correctional Services, WB, Jessop Building, 63, N.S. Road, Kolkata-700001
3. The OSD & Ex-Officio Additional Secretary to the Govt of West Bengal, Jessop Building, 1st floor,63, N.S. Road, Kolkata-700001.
4. The Chief Engineer, WBPHIDCL, Araksha Bhawan, Salt Lake City, Kolkata-700091.
5. The F.A. & C.A.O. WBPHIDCL, Araksha Bhawan, Salt Lake City, Kolkata-700091.
6. The Executive Engineer (Electrical), WBPHIDCL, Araksha Bhawan, Salt Lake City, Kolkata-700091.
7. The Assistant Engineer (System), WBPHIDCL, Araksha Bhawan, Salt Lake City, Kolkata-700091.
8. Notice Board.
9. Office Copy.

SD/-
Additional Chief Engineer,
West Bengal Police Housing &
Infrastructure Development Corporation Ltd.

Table of Contents

Section-I

Synopsis of the Project

1. Project Overview

Supply, Installation, Testing, Commissioning and Maintenance of Video Surveillance System in Six District Correctional Homes at Bankura, Cooch Behar, Darjeeling, Howrah, Purulia and Raiganj of West Bengal under Department of Correctional Administration, West Bengal on a turnkey basis.

The essence of the project is to:

1. Detect an event and to identify the elements/objects /persons involved in the event within the field of vision.
2. Storage and retrieval of such recordings with facilities for immediate or future analysis.

The system architecture is defined in such a manner that the VMS shall be open to any cameras integration. As a result existing resources in the Correctional Home may be reused optimally and augmented in the new system. The systems architecture must be scalable enough to add new cameras in future without changing the software and with incremental cost, and can be consolidated in a Central Monitoring Station in future.

Specification of each component in the system has been detailed in the tender document. The VMS must be compatible to both Microsoft Windows and Linux operating system. It should either be free or bundled with VMS offer along with the Anti-virus support. Extra charges for operating system or Anti-virus will be not entertained. VMS should support all standard browsers – Internet Explorer, Firefox, Safari, Chrome, etc. as updated in client machine. The system will not be dependent on any proprietary camera model. Any ONVIF compliant camera from any vendor should work. Also non-ONVIF compliant cameras can be integrated with the system with the available camera SDK.

No NVR will be used in the system to ensure openness and scalability in terms of computing power, storage capability, Failover support, and retention of data and further extension of the project. General purpose server (Of the Self and vendor independent) will be used in the system.

The system will have the facility to add Network attached storage to record video data. The system will be capable of augmenting with unlimited storage capacity in future without requiring changing the systems architecture or the software. This can be accomplished at ease with simple software reconfiguration without losing any data recorded till the time the reconfiguration is done.

Considering the importance of a CCTV system in correctional homes, it is proposed that an IP based High Definition intelligent video surveillance solution be installed covering all the important locations inside/outside(as required) the correctional homes. To ensure blanket coverage in the perimeter IP Varifocal Bullet Camera with built in IR Illuminator is proposed. The proposed camera must have High performance and long service life Infrared LED. High Definition dome type of camera with built in IR Illuminator is proposed for other indoor locations i.e. inside the cells, office area etc. For higher coverage distance of open areas, High Definition IP PTZ camera with IR Illuminators is proposed. High Definition cameras will ensure better clarity

of picture and ensure identification of the person. IR Illumination will ensure visibility at night also. All cameras must be mounted with military grade vandal proof housing (IK10).
Cable connections for the work should be well out of reach from the inmates and other common people.

2. Utility of the System

To enhance security of the correctional home the CCTV system should cover the entire perimeter beside the other important places inside the home. Most important locations have been identified so that movement of people can be monitored systematically over and above the perimeter wall area where surveillance system needs to be in place. Entire perimeter of the correctional home requires blanket coverage on 24 hours basis thus any activity near the perimeter and any attempt to cross/climb the boundary wall get noticed with clear identification of the person(s).

3. Summary

The proposed system is Open architecture based without limiting to a specific camera vendor, browser dependence, vendor specific database dependence, etc. This will further help to augment other systems like Fire Alert system, Access Control System, Face Recognition System and Various Video Analytics Applications in the Correctional Homes as and when required. The system will give an efficient operational excellence tool for general surveillance, crime prevention, and efficient forensic analysis and investigation.

The requirements (Camera & Storage) for the Correctional home that have been identified for CCTV system are, as below:

Table 1: - Camera Locations and Types

Sl. No.	Location	IP Varifocal Dome	IP Varifocal Bullet	IP PTZ	Total	Storage
1	Bankura	12	16	2	30	20TB
2	Cooch Behar	12	16	2	30	20TB
3	Darjeeling	12	16	2	30	20TB
4	Howrah	12	16	2	30	20TB
5	Purulia	12	16	2	30	20TB
6	Raiganj	12	12	1	25	20TB
	Total	72	92	11	175	

4. Scope of Work

The scope of work includes supply, installation, testing commissioning and maintenance of high definition IP cameras at specified outdoor and indoor locations for the correctional home under jurisdiction of Directorate of Correctional Services, West Bengal, along with necessary components (Servers, Storage, Workstations, Networking system, etc.) to make a complete functional IP based intelligent CCTV system on turnkey basis with warranty period of 3 years and maintenance for 2 years after the warranty period of 3 years.

Warranty Period & Post Warranty Maintenance Period (Total 5 years)

Bidder shall ensure supply of spare parts for equipments for 5 years post completion (counting from the date of handover) including maintenance of software, replacement/ augmentation if any required to keep the system operational.

The required system is as follows:

i) The system will be used for general Video surveillance. Detection of an event and identification of object features within a predefined range.

ii) Events of Video content analysis at VMS system.

iii) VMS report should help in post facto analysis of incidents.

iv) To make the communication backbone and infrastructure ready so that the system can be scaled up to accommodate more cameras and storage boxes.

v) System should have provision for Integration and data exchange with other correctional homes as and when needed.

vi) Feed from all cameras to be transmitted to Control Room for viewing and for online storage.

vii) Fault tolerant Network backbone is to be deployed for 24x7 operations.

viii) The system shall provide for online storage of video images for minimum 14 days.

ix) The warranty of the whole system shall be for a period of 3 years from the date of commissioning and successful handing over (installation) with associated works as described and set forth in the tender document.

x) The system shall adhere to open standards and all the software shall run in standard Operating system including Open source Linux OS, providing maximum flexibility and low cost of ownership, scalable to meet future surveillance and intelligent traffic monitoring needs, and ease of use.

xi) The respective Correctional home authority will arrange for availability of AC power source at a single point or from nearest available AC Power feeder box (whichever is suitable and effective) at the Correctional Home for outdoor and at each Lobby/Open area in Indoor environment.

xii) The network to be provided shall be secure and the bidder must ensure that sufficient bandwidth is available at all times to transmit video from all cameras to the Control Room. Necessary software/hardware components need to be provided by the bidder to ensure security of data throughout the lifetime of the system.

The system offered by the bidder shall have no single point of failure.

NOTE: -

a. Specification and quantity laid down in the tender document is only indicative and not exhaustive.

b. Bidders may quote for additional items to implement the system completely if needed.

c. Any technical deviation and proposal from bidder's side should be clearly mentioned.

d. The bid should be inclusive of all accessories, brackets, and camera poles, various types of cables, conduits, ducts etc. and maintenance for the 3 years of warranty period.

e. Scope shall not be restricted to the items listed in the schedule or requirement and specifications only.

f. The software to record and generate periodic reports/Reports-on-demand of the system health is to be delivered by the bidder along with the system.

g. The bidder should design the system with the above mentioned (Table 1) number of cameras for the correctional home.

h. The quantities of Camera, Switches and other active and passive components may vary in the final order. The bidder should be able to supply and install the components without changing the unit price of the components and without claiming any further charges towards installation/commissioning.

i. The shifting of surveillance system to a new building of the same correctional home will be part of the maintenance work during the warranty period.

The following activities comprise the total scope of work:

1. To establish backbone network to provide high-speed connectivity to all the locations where video surveillance camera would be installed.
2. Configuration and Integration of equipment.
3. Installation and Configuration of IP based Surveillance Solution.
4. Seamless integration of IP Backbone with Surveillance Application consisting of IP Based Surveillance cameras and Recording Software.
5. Supply and installation of Integrated Video Management System and Video Content analysis.
6. Provide vandal resistant housing for the IP Cameras and other equipment to be housed in every identified place given in the location list later in this document.
7. Setting up Control room with display screens at locations specified by the Correctional Home authorities for real time monitoring of Video feed, and smart navigation events from the archived video for investigation.
8. Training on overall system.
9. Acceptance Test.
10. Sign-Off with Documentation.
11. Maintenance and support of IP Video Surveillance System & Other Components during the warranty period of 3 years and maintenance period for 2 years post warranty period of 3 years.

Section II

General Guidelines for the Bidder

1. Tendering Process

Open Tender for the work as mentioned in Section –I of this document. Bids shall be submitted online (www.wbtenders.gov.in). No conditional bid will be accepted.

2. Pre-Bid Meeting

Pre-Bid meeting will be organized at WBPHIDCL, Araksha Bhawan, 3rd Floor, Block – DJ, Sector – II, Salt Lake City, Kolkata – 700091.

3. Earnest Money Deposit (EMD)

Earnest money deposit should be remitted through online process as per Finance Department Order No. 3975-F(Y) dated 28.07.2016. This amount will be forfeited if, having been selected by the WBPHIDCL authority for the job, the Bidder refuses to accept work order or having accepted the work order, fails to carry out his obligations mentioned therein. Bank Guarantee in lieu of Earnest Money Deposit will not be accepted. No interest will be payable on the Earnest Money Deposit. The Earnest Money Deposit will be refunded to the unsuccessful bidder. The Earnest money paid by the successful bidder will be converted to security deposit.

The EMD will be forfeited if a bidder withdraws his offer before finalization of the Tender. The EMD of the successful bidder shall also be forfeited if the bidder fails to sign the prescribed agreement within the specified period.

4. Initial Security Deposit

The successful bidder to whom the contract is awarded shall deposit as Initial Security Deposit in form of bank guarantee from any scheduled bank or demand draft drawn in favour of WBPHIDCL, payable at Kolkata of a sum to make up 10% of the value of accepted Tender after the appropriation of the Earnest Money Deposited by him. The successful bidder shall submit Initial Security Deposit within 15 days after receiving the letter of acceptance of his tender through online process. No interest shall be paid on this Security Deposit. The Security Deposit, either in whole or in part thereof, shall be forfeited in the event of the bidder's failure to observe any terms of this Contract / or non-compliance with the conditions of the contract. This initial security deposit will be released after expiry of the warranty period of 3 years counting from the date of handing over of the completed system, subject to the condition that this amount is not forfeited under any clause of this tender.

5. Submission of Bid

The Tender will be in two parts.

i) Technical Proposal &
ii) Financial Proposal.

The Technical Proposal (TP) should be complete in all respects and contain all information asked for in this document. It should not contain any price information. However TP should confirm that all requited rates have been quoted in Financial Proposal (FP), without showing the actual amounts in the Technical Proposal. It should clearly state the Make and Model of the products offered for which rates have been quoted by the tenderer in the Financial Bid. Any hardware accessories, software or operating system supplied free along with the system or at a cost must be indicated separately and specifically. For a single item only one make and model is to be quoted so that Technical evaluation can be done on that basis.

It is mandatory to submit the technical specification details in the prescribed pro-forma duly filled in, along with the offer. In case of non-submission or partial submission of technical details, the **Technical Evaluation Committee (TEC)**, at its discretion, may not evaluate the proposal. The Technical Proposal must be submitted in an organized and structured manner. No brochures/leaflets etc. should be submitted in loose form.

The Financial Proposal (FP) should contain relevant price information and the rates should be quoted in Indian Rupees only. The FP should not contradict the TP in any manner.

The offer from the supplier should be for a specific model, for an item. The TEC reserves the right to reject any offer with multiple options.

General Submission Process: Tenders are to be submitted online through the website stated. All the documents uploaded by the Tender Inviting Authority form an integral part of the contract. Bidder are required to upload all the Tender documents along with the other documents, as asked for in the NIT, through the above website within the stipulated date and time as given in the NIT.

Tenders are to be submitted in two folders at a time for each work, one is Technical Proposal and the other is Financial Proposal. The Bidder shall carefully go through the NIT and prepare the required documents and upload the scanned documents in Portable Document Format (PDF) to the portal in the designated locations of Technical Bid. Bidder needs to fill up the quoted amount for the work in the financial form and upload the same in designated location of Financial Bid. The documents uploaded are virus scanned and digitally signed using the Digital Signature Certificate (DSC). Bidder should specially take note of all the addendum/corrigendum related to the NIT and upload the latest documents as part of the NIT.

The quoted rate will be inclusive of all taxes/GST.

All the documents should be properly indexed.

- The financial proposal should contain the following document in one cover (folder).

  - Bill of Quantities (BOQ): The bidder is to quote the rate for each component of the BOQ online through computer in the space marked for quoting rate in the BOQ. *(Only downloaded copies of the above documents are to be uploaded, virus scanned and digitally signed by the bidder)*

6. Bidder's Minimum Eligibility Criteria

1. The bidder should be a Company registered in India under the Companies Act 1956 or a partnership registered under the India Partnership Act 1932 or Limited Liability Partnership Firm registered under the Limited Liability Partnership Act 2008 with their registered office in India for the last five years.
2. The bidder should have a valid PAN and GSTIN.
3. An undertaking (self-certificate) on Non Judicial Stamp Paper that the bidder hasn't been blacklisted by a central / state Government institution and there has been no litigation with any government department on account of similar services. It must be submitted as per Form 6.
4. The bidder's average annual turnover in India should be minimum Rs. 1 crores or more in each of the last three financial year's viz. **2015-16, 2016-17 and 2017-18** and should have earned profit during the last three financial years.
5. Works executed in the last 3 years from the date of publication of this Tender - The Bidder should have executed at least one similar job valued at minimum Rs. 50 Lakhs in a single order in any of the organization listed vide para 8 .(ii). (Certified documents to be submitted). No indoor surveillance project such as commercial building, housing complex, Office building etc shall be considered as pre-qualification.
6. Minimum Nos. of surveillance system designed, procured, deployed and maintenance - The Vendor should have designed procured, deployed and presently maintaining at least 1 fully IP based surveillance systems for any Govt. organization listed vide para 8.(ii)

(Certified documents to be produced with reference contact numbers-details should be filled in Form 5).

7. Bidder should be working for the last five financial years (***2013-14, 2014-15, 2015-16, 2016-17 and 2017-18***) in CCTV based surveillance system business (Credentials should be presented).
8. The bidder must have its own office in West Bengal and should have Service Centres functioning at Kolkata. (List of service centers with address and Telephone / FAX nos. to be submitted).
9. Bidder should submit number of qualified engineers of the firm. There should be minimum five qualified engineers (Degree/Diploma holders) in West Bengal engaged with the firm (not contractual employee).
10. **Bidder should submit PF and ESI registration.**
11. OEM Certification - The bidders should be authorized by the OEMs (Original equipment manufacturers) of important items (like cameras, Video Management System, UPS, Network devices, Servers and Storage devices) to quote in the Bid.
12. Successful bidder has to submit a declaration that he is not a PF and ESI defaulter before issuance of Work Order.

7. Documents to be submitted

i) NIT and Addenda/Corrigenda (if published) will be submitted with the TP.

ii) Power of Attorney should be in the form of Non-judicial stamp-paper certified by the Notary Public to establish the Authorized Signatory from bidder's side.

iii) All Forms as mentioned in the Section – IV of this document.

iv) Technical Write-up comprising of "Project Approach and Methodology" covering the sub-topics as mentioned in Section –I Clause 2 under Project Modules and Objectives, and Timelines.

v) Certificate of Incorporation, Copies of Articles of Association (in case of registered firms), Bye laws and certificate of registration (in case of registered co-operative societies), Partnership deed (in case of partnership firm) /summary for partnership should be submitted.

vi) Copy of PAN, GST registration should be submitted.

vii) Undertaking on Non-judicial stamp paper stating the Bidder is Not Blacklisted or Bankrupt.

viii) Credential regarding engagement in CCTV based surveillance system business in India for the last five financial years (2013-14, 2014-15, 2015-16, 2016-17 and 2017-18).

ix) Turnover certificate duly certified by registered CA for last three financial years (2015-16, 2016-17 and 2017-18). A copy of I-T return acknowledgment for last three financial years (2015-16, 2016-17 and 2017-18) should also be submitted.

x) A copy of the valid ISO 9001:2008 certificate.

xi) All the enclosed Datasheets for the equipment mentioned in Form Section.

xii) Necessary OEMs Certificates.

xiii) Documents regarding Net Worth.

xiv) Other relevant documents as mentioned in the above Bidder's Minimum Eligibility Criteria and Technical Evaluation Score.

NOTE: - Consortium will not be allowed in this project.

8. Completion Certificate

I. The phrase "Completion Certificate" for PMC should be interpreted as "certificate of satisfactory execution of job in respect as per terms and condition of the contract".

II. *Completion Certificate of works AS A PRIME AGENCY (NOT as a member of joint venture or sub contractor) under the authority of State/Central Gov., State/Central Gov. undertaking, Statutory/Autonomous Bodies constituted under the statute of the Central / State Government, Scheduled Bank, Zila Parishad and Local Bodies.*

Such Completion Certificates are to be issued by an officer not below the rank of Executive Engineer / Divisional Engineer / District Engineer / Project Manager/Divisional Manager/ Competent Authority of the State / Central Government Departments / Organisations. Discretion regarding acceptance of such Certificate lies solely with the TEC.

9. Bid Evaluation Process

a) The Bidder must fulfil the "Minimum Eligibility Criteria" mentioned above to qualify for evaluation of "Technical Eligibility Criteria".

b) WBPHIDCL may reject a bid and disqualify the bidder from further evaluation process if the bidder fails to fulfil the "Minimum Eligibility Criteria". In absence of any one of the documents required under "Minimum Eligibility Criteria", the offer may be treated as non-responsive & in that case WBPHIDCL will have the right to decide accordingly.

c) Upon fulfilling all the "Minimum Eligibility Criteria" mentioned above, the bidder is eligible for the next stage of evaluation, which is the evaluation of "Technical Eligibility Criteria".

Table 2: - Technical Evaluation Score:

Sr. No.	Technical Evaluation Criteria	Maximum Score
1	**Company Profile**	**15**
(a)	Average annual turnover in each of the last 3 years (Turnover in INR Crores); more than 1Cr & Less than 3Cr: Marks=5 Between 3 Cr to 5 Cr : Marks = 7 ***More than 5 Cr : Marks = 10***	10
(b)	Net worth (Net worth in INR Crores) ***60 Lakhs to 1.2 Cr : Marks = 3*** ***More than 1.2 Cr & Upto 2.5 Cr : Marks = 4*** ***More than 2.5 Cr: Marks = 5***	5

2	**Experience of Company**	**30**
(a)	Experience of Bidder in executing CCTV Surveillance Project in a similar scope in India (Minimum Project value = **Rs. 35 Lacks**) - COMPLETED PROJECTS ONLY; 1Project: Marks=5 2 projects: Marks = 7 More than 2 projects: Marks = 10	10
(b)	Experience of Bidder in executing CCTV Surveillance Project in a similar scope in India (Minimum Camera Numbers = 50) - COMPLETED PROJECTS ONLY 2 projects of 50 cameras or 1 project of 75 cameras: Marks = 4 2 projects of 75 cameras or 1 project of 100 cameras : Marks = 7 More than 2 projects of 75 cameras or more than 1 project of 125 cameras : Marks = 10	10
(c)	Presently maintaining at least 1 fully IP based Surveillance (minimum 50 nos of camera) systems for any Govt. Organization/PSU. For 1 project : marks =5, 2 projects : marks=7, more than 2 projects : marks=10	10
3	Technical Evaluation, Demonstration, Proof of Concept, Presentation, Discussion (Section – 3 , Table 1 (mandatory), Table -2 to Table -21 This will evaluate the total system in terms of networking, network security, network load distribution, synchronization, data transmission and compatibility between active and passive elements. The purpose of this presentation would be to enable the Corp. to evaluate the vended proposed system in terms of hardware, software and the system efficiency and the scalability. Note: Architectural diagram, System integration diagram(mentioning proposed make & model), and Network diagram should be clearly portrayed in the technical bid documents submitted by the bidders. All technical documents should be properly indexed.	**55**
(a)	Proof of Concept / Prototype & Technical Demonstration	10
(b)	Hardware Proposed	30
(c)	System Architecture(with diagrams) and Software Proposed	15
	Total Marks	**100**

d) Pursuant to scrutiny and decision of the Technical Evaluation Committee (TEC), the summary list of technically eligible Bidder will be uploaded in the web portals.

e) Financial proposals of the Bidder declared technically eligible by the Technical Evaluation Committee will be opened electronically by the Tender Inviting Authority from the web portal stated above on the prescribed date.

f) After opening of the financial proposal, the preliminary summary result containing name of bidder and the rates quoted by them will be uploaded.

g) The Tender inviting Authority may ask any of the Tenderers to submit analysis to justify the rate quoted by that Bidder.

h) Tender Evaluation Committee may ask the bidder with highest final composite score to lower down the rate offered by them.

i) After holding such negotiation, AOC would be uploaded in the web portal in favour of the selected agency.

NOTE: -

1. Technical Evaluation:

(i) Section -III consists of 18 tables, out of which all items of Table-1 and few items of Table -2 to Table – 18 are '*' marked, which must be complied by the bidder, and non-compliance of that may implies failing in technical evaluation of bid.

(ii) (In Section-III) each items (which are not '*' marked) of Table-2 to Table-21, carries '1' mark for compliance and '0' for non-compliance.

(iii) (In Section – III) Bidder must have to attain 80% for each table (on the items which are not '*' marked) to qualify technically for that Table. Failure in any one of the Tables may imply failing in the Technical Evaluation.

2. Financial Evaluation:

(i)Technically qualified bids will be allowed for financial evaluation. The bidder with lowest amount quoted will be called for negotiating the rates.

(ii) In case of a tie in the financial score the bidder with the higher Technical Score will be invited for negotiations and selection first. While evaluation, the Committee may summon the Bidder and seek clarification / or verification of original hard copy of any of the documents already uploaded.

10. Acceptance of Offer

a) The bidder with the highest final composite score as stated above, and fulfils the "Minimum Eligibility Criteria" may be awarded the contract.

b) WBPHIDCL will issue a Letter of Acceptance (LoA) to the successful Bidder.

c) The successful Bidder will need to send an unconditional acceptance of the LoA within 7 working days from the issue of the LoA.

d) If the successful Bidder is unable to send the acceptance within the stipulated time, then WBPHIDCL as per their discretion can cancel the LoA issued and issue a fresh LoA to the L2 Bidder. The EMD for the original successful Bidder will be forfeited in this case.

e) The successful Bidder is required to sign the Agreement (Contract), within 15 working days from the date of issue of the LoA. Failure to do so may result in forfeiting the EMD.

f) The selected bidder shall mobilize its team and start executing the project within 10 days of signing of the Agreement.

11. Tender Accepting Authority

Additional Chief Engineer, WBPHIDCL.

12. Penalty Clauses and Liquidated Damage

a) Failure to execute the Agreement after issue of Letter of Acceptance: If the successful bidder fails to sign the Agreement in the format shared by WBPHIDCL within 15 working days of issue of Letter of Acceptance from WBPHIDCL without any valid ground, then the EMD will be forfeited, the bid will stand cancelled and WBPHIDCL will have the right to either approach the L2 bidder or issue fresh NIT for the said work at the sole risk and cost of the successful bidder.

b) Failure to initiate work within 10 days of signing the Agreement: If the successful bidder fails to initiate work within 10 days of signing the Agreement, the EMD will be forfeited, the bid will stand cancelled and WBPHIDCL will have the right to approach the L2 bidder or issue fresh NIT for the said work at the sole risk and cost of the successful bidder.

c) Any delay in completion of the work over the stipulated period will attract penalty of 1% of the contract value per day subject to maximum of 10% of the contract value. The Corporation would have the right to terminate the contract in case the overall penalty for the delay in execution and delivery of the payment equals to 10% of the total contract value.

   The Corporation reserves its right to recover any penalty imposed on the bidder, on account of delay in delivery of the project or incomplete execution of the project, by any mode, which includes adjusting from any payment to be made by the Corporation to the bidder and/or the initial security deposit.

d) Failure to produce the original hard copies of the documents (especially Completion Certificates and audited balance sheets), or any other documents on demand by the Tender Evaluation Committee within a specified time frame or if any deviation is detected in the hard copies from the uploaded soft copies or if there is any suppression, the Tender Evaluation Committee will bring the matter to the notice of the Additional Chief Engineer immediately and the bidder may be suspended from participating in the bid process, with the approval of the Chairman & Managing Director of the Corporation for a maximum period 3 (Three) years. In addition, his Earnest Money Deposit will stand forfeited.

13.Taxes & duties to be borne by the Bidders / Suppliers / Manufacturer

Income Tax, Construction Workers' Welfare Cess and similar other statutory levy / cess will have to be borne by the Bidders / Suppliers / Manufacturers and the rate should be quoted accordingly after consideration of all these charges. **The quoted rate will be inclusive of GST.**

14. Site inspection before submission of Tender

Before submitting any Tender (preferably before the Pre-bid Meeting), the intending Tenderers must make themselves acquainted thoroughly with the local conditions prevailing at site by actual inspection of the site and taking into consideration all factors and difficulties likely to be involved in the execution of work in all respect including transportation of materials, communication facilities, climate conditions and availability of local labour etc. and no claim, whatsoever, will be entertained on these account afterwards. All the length related to any type of cables considered in this work is based on approximation, bidder should survey and put the price accordingly, it is worthwhile to mention that no supplementary tender will not be entertained during the execution of the work.

15. Conditional and Incomplete Tender

Conditional and incomplete Tenders are liable to be summarily rejected.

16. No Price Variations

The commercial offer shall be on a fixed price basis. No upward revision in the price will be considered.

17. Validity of Offer

The offer should be valid for period of 120 days the last date of submission of the bid.

18. Termination

i. The failure on the part of the successful bidder to perform any of its obligations or comply with any of the terms of this NIT shall constitute an Event of Default on the part of the successful bidder. The events of default as mentioned above may include, inter-alia, the following:

   a. the successful bidder has failed to perform any instructions or directives issued by the WBPHIDCL which it deems proper and necessary to execute the scope of work under the NIT, or

   b. the successful bidder has failed to remedy a failure to perform its obligations in accordance with the specifications issued by WBPHIDCL, despite being served with a default notice which laid down the specific deviance on the part of the successful bidder to comply with any stipulations or standards as laid down by WBPHIDCL; or

   c. the successful bidder has failed to conform with any of the specifications as set out in the NIT or has failed to adhere to any amended direction, modification or clarification as issued by WBPHIDCL and which WBPHIDCL deems proper and necessary for the execution of the scope of work under this NIT;

   d. There is a proceeding for bankruptcy, insolvency, winding up or there is an appointment of receiver, liquidator, assignee, or similar official against or in relation to the successful bidder;

   e. The successful bidder or its team has failed to comply with or is in breach or contravention of any applicable laws;

   f. The successful bidder has failed to comply with any terms and conditions of this NIT;

ii. In the event of any default by the successful bidder as stated above, WBPHIDCL will issue a Notice to the bidder in writing setting out specific defaults / deviances / omissions. The successful bidder will need to remedy the default/ deviances / omissions committed within thirty (30) days of the issuance of the notice to the satisfaction of WBPHIDCL. In case, the successful bidder fails to remedy the default to the satisfaction of WBPHIDCL, WBPHIDCL will be entitled to terminate the Agreement in full or in part.

iii. Upon termination of the Agreement, the WBPHIDCL also has the right to debar the Agency from participating in future works.

19. Force Majeure

Neither WBPHIDCL nor the bidder will be in breach of the agreement if any total or partial failure by it of its duties and obligations is occasioned by any act of God, fire, floods, terrorist attacks, riots, political strikes or disturbance, stoppage of work due to governmental order/alert. If such reasons continue to prevent performance of either party's duties or obligations for a period of more than five (5) working days, the parties shall consult together for the purpose of agreeing what action should be taken.

20. Dispute Resolution and Arbitration

Arbitration is not allowed.

21. PAYMENT TERMS

Payment plan shall be as laid down below. No payment shall accrue until the performance guarantee has been furnished and equipment / goods are supplied as per terms mentioned below. The Selected vendor shall be responsible to implement the project, maintain and provide service as and when required for a term of 5 (Five) years

post handover of the Project and on completion of Agreement period, the Bidder shall transfer the system to the Purchaser. During this period the bidder shall have full responsibility for the delivery of the services, including all maintenance, and management activities, (as per SLA) etc.

The selected bidder shall make a payment request after the end of each milestone period / quarter with the following supporting documents:

I. Acceptance certificate issued by the engineer in charge of WBPHIDCL.

II. SLA compliance report as prepared by the Corporation or by a Third Party Monitoring Agency appointed by the Corporation.

III. Certificate from bidder mentioning that service/support shall be available till the expiry of contract period supported by the certificates from all OEMs. No change has been done in the earlier submitted original OEM authorization/support certificate. The on-site warranty and service support will stand as per the original OEM's certificate.

Payment milestone		Payment
Phase I	Supply of all the items and equipment at designated location and submission of receipt reports along with acceptance of equipment by WBPHIDCL Engineer in charge. (As per BOQ)	**25% of bid value or 75% value of the supplied material whichever is less**
Phase II	Installation of all materials after Final Acceptance Test of all Equipment's of the System.	40% of bid value
Phase III	Completion of training and its result on being accepted by End user. Hand Holding Support after successful installation of the system and subsequent Go live of the entire system and issue of final acceptance certificate by the WBPHIDCL Engineer in charge.	15% of bid value
Phase IV	Maintenance support within the warrantee period of 3 years plus maintenance period of 2 years. a) After end of 1st year of post warranty maintenance period.	10% of bid value
	b) After end of 2nd year of post warranty maintenance period.	10% of bid value

The payment in phase IV should be so adjusted that the total payment will be equal to the value of actual work done as per the rates quoted in the BOQ.
The payment of RA as well as final bill for any work will be made according to the availability of fund and no claim for delay in payment will be entertained.

22. ACCEPTANCE CERTIFICATE

All Acceptance Certificates shall be issued by WBPHIDCL.

23. Return of Earnest Money of the Unsuccessful Bidder(S)

The Earnest Money of the unsuccessful Bidder(s) will be refunded automatically through online process if not forfeited by this Corporation.

24. WITHDRAWAL OF BID

Bidders are not allowed to withdraw the bid submitted for this NIT.

25. GUARANTEES

The Surveillance System including all components delivered at the sites should be brand new. The supplier should also guarantee that all the software / components supplied by the supplier is licensed and legally obtained.

26. AVAILABILITY OF SPARES

Spares for the product offered should be available for at least 06 years from the date of issue of completion certificate for the entire project.

27. WARRANTY

The offer must include comprehensive on-site warranty of three years from the date of acceptance of whole surveillance system after completion, testing and commencement of functioning of the system.

28. MAINTENANCE STANDARD EXPECTED DURING WARRANTY PERIOD (3 YEARS) AND MAINTENANCE PERIOD (2 YEARS- POST WARRANTY PERIOD)

The supplier should ensure that the defects in the CCTV System reported are set right on the same day (within 24 hours). In case, the system or any equipment cannot be repaired within the stipulated period, the supplier should provide a replacement till the system/equipment is returned duly repaired.

(i) The successful bidder shall undertake preventive maintenance of the system at all locations once in 3(Three) months (By 30th March, 30th June, 30th September and 30th December of each calendar year). Failure to comply with the above requirement will attract a penalty at the rate of 1% of the capital cost of the entire system for each location. The penalty shall be deducted from the security Deposit.

(ii) The successful bidder shall repair / replace the faulty equipment and carry out the necessary integration within 24 hrs from reporting of such failure. Failure to comply with the above requirement will attract a penalty at the rate of 1% of the capital cost of the particular unit / item for delay of every 24 hours after the initial 24 hours. The penalty shall be deducted from the security deposit.

29. CONTROL ROOM SETUP

Suitable cabling, arrangement of Power connectivity, networking etc that is required to run the application should be arranged and provided by the bidder. Space for control room and Power supply (230V, 50Hz) will be provided by the authority at a single point in the Control Room.

30. SYSTEM AVAILABILITY & SERVICE LEVEL AGREEMENT (SLA)

Service Level Agreement (SLA) shall be the part of the contract between WBPHIDCL and the successful bidder.
The end user refers to West Bengal Correctional Services.

SLA defines the terms of the successful Bidder's responsibility in ensuring the timely delivery of the deliverables and the correctness of the same based on the agreed Performance Indicators as detailed in this section. The successful Bidder has to comply with Service Levels requirements to ensure adherence to project timelines, quality and availability of services.
The successful bidder has to supply software / automated tools to monitor the infrastructure (all IP based equipments) and their uptime and performances and to integrate the same and to ascertain all the SLAs mentioned below:

Note: Penalties shall not be levied on the successful Bidder in the following cases:

- There is a force majeure event affecting the SLA which is beyond the control of the successful Bidder.
- The non-compliance to the SLA has been due to reasons beyond the control of the Bidder.

  Theft cases by default would not be considered as "beyond the control of bidder". However, certain cases, based on circumstances and certain locations, police may agree to quality as "beyond the control of bidder". Damages due to Road Accident / Mishap shall be considered as "beyond the control of bidder". However, Power shut down or deliberate damage to camera / Pole would not be considered as "beyond the control of bidder"

The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service which shall be provided by the System Integrator to the end user for the duration of this contract.

Definitions

For the purpose of this Service Level Agreement, the definitions and terms are specified in the contract along with the following terms shall have the meanings set forth below :

- "Uptime" shall mean the time period for the specified services / components with the specified technical service standards are available to the user department. Uptime, in percentage, of any component (Non IT & IT) can be calculated as
  Uptime = {1-[(Downtime)/(Total Time – Maintenance Time)]} * 100

- "Downtime" shall mean the time period for which the specified services / components with specified technical and service standards are not available to the user department and excludes downtime owing to Force Majeure & Reasons beyond control of the Successful bidder
- "Incident" refers to any event / abnormalities in the functioning of the services specified as part of scope of work of the systems Integrator that may lead to disruption in normal operations of the Surveillance System.

- "Helpdesk Support" shall mean the 24 x 7 x 365 centre which shall handle fault reporting Trouble Ticketing and related enquiries during the contract.
- "Resolution Time" shall mean the time taken (after the incident has been reported at the helpdesk) in resolving (diagnosing, troubleshooting and fixing) or escalating (to the second level or to respective Vendors, getting the confirmatory details about the same from the Vendor and conveying the same to the end user), the service related troubles during the first level escalation.

Measurement of SLA:

The SLA matrices provided specific performance parameters as baseline performance, lower performance and breach. All SLA calculations will be done on quarterly basis. The SLA also specifies the penalties for lower performance and breach conditions.

Payment to the successful bidder is linked to the compliance with the SLA matrices. The matrix specifies three levels of performance, namely,

- The agency will get 100% of the contracted value if the all baseline performance matrices are complied and the cumulative credit points are 100.
- The Agency will get lesser payment in case of the lower performance. (for e.g. if SLA point score is 80 then the Vendor will get 20% penalized on the quarterly payment.
- If the performance of the Agency in respect of any parameter false below the prescribed lower performance limit, debit points are imposed for the breach.

The credit (+) points earned during the quarter will be considered for computing penalty. The quarterly payment shall be made after deducting the penalty as mentioned above.

The aforementioned SLA parameters shall be measured per the individual SLA parameter requirements and measurement methods through appropriate SLA measurement tools to be provided by the Successful bidder and audited by the end user of its appointed consultant for accuracy and reliability. The system integrator would need to configure the SLA measurement tools such that all the parameters has defined under SLA matrix can be measured and appropriate reports be generated for monitoring the compliance.

The end user shall also have the right to conduct, either itself or through any other agency as it may deed fit an audit / revision of the SLA parameters. The SLA s defined shall be reviewed by the end user on an annual basis after consulting the SI, Project Management Consultants and other experts. All the changes would be made by the end user after consultation with the Successful bidder and might include some corrections to reduce undue relaxation in service levels or some corrections to avoid unrealistic imposition of penalty, which are noticed after project has gone live.

Total penalty to be levied on the successful bidder shall be capped at 10 % of the annual maintenance value. However, the Corporation would have right to invoke termination of the contract in case of the overall penalty equals 10% of the annual maintenance value, the Corporation would also have right to invoke termination of contract in case cumulative debit point (breach points) are above 30 in 2 consecutive quarters and in such cases of termination of contract, the Corporation may invoke the PBG and forfeit the same.

Planned Downtime

Any planed application / server downtime would not be included in the calculation of application / server availability. However, the Successful Bidder should take at least 10 days prior approval from the end user in writing for the planned outage which should not be for more than 30 minutes, would be in lean period (non-movement period, like post mid night) and limited to max. 4 outages in a year. In case of planned outages at Data Centre level, services of other Data Centre services to be used to service the clients, while there would be no planned outages for Cameras.

Pre Implementation SLA
Timely delivery of the Scope of Work.

Definition	Timely delivery of deliverables would comprise entire bill material and the application systems, and as per successful UAT of the same
Service Level Requirement	All the deliverables defined in the contract has to be submitted On – time on the date as mentioned in the contract with no delay.
Measurement of Service Level Parameter	To be measured in Number of weeks of delay from the timelines mentioned in the section "Project timelines".
Penalty for non- achievement Of SLA Requirement	Any delay in the delivery of the project deliverables would attract a penalty per week of 0.5% of the CAPEX of contract value per week for first 10 weeks and 0.75% per week for every subsequent week.

Security Breach SLA

Note – This SLA for Security Breach is applicable over and above the SLAs mentioned in above table.

Definition	Security of the video feeds and the overall system is quite important and successful bidder shall be required to ensure no compromise is done on the same. Security Breach types considered for this SLAs are – • Availability of Video feeds to any other user than those authorized by the Police Dept. and provided passwords. • Availability of any report / data to any other user than those authorized by the Police Dept. and provided passwords. • Successful hacking of any active component of the network by any standardized user. • Or any other privacy rule is broken as per Govt. of India guidelines.
Service Level Requirement	Security compliance of the system should be 100 %.
Measurement of Service Level parameter	Any reported security breach shall be logged into the SLA Management solution as a security breach.
Penalty for non-achievement of SLA Requirement	For every security breach reported and proved, there shall be a penalty of INR 200,000/-

31. DEVIATIONS

Tentative locations of installations and number and type of locations are enclosed with the document. However, the number, type and locations may change before placing the final order & award of the tender to the successful bidder. Final value of the cameras and other accessories shall be calculated on the basis of unit price quoted by the bidder.

32. MAINTENANCE CONTRACT

The supplier is to maintain the Surveillance System including all accessories/components and software supplied for at least two years after the expiry of warranty period (03 years). Comprehensive on-site maintenance charges, for the post warranty period, must be included in the financial bid.

After the comprehensive warranty and maintenance period of 5 years, the supplier may opt to get engage into an Annual Maintenance Contract at the price/charges as may be mutually agreed upon by the Corporation and the supplier. If any of the peripherals, components etc., are not available or difficult to procure or if the procurement is likely to be delayed, the replacement shall be carried out with equipment of equivalent capacity or higher capacity at no additional charges to the end user during the currency of warranty period and subsequent maintenance period.

33. RETRIEVAL OF RECORDING ON CD/DVD

As per requirement of the Correctional Home, if request is made by the Superintendent to the vendor for retrieving recording for a particular time period and preparing a CD/DVD of the same, the vendor should give required technical assistance to the concerned officer/staff of the directorate/department to retrieve and prepare such recording on CD/DVD within 24 hours of the request made. The CD/DVD would be provided by the Superintendent concerned for the purpose. The agency will provide this technical assistance upto the expiry of the maintenance period of the project.

Section-III

Technical Specification

Table – 1(*) : Minimum Guiding Specification (Mandatory)

i. *Bidder quoted each device / item / service has to be minimally compliant to the minimum guiding specification, asked for each device / item / service under concern.*

ii. *If any of the devices / items / services is not minimally compliant to the guiding specification with respect to a single parameter, the bidder will be technically disqualified and its bid will not be considered for further processing.*

iii. *Bidder quoted specification must be supported with hyperlinked and highlighted concerned section of the PDF (Portable Document Format) document, available from public domain / standards making body.*

iv. *Tender Committee may ask for technical clarification from bidder(s) on some parameters with in some specified duration, but this is not a binding on the Tender Committee. Technical Committee has authority to comment on the clarification of bidder(s) as unrelated / not satisfying / not compliant / satisfying. Only compliant bid or with bid with all satisfying clarification will be considered for further processing. All clarification must be supported with relevant and highlighted document, available from public domain / standards making body.*

v. *Bidder may mention necessary items, services, in tables against the mentioned row with parameter "Other Necessary Items, services for Integration" as deemed suitable by the bidder for comprehensively complete the job and commission the system.*

vi. *All supplies must be RoHS compliant.*

vii. *Integration: To have remote access to the system,* ***the system must be integrated / connected with the existing Ethernet based TCP /IP network*** *of Correctional Home with the IP address provided by the user, and necessary cables, connectors and work(as per applicable EIA/TIA or ISO std for structured cabling) must be provided / rendered by the bidder.*

viii. *As a part of technical bid, System Diagram of the systems with network and integration (of each site) must be provided and it should include minimally the following :-*

1. Architectural Diagram with labels and annotation

2. System Integration Diagram with make and model of each sample device / system (as quoted).

3. Network Diagram with make and model of Active and Passive components, as applicable. Network should have load balanced multiple path between switching and routing devices to avoid path failure and to use aggregated bandwidth.

ix. *Site Readiness Form [8(D) (Section-IV)] should be filled in by the successful bidder jointly with end-user and end-user entrusted organisation which includes site survey, as applicable.*

x. *Successful Proof of Concept / Miniature Sample Setup with all software functionalities and sample switching devices with all different types of sample edge devices (camera with accessories) , as quoted, should be carried out at WBPHIDCL identified location, date and duration, and it is mandatory for technical evaluation.*

After installation, contracted bidder, must provide the following, for each site, as applicable

1. *Installation certificate duly signed by the end-user for the entire system with list of components, mentioning make, model, sl. no. etc. and stipulated warranty period.*
2. *Training Completion Certificate, duly signed by the end-user.*
3. *All 3 types of diagrams [as mentioned above at viii] as implemented at each site*
4. *System Configuration Document detailing parametric value set and configuration scripts / Commands of devices and systems (server, network devices, storage, cameras, displays, UPSes etc.)*
5. *Network should be certified minimally for 15 years for all passive components by the OEM, for each site, and network test (success) report must also be submitted.*
6. *Any change in configuration must be reflected in Supplementary Configuration Document, during warranty and AMC period, as applicable.*

7. All access credentials(User Id, password etc) along with IP address, device name, location with respect to each device, systems etc should be submitted to the end user and acknowledgement of such received by end user should be submitted to the authority.

xi. *Submission of Manufactures Authorisation Certificate from the OEM mentioning the tender, stipulated warranty period, serviceability with components for the mentioned AMC period, against each devices and system (with make, model), as quoted by the bidder, is mandatory.*

Table – 2: IP Varifocal Dome Camera (Outdoor, 3MP)

Make :
Model :
O.S :
Firmware:

Sl No.	Camera Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	*Image Sensors*	*1/3" to 1/2.8 " Progressive CMOS or better*				
2. *	*Resolution*	*2048x1536 (3MP)@25/30 fps*				
3. *	*Lens Type*	*Vari-Focal*				
4. *	*Focal Length*	*f = 3 ~ 9 mm or better*				
5. *	*Aperture*	*F1.2 ~ F2.3*				
6. *	*Auto-iris*	*P-iris/DC iris/Video iris(should be mentioned by the bidder)*				
7. *	*Field of View*	*41° ~ 86° (Horizontal)* *31° ~ 64° (Vertical)* *51° ~ 113 (Diagonal*				
8. *	*Shutter Time*	*1/5 sec. to 1/10000 sec. or better*				
9. *	*Day/Night*	*Auto switch,scheduled, configurable IR*				
10. *	*Minimum Illumination*	*0.01 Lux @ F1.2 (Color) or better* *0Lux with IR*				
11. *	*Pan/Tilt/Zoom Functionalities*	*e-PTZ:* *48x digital zoom (4x on IE plug-in, 12x built in)*				

12. *	*IR Illuminators*	*30 meters*				
13.	*On-board Storage*	*Slot type: MicroSD/SDHC/SDXC card slot*				
		Seamless Recording				
Video						
14. *	*Compression*	*H.265,H.264 & MJPEG*				
15. *	*Frame Rate*	*30fps@ 2048x1536*				
		MJPEG:				
		15fps@ 2048x1536				
16. *	*Maximum Streams*	*3 simultaneous streams or better*				
17.	S/N Ratio	43 dB or better				
18.	Dynamic Range	100 dB or better				
19. *	Video Streaming	Adjustable resolution, quality and bitrate				
20.	Image Settings	1.Time stamp, 2.text overlay, 3.flip & mirror				
		Configurable brightness, contrast, saturation, sharpness, white balance, exposure control, gain, backlight compensation, privacy masks				
		Scheduled profile settings, 3DNR, video rotation, defog, DIS				
Audio						
21.	Audio	Two-Way				

*	Capability	Audio				
22. *	Compression	G711, G726				
23.	Interface	External microphone input				
		Audio output				
Network						
24. *	Users	Live viewing for up to 10 clients.				
25. *	Protocols	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE, QoS, SNMP, 802.1X, UDP, ICMP, ARP, SSL, TLS				
26. *	Interface	10 Base-T/100 BaseTX Ethernet (RJ-45)				
27. *	ONVIF	Profile S, G etc (bidder should mention ONVIF profiles) and make & model must be conformant at www.onvif.org for mentioned profile.				
Intelligent Video						
28. *	Video Motion Detection	configurable, multiple area, polygonal area, video motion detection				
Alarm and Event						
29. *	*Alarm Triggers*	*Motion detection, manual trigger, digital input, periodical trigger, camera tampering detection, audio detection*				

30.	*Alarm Events*	*Event notification using digital output, HTTP, SMTP, FTP, NAS server and SD Card* *File upload via HTTP, SMTP, FTP, NAS server and SD card*				
General						
31.	Smart Focus System	Remote focus				
32. *	Connectors	RJ-45 cable connector for Network/PoE connection Audio input Audio output DC 12V power input Digital input*1 Digital output*1				
33.	LED Indicator	System power and status indicator				
34. *	Power Input(anyone as necessary)	12V DC IEEE 802.3af/at PoE Class 0/3				
35.	Power Consumption	Max. 12 W				
36. *	Casing	Weather-proof IP66-rated housing Vandal-proof IK10-rated metal housing				
37. *	Safety Certifications	CE, FCC , UL				
38. *	Operating Temperature	Working Temperature: -10°C ~ 50°C				
39. *	Humidity	90%				
40. *	Firmware Updation	Non-destructive				
41. *	Configuration	Backup and upload capability				

Table – 3 : IP Varifocal Bullet Camera(Outdoor 3MP)
Make :
Model :
O.S :
Firmware:

Sl No.	Camera Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	Image Sensor	1/ 3" to 1/2.8" CMOS or better				
2.*	Min. Illumination	0.06 Lux @ F1.2 (Color), 0.008 Lux @ F1.2 (B/W), 0 Lux with IR Or Color mode: 0.1Lux @ F1.4 (30IRE, AGC ON); B/W mode: 0 Lux (IR ON)				
3.*	Shutter Speed range	1s ~ 1/10,000s or better				
4.*	Slow Shutter	Yes				
5.*	Lens	3mm ~9mm OR 2.8 - 12 mm				
6.*	Day & Night	*Auto switch,scheduled, configurable IR*				
7.*	WDR	Yes				
	Compression Standard					
8.*	Video Compression	H.264,H.265,MJPEG				
9.*	Video Bit Rate range	32 kbps to 12 Mbps More				
	Image					
10.*	Resolution	2048 x 1536 @ 25/30fps				
11.*	Multi Stream	Yes (3 streams)				

12.*	Image Enhancement	BLC/3D DNR/ROI/Defog				
13.*	Image Setting	Rotate Mode, Saturation, Brightness, Contrast, Sharpness adjustable by client software or web browser				
14.*	Day/Night Switch	Auto/Schedule/Triggered by Alarm				
	Network					
15.*	Network Storage	NAS Supported				
16.*	Alarm Trigger	Intrusion detection, scene change detection, Motion detection, Tampering alarm, Network disconnect, IP address conflict, Storage exception				
16.*	Protocols	IPv4, IPv6, TCP, UDP, IGMP, DHCP, FTP, SNMP (V3), SMTP, NTP, RTP, RTSP, RTCP, HTTP, HTTPS, TSL, SSL, 802.1X, QoS, PPPoE, DNS, ARP, ICMP, UPNP, DDNS				
17.*	Security	One key recovery, flash-prevention, three streams,				

		password protection, video mask, IP address filtering, Anonymous access				
18. *	Standard	Profile S, G etc (bidder should mention ONVIF profiles) and make & model must be conformant at www.onvif.org for mentioned profile.				
	Interface					
19. *	Communication Interface	1 RJ45 10M/100M Ethernet port				
20. *	Reset Button	Yes				
	General					
21. *	Protection Level	IP66, IK10				
22. *	Operating Conditions °C , Humidity	-10 °C ~ 50 95% or less (non-condensing)				
23. *	Power Supply	PoE (IEEE 802.3af, Class 3) / 12VDC (±15%) / 24VAC (±25%)				
24. *	IR Distance	Up to 30m				
25.	Certification	CE, FCC, UL				
26. *	Firmware Updation	Non-destructive				
27. *	Configuration	Backup and upload capability				

Table – 4: IP PTZ Camera

Make :
Model :
O.S :
Firmware:

Sl No.	Camera Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	Image Sensors	1/ 3" to 1/2.8" Progressive CMOS or better				
2.*	Min. Illumination	Color mode: 0.005 lux @ F1.5 (AGC ON) B/W mode: 0.0005 lux @ F1.5 (AGC ON) 0 lux (IR ON) OR 0.5Lux @ F1.6 (Color) 0.004 Lux @ F1.6 (B/W) 0 lux (IR ON)				
3.*	Image Resolution	1920×1080 @ 25/30 fps				
4.*	Lens	f = 4.3 ~ 129 mm /30x zoom				
5.*	Optical Zoom	30X or better				
6.*	Angle of View	2.3° ~ 64° (Horizontal) 1.3° ~ 36° (Vertical) 2.6° ~ 73° (Diagonal) Or better				
7.*	Focus Mode	Auto / Semiautomatic / Manual				
8.*	WDR	100dB or better				
9.	S / N Ratio	≥ 55dB or better				
10.*	Shutter Time	1~1/20,000s or better				

11. *	AGC	Auto / Manual				
12.	White Balance	Auto / Manual /ATW/Indoor/Outdoor				
13. *	Day & Night	*Auto switch,scheduled, configurable IR*				
14. *	Privacy Mask	24 privacy masks programmable; optional multiple colours and mosaics				
15. *	Enhancement	3D DNR, EIS, Defog, AWB, HLC,BLC, SVC				
Pan and Tilt						
16. *	Range	Pan:360° endless; Tilt: -16°~90°(Auto Flip)				
17. *	Speed	Minimum Pan Manual Speed: 0.1°~160°/s, Minimum Pan Preset Speed: 240°/s Minimum Tilt Manual Speed: 0.1°~120°/s, Minimum Tilt Preset Speed: 180°/s				
18. *	Number of Preset	255 or better				
19.	Patrol/Cruise	8 patrols/cruise, up to 32 presets per patrol/cruise				
20. *	Pattern	Minimum 4 patterns, with the recording time not less than 10 minutes per pattern				
21. *	Park/Guard Action	Preset / Patrol / Pattern / Scan				
Smart Features						
22. *	Smart tracking	Manual/ Intrusion trigger/ Line crossing trigger/ Region entrance trigger/ Region exiting trigger				

23. *	Smart detection	Intrusion detection, line crossing detection, region entrance, region exiting, motion detection, foreign object detection				
24.	ROI encoding	Support 24 areas with adjustable levels				
Infrared						
25. *	IR Distance	Minimum 150m or better				
26.	IR Intensity	Automatically adjusted, depending on the zoom ratio				
Alarm						
27. *	Alarm Trigger	Intrusion detection, Line crossing detection, Region entrance, Region exiting, Motion detection, Tampering alarm, Network disconnect, IP address conflict, Storage exception				
28. *	Alarm Action	Preset, Patrol, Pattern, Relay output, Notification on Client				
Input/Output						
29. *	Monitor Output	1.0V[p-p] / 75Ω, NTSC (or PAL) composite				
30. *	Audio Input	1 Mic in/Line in interface, line input: 2-2.4V[p-p]; output impedance: 1KΩ, ±10%				
31. *	Audio Output	1 Audio output interface, line level, impedance: 600Ω				

Network						
32. *	Ethernet	10Base-T / 100Base-TX, RJ45 connector				
33. *	Main Stream	30fps(1920×1080, 1280×960, 1280×720)				
34. *	Sub Stream	30fps(704×480, 352×240, 176×120)				
35. *	Third Stream	30fps(1920×1080, 1280×960, 1280×720, 704×480, 352×240, 176×120)				
36. *	Image Compression	H.265, H.264,MJPEG,MPEG4, encoding with Baseline/Main/High profile				
37. *	Audio Compression	G.711ulaw,G.711alaw,G.726,MP2L2, G.722				
38. *	Protocols	IPv4/IPv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP, PPPoE				
39.	Simultaneous Live View	Up to 20 users				
40.	User/Host Level	Up to 32 users,3 Levels: Administrator, Operator and User				
41. *	Security Measures	User authentication (ID and PW); Host authentication (MAC address); IP address filtering				
System Integration						
42.	Application programming	Open-ended API, support ONVIF profile S,G				
43. *	Web Browser	IE/edge, Chrome ,Firefox				

		, Safari , As updated in client brower			
44.	RS-485 Protocols	Pelco-P, Pelco-D, self-adaptive			
45.	Power	12VDC or 24 VAC or better, PoE+			
46. *	Working Temperature	-10°C ~ 50°C			
47. *	Humidity	90% or less			
48. *	Protection Level	IP66, IK10, surge protection and voltage transient protection			
49. *	Certification	FCC, CE, UL			
50. *	Firmware Updation	Non-destructive			
51. *	Configuration	Backup and upload capability			

Table – 5: Video Recording/Management Server Hardware Specification

Make :
Model :
O.S :
Firmware:

Sl No.	Server Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	VMS shall be installed on Standard Servers and storage technologies	The Video Management System shall be installed either on Linux or Latest Windows servers as per user's choice. Accordingly, the server hardware should support both Open source Linux and Microsoft Windows Operating systems.				
		VMS shall allow connecting up to 100 cameras of 3.0MP resolution to a single Recording server. Accordingly, the NICs and other resources are to be provisioned in the servers.				
2.*	Processors	1.SPECInt_rate_base2006 >= 500 2. x86 64-bit architecture with seemless execution for x86 32 bit binary 3. Multiple processor , multicore 4. Mention make, model, processor				

		no, core / processor, thread / processor (if any)				
3.*	RAM:	Installed 128 GB DDR4 2400MHz, expandable to 256GB				
4.*	HDD type:	2.5in, 10K RPM, 4x300GB SAS (12 Gbps)				
5.*	RAID:	Integrated RAID Controller (RAID 0,1,5,10)				
6.*	Surveillance HDD:	2 x 4 TB, NL SAS (7200 rpm, 12 Gbps) Surveillance grade.				
7.*	Optical Drive:	1 CD/DVD DL RW Drive				
8.	Power Supply:	Dual Redundant Power Supplies with auto failover				
9.*	Dimension:	1U/2U Rack mounts, with in-built channels for mounting.				
10.*	Operating System:	(a) Windows 2016 or latest server edition OS from Microsoft OR (b) Ubuntu 18.04 LTS or higher with GUI / latest compatible Linux Server Operating system with media and license / support(as applicable) for quoted application software (e.g, VMS) requirement, and compatible with the quoted server				
11.*	Video Output:	1 HDMI or VGA port with stereo audio interface and all associated interface cables				
12.	Others:	2x USB ports.				
13.	Operating Temp:	-10° C to 50° C				

14.	Humidity:	20%-90% relative humidity (Non condensing)				
15.*	Certifications:	CE, FCC, UL				
16.*	Firmware updation:	Non-destructive				
17.	Network Interface	1. 2 x 2 x 10 Gbps Ethernet with RJ-45 compatible interface to be configured in 802.3 ad or equivalent 2. 2 x 1 Gbps RJ-45 compatible interface to be configured in 802.3 ad or equivalent ;3.All Ethernet interfaces are to be connected to core switch with compatible cables.				

Table – 6: Core Switch

Make :
Model :
O.S :
Firmware:

Sl No.	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
Port Density and Architecture					
1.*	Switch should be 1RU 19" rack mount Layer 3 stackable switch with redundant 220V AC field-replaceable, hot-swap power supplies and redundant fans				
2.*	Switch must have a non-blocking architecture for line-rate switching on all ports.				
3.*	Switch must have 24 SFP ports and 24 Port 10/100/1000 Base-T Copper Combo ports and additional 4 port SFP+ ports, with min 4 nos of 10 Gbps Ethernet with all cable accessories to connect to Server and with another min 2 x 2 nos of 10 Gbps Ethernet to be connected to 4 x 10 Gbps iSCSI interfaces of Storage. Each switch should have min 16 Ports populated with 1000X SFP module for min 10 Kilometer (Single mode) from day 1. 2 nos Ethernet RJ-45 ports to be connected with all cable & accessories				

	to Server				
4.*	The switch should have capability on active-active clustering or VSS to ensure seamless switch over of traffic between the switches in case of any kind of link or hardware failure to ensure no traffic disruption for real time voice and video applications.				
5.*	The switch shall support Static Route, RIP, RIPng, OSPF, OSPF v3 including for IP Multicasting (PIM v4, PIMv6) for CCTV video and VOIP applications.				
6.*	Core switch should connect to non-core switch with one direct link, and the concerned non-core switch is to be connected to at least one near-by switch.				
7.	Should have option for min 40 Gbps of stacking/VSS interconnection bandwidth. All the accessories/ Software/ cards/ cables for stacking/VSS or equivalent should be provided.				
Performance					
8.	Forwarding Rate 200 Mpps or more, Switching Fabric 280 Gbps or more				

9.	Extensive wire-speed traffic classification for ACLs and QoS				
10. *	Supports Jumbo frame size of up to 12Kbytes				
11.	Support Wire-speed multicasting				
12. *	Min 64K MAC addresses & 4K VLANs				
13.	Switch should have inbuilt mechanism for monitoring about any malfunction like power supply or internal temperature (full internal en vironment).				
Reliability					
14.	STP, RSTP, MSTP for loop protection				
15.	ERPS or Equivalent ring technology shall have the high reliability functionality to ensure sub 50-ms convergence in case a link is broken in the ring.				
VLAN support					
16.	Supports 4094 VLANs				
17.	IEEE 802.1Q Virtual LANs				
Routing					
18.	Should support Static Route				
19.	Should support RIP v1/v2 , RIPng				
20.	Should support OSPF, OSFPv3				
IPv6 Features					
21. *	IPv4 and IPv6 Dual Stack at HW level				
22.	IPv6 Management				

*					
23. *	IPv6 operation of SNMP, Telnet, SSH				
24.	NTP Client and server (for time synchronization)				
25.	Neighbour Discovery for IPv6				
26.	Internet Control Message protocol (ICMPv6)				
27.	Should support IPv6 Addressing Architecture				
Multicast Support					
28.	IGMP v1,IGMP v2, IGMPv3 Snooping				
29.	MLD Snooping				
30.	PIM based IP-multicast				
Layer2 Security					
31.	Support 802.1x based Authentication of end-points				
32.	BPDU Protection and STP Root Guard, Access Control List based on Layer 3 and layer 4, Dynamic VLAN.				
33.	RADIUS, TACACS +				
34.	Should support MAC address filtering and MAC limiting / MAC Lock down functionality				
35.	The switch should support detection and mitigation of Denial of Service (DoS) attack.				
Quality of Service					
36.	Traffic classification on priority requirement				
37.	Mixed scheduling or				

	equivalent to support complex traffic queuing requirements				
38.	8 QoS queues per port, and support Voice VLAN, LLDP-MED				
39.	Diff Serv model of QoS, Strict Priority, Round Robin.				
40.	Access Control Lists (ACLs) and IEEE 802.1p Priority Tagging				
41.	64 Kbps bandwidth limiting per port or per traffic class				
Management					
42.	GUI, Industry-standard CLI				
43.	Port mirroring and RMON (4 Groups)				
45.	Out of band 10/100/1000 Ethernet management port and console management port				
46.	SSH and SNMPv3 for secure management				
47.	NTP and Syslog and sFlow or equivalent				
Approvals					
48. *	UL,CE, FCC certified				
49. *	Firmware Updation should be non-destructive				
50. *	Configuration-backup, upload				

Table – 7: 4 Port PoE Edge Industrial Switch

Make :
Model :
O.S :
Firmware:

Sl No.	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	The switch should have IEEE 802.3 at/af compliant 4 ports 10/100/1000 TX and with 2 Nods SFP and shall be loaded with 2x1000FX Single mode SFP, MSA compliant, 10Km				
2.*	Switch shall have IEEE 802.3af/at compliant PoE ports offering a min. power budget of 120W. The switch shall have -48V DC dual power units.				
3.*	The switch should have min. 12 Gbps of switching capacity				
4.	Edge switches must be Industrial grade with Min. IP 30 Metal Case and is intended to be housed inside enclosures on outdoor environment.				
5.	Switch should support the Ring connectivity to ensure sub 50-ms convergence in case a link is broken in the ring.				
6.	Switch shall support security features like DHCP Snooping , Dynamic ARP Inspection , IP Source Guard, ARP Snooping/ Spoofing, Access Control List				
7.	The switch shall support IEEE 802.1D Spanning-Tree Protocol, IEEE 802.1D-Rapid Spanning-Tree Protocol and IEEE802.1q-Multiple Spanning-Tree Protocol, BPDU guard, Loop protection and Root guard.				

8.	Shall have Access Control features to support 802.1x based port based access control and MAC filtering.				
9.	Ambient operating temperature (-40 to + 75 Deg. C)				
10.	Should support management over IPv6 networks with SNMPv6, Telnetv6 and SSHv6				
11.	Switch shall have 2K MAC address and shall support jumbo frame up to 9216 bytes				
12.	Should support Alarm Input for detection of local signal e.g. related to enclosure access				
13.	CE, FCC, UL Certified				
14.	Non destructive firmware updation				
15.	Configuration- Backup, upload				

Table -8. 8 Port PoE EDGE SWITCH for VIDEO TRANSMISSION

Make :
Model :
O.S :
Firmware:

Sl No.	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/ compliant with clarification (2)Non-compliant	Remarks
1.*	The switch should have IEEE 802.3(at ,af etc) compliant 8 ports 10/100/1000 TX and with 2 SFP and shall be loaded with 2x1000FX Single mode SFP, MSA compliant, 10Km				
2.*	Switch shall have IEEE 802.3af/at configurable PoE ports offering a min. power budget of 120W.				
3.	The switch shall be powered by 230 AC power unit.				
4.	The switch should have min. 20 Gbps of switching capacity				
5.	Switch should support the Ring connectivity to ensure sub 50-ms convergence in case a link is broken in the ring.				
6.	Switch shall support security features like DHCP Snooping , Dynamic ARP Inspection , IP Source Guard, ARP Snooping/ Spoofing, Access Control List				
7.	The switch shall support IEEE 802.1D Spanning-Tree Protocol, IEEE 802.1D-Rapid Spanning-Tree Protocol and IEEE802.1q-Multiple Spanning-Tree Protocol, BPDU guard, Loop protection and Root guard.				
8.	Shall have Access Control features to support 802.1x based port based access control and MAC filtering.				

9.	Ambient operating temperature (-10 to + 50 Deg. C)			
10.	Should support Static Route, RIP			
11.	Switch shall have 16K MAC address and shall support jumbo frame up to 9216 bytes			
12.	Should support management over IPv6 networks with SNMPv6, Telnetv6 and SSHv6			
13.	Switch should support Policy-based QoS on MAC, Port , VLAN and Protocol			
14. *	CE,FCC,UL Certified			
15. *	Non-destructive firmware updation			
16. *	Configuration- Backup, upload			

Table -9: UNINTERRUPTED POWER SUPPLY (UPS) for Control Room
Make :
Model :
O.S (as applicable) :
Firmware (as applicable):

Sl No.	Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	Rectifier Type	IGBT Rectifier				
2.*	Configuration	UPS should be in Parallel mode with 50% load share (1+1).				
3.*	Input Voltage Range	Single Phase 176Vac-300Vac				
4.*	Input Frequency Range	46Hz~54Hz				
5.*	Input Power Factor	>=0.99 for single phase				
Battery						
6.*	Battery Type	Lead acid maintenance free battery				
7.	Charging Capacity	<3h for 90% re-charging of standard model				
8.*	No. of Battery units	20				
Output Parameters						
9.*	Rated Power	6KVA /4.8KW				
10.	Rated Voltage	Single phase 220 VAC				
Voltage Regulation						
11.*	(Batt. Mode)	+/- 1%				
12.	Input Frequency	46Hz~54Hz				

	range					
13.*	Output voltage THD	<3% for linear load,<7% for non linear load				
14.	Load crest factor	3:1(comply with IEC 62040-3)				
15.	Step Load Performance	100%				
16.	Output mode	Terminal strip				
System parameters and standard						
17.	Conversion type	Online double conversion				
18.	Installation mode	Rack-mounted				
19.*	System Efficiency	>89%				
20.	Switching time	0ms				
21.*	LCD Display	Yes				
22.*	Safety	IEC/EN62040-1-1				
23.	Surge Protection	A UL certified Transient Voltage Surge Suppressor will have to supplied at the input of the UPS system of minimum 25kA Capacity with all mode protection and response time of nano seconds.				
*24.**	*Access & Monitor*	*IP based with SNMP*				

Table – 10: Video Management Software
Make :
Model :
O.S :
Application Software:

Sl No.	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/ compliant with clarification (2)Non-compliant	Remarks
VMS Openness					
1.	VMS shall be open to any IP camera integration over ONVIF Profile S and G. It should support both Windows and Linux operating system on Server Machine. It should support Windows, Linux, and Mac OS on Client machine, independent of what operating system is there in the servers. Only Microsoft Windows OS supported system will be not be acceptable.				
2.	The software OEM should have its own development and/or customization centre in India so that customization as per user requirement can be done as and when required. The Software OEM with Indian Intellectual Property will be preferred due to highly sensitive security requirement.				
3.	The VMS must have in-built framework to augment Video analytics applications (Crowd formation detection, Vehicle congestion detection, Wrong parking detection, Face capture, etc) at any later point of time, with mere software upgrade.				
4.	VMS should have the options to customize various messages and prompts as per user given texts.				

5.	The VMS OEM shall furnish the software architecture for each software component offered for this project.				
6.	The Software should have a single unified CCR Software to integrate multiple Autonomous cities with same VMS (different city VMS system within the state, in future).				
7.	VMS shall be open to any standard storage technologies integration. It should support Local HDD, DAS, and Network Storages (NAS, SAN).				
8.	In that respect, VMS shall already support Storage system from at least three (3) major vendors. Bidders shall clearly list in their proposal the brands and models already supported into VMS and the installation sites.				
9.	VMS shall be open to any video wall system integration.				
10.	VMS system should be from the same manufacturer, to ensure seamless integrated performance of all required functionalities. VMS should support Remote access for Live viewing and Archive search using any standard Browsers, e.g., Mozilla, Chrome, IE, etc as updated in client machine.				
11.	VMS should have Open interface over TCP/HTTP to send Video stream of any Camera to any external software running in a different machine in the same LAN.				
12.	VMS should have Open Interface to send Analytics event alerts and other Maintenance alerts (Camera disconnection, Storage Full, DBMS disconnection, etc) over HTTP protocol to any external application running in a different machine in the same LAN.				
13.	VMS should support open				

	source DBMS, e.g., PostgreSQL, MySQL besides proprietary DBMS like MSSQL, Oracle, etc.				
14.	DBMS: It should be part of VMS delivery without any extra cost to the buyer.				
15.	VMS shall be seamlessly integrated with Video content analytics.				
VMS Distributed Architecture					
16.	VMS shall be designed to offer a full IP based distributed architecture.				
17.	VMS shall have the capability to handle software clients (operators) connected in at least 5 different physical locations spread geographically apart, and connected through WAN/MAN connectivity.				
18.	VMS shall be accessible using any Standard Web browser (Safari, Firefox, Internet Explorer, Chrome, etc) for live view, archive search and Event search.				
19.	VMS should be able to stream video of at least 4 channels simultaneously to any remote clients over 3G/4G Network as available in India.				
VMS Management					
20.	VMS shall allow managing initial client logon, system configurations, logging, remote administration of recording servers, devices, security, rules, alerts and logging.				
21.	VMS shall store the system's configuration in a relational database. The user shall have the option to choose Open source free DBMS like PostgreSQL, MySQL, etc.				
22.	VMS shall support at least 5 levels of users with various privileges to access the system				

	functionality. Each category of users shall have selectable rights to perform various operations like Camera add/delete, Change camera settings, Configure storage, Control PTZ cameras, User management, etc.				
23.	The System health status like Server failure, Camera disconnection, Storage full, etc shall constantly be displayed at the top panel in Client UI.				
24.	VMS shall maintain a continuous log of server status messages, Camera connectivity, Storage status, Recording ON/OFF, User activity logs, etc which shall be accessed from the Workstations using different filters.				
25.	VMS shall be able to detect IP devices automatically.				
26.	VMS shall store all configuration data of Servers, Analytics application settings, Camera recording Schedules, User login credentials, Archived video files etc in a single unified Database.				
27.	VMS shall allow the user with Administrator privilege to import any Operator's screen on his/her desktop to watch the operator's activity on-line.				
28.	VMS shall support multi-layer hyperlinked maps in form of JPEG files. Cameras can be dragged and dropped from the map on Video tiles for click-n-view on Client viewer.				
Failover Support					
29.	The system shall support automatic failover for recording servers. The allocation of Cameras to recording servers shall be done automatically by the VMS in a load balanced manner. On failure or any particular Recording server, the cameras associated with the failed				

	server should be automatically distributed across all the active servers without any human intervention. When the failed server becomes active, cameras will be automatically allocated to the server again without any human intervention. There shall not be any need to deploy a dedicated redundant server for this purpose.				
30.	VMS shall support Failover against temporary disconnection of DBMS Service, without any loss of camera video. As soon as the DBMS service resumes, all data should automatically be stored to Database.				
31.	Once configured, the Video Management System shall not require reconfiguration of any kind when any server passes through a power Off-On cycle.				
32.	The system shall provide seamless access to recordings on the failover server for all clients through the same client views once the services are fully started.				
Multicasting and Multi-streaming					
33.	VMS shall also be able to operate in multicast protocol to minimize the network bandwidth				
34.	The infrastructure provided for VMS shall support IGMP				
35.	VMS shall support H.265, H.264 and MJPEG stream for both live view and Recording independently. Compression rate shall be manageable				
36.	VMS shall support at least CIF, 2CIF, 4CIF/D1 and HD/Megapixel resolution				
37.	VMS shall include automatic camera discovery function and intuitive configuration wizards				
38.	While in Unicast streaming, the VMS shall support flow control independently for each client.				

39.	The VMS shall be able to stream standard H.265, H.264 camera video streams to any external software on demand basis.				
40.	SNMPv3 Support: The system shall support Simple Network Management Protocol (SNMP) version3 or above in order for third-party software systems to monitor the system. The service should be available in Windows and Linux OS based systems alike.				
41.	NAT Firewall Support: The system shall support port forwarding, which shall allow clients from outside of a Network Address Translation (NAT) firewall to connect to the system without using a VPN.				
42.	To ensure security and ease of Firewall deployment, only one Server shall be allowed to be exposed to Internet for delivering services to all the remote clients sitting on the Internet. The remote clients shall access only that server to access the system for all the functionality.				
43.	Health Monitoring: Health monitoring module shall allow for continuous monitoring of the operational status from servers, cameras and other devices. The health monitoring module shall provide a real-time overview of technical problems while allowing for immediate visual verification and troubleshooting. Health monitoring module shall provide interface and navigational tools through the client, including:				
44.	Graphical overview of the operational status from servers, network cameras and external devices including motion detectors and access control systems.				

45.	Intuitive navigation using a map-based, hierarchical structure with hyperlinks to other maps, servers and devices or through a tree-view format.				
46.	Health monitoring module shall provide intuitive alarm management through the use tools including: -				
47.	Detailed listing of all active or incoming alarms with available filters for time period, alarm source, operator and alarm state.				
48.	Ability to preview, view live or playback recorded images.				
49.	Automatically close an alarm based on a corresponding event.				
50.	Generate audit trail reports by incident.				
Cameras					
51.	VMS shall allow camera clustering based on Locations as well as Groups independently.				
52.	Each operator shall be able to monitor one or several clusters of camera				
53.	It shall be able to prevent an operator from viewing/managing one or several clusters				
54.	VMS shall allow managing at least 100 clusters of camera				
55.	Quantity of cameras per cluster shall be unlimited				
56.	At any given time it shall be possible to block sensitive video from being viewed by some non-Authorized Users				
57.	It shall be possible to apply the common parameters to several/all cameras of the same cluster through a unique settings session				
58.	Parameter settings shall be adjusted based on camera manufacturer contextual menu				
59.	Following typical camera Parameters shall be				

	manageable:				
60.	Brightness, compression, contrast, include date and time, resolution, rotation,				
61.	Frame per second, bit rate control mode, maximum bit rate, bit rate control priority, target bit rate,				
62.	Camera's Name, Description, Hardware name and Part number,				
63.	Storage and recording settings, maximum storage limits and database configuration. The total hard drive space used to store the camera's recorded data shall be displayed.				
Archiving settings					
64.	Preset positions (if the selected camera is a PTZ camera)				
65.	Patrolling profiles (if the selected camera is a PTZ camera)				
66.	Hardware configurable events				
Logs					
67.	The system log shall be searchable by Level, Source and Event Type.				
68.	The Audit Log records remote user activity (searchable by User name, Audit ID, Source and Location)				
69.	The Alert Log records alerts triggered by rules (searchable by Alert type, Source and Event type)				
70.	The Event Log records event-related information (searchable by Component name, Source and Event type)				
71.	The Rule Log records rules in which the Make new <log entry> action been specified (searchable by Service name, Source, Event type and Rule name)				
VMS Client Viewer (Operator) features					
72.	VMS shall provide feature-rich administration client for system configuration and day-to-day administration of the system				
73.	The Client Viewer shall provide				

	a Graphical User Interface (GUI) for the convenient access of live and recorded video as well as camera properties and display quality				
74.	The Client Viewer shall support real time simultaneously view of 1, 2x2, 3x3, 4x4, 1+5, 1+7, 1+9, 1+11, 1+15 and 6x6 multi-tile video display and a simple click shall allow enlarging any of the tile display into a full screen display. On clicking again on the enlarged display, multi-tile display shall reappear.				
75.	It shall be possible to drag and drop cameras from the camera directory to the display screen.				
76.	The Client Viewer shall offer the capability of browsing recordings from cameras on the same panel where other cameras are displayed live. There shall be provision to replay multiple such cameras from various timestamps, independent to one another.				
77.	The Client viewer shall have the feature to synchronize replay of selected cameras/all cameras in the view panel.				
78.	VMS shall select the appropriate video stream from camera for display depending on the display resolution to optimize the network bandwidth.				
79.	Digital zooming shall be possible both on live view as well as on Replay view on Fixed as well as PTZ Cameras.				
80.	The Client Viewer shall support the use of standard PTZ controller or 3-axis USB joysticks for control of pan, tilt, zoom and auxiliary camera functions.				
81.	The Client viewer shall show on-screen floating PTZ buttons when mouse is placed on a PTZ Camera live view panel. On				

	screen adjustment of PTZ speed shall also be there so that the speed can be adjusted independently for each camera.				
82.	The Client Viewer shall support the use of keyboard shortcuts for control of standard features.				
83.	The Client Viewer shall have the following two-way audio functions:				
84.	The Client Viewer shall allow an operator to play live audio from a camera's microphone and play back recorded audio.				
85.	The Client Viewer shall allow an operator to export audio together with video in the AVI format.				
86.	The operator shall have a "press to talk" option which shall send the microphone input from the operator out to camera attached speaker.				
87.	From the Client Viewer it shall be possible to				
88.	Run instant replay of any camera on display				
89.	Bookmark of any important event to facilitate search and retrieval				
90.	Bookmark the display layout with selected distribution of cameras across the panel				
91.	Client viewer shall allow the operator to drag a line on the Sitemap touching one or more cameras. All the cameras touched by the line shall appear for live view on the screen.				
92.	Client viewer shall allow watching live video of any selected camera on the map itself on clicking the camera icons on the map. Multiple such live video can be displayed simultaneously on the map.				
93.	Activate manually triggered				

	events.				
94.	Use sound notifications for attracting attention to detected motion or events or camera disconnection.				
95.	Get quick overview of sequences with detected motion.				
96.	Get quick overviews of detected alerts or events.				
97.	Quickly search selected areas of video recording for motion				
98.	Skip gaps during playback of recordings.				
99.	Configure and use several different joysticks.				
100.	Print images, with optional comments.				
101.	Copy images for subsequent pasting into word processors, email, etc.				
102.	Export recording (e.g. for use as evidence) in AVI or MJPEG formats				
103.	The Client Viewer shall have the capability to receive multicast streams if a preset number of clients are requesting the same live view camera. The Operator shall have the option to configure the system to always receive unicast streams at the discretion of the system administrator.				
104.	The operator shall have the ability to use digital zoom where the zooming is performed in the image only on any number of cameras simultaneously.This functionality shall be the default for fixed cameras. The use of digital zoom shall not affect recording or view of other users.				
105.	The Client Viewer shall integrate the following viewing capabilities:				
106.	Matrix Switching: The Client viewer shall allow switching amongst multiple selected bookmarked display layouts				

	with pre determined time duration for each matrix view.				
107.	Matrix Window – A window that is used to display cameras on demand or by an external event				
108.	Video Stitching – The VMS shall provide the ability for real time video calibration tools providing stitched video view of areas that are covered by multiple cameras as a single image. The video stitching software module shall provide the ability to "stitch" / integrate up to eight (8) cameras in any direction, horizontal, vertical to provide a single view of the selected cameras				
109.	The stitched video can be recorded in standard format (e.g, avi) as a single video file on user request.				
110.	The Client Viewer shall feature an Event window to allow the user to select events and manually trigger the selected event to occur.				
111.	Client viewer shall allow the same camera to be viewed on multiple display tiles; one may be digitally zoomed, or on high resolution stream.				
112.	The PTZ control window shall allow the user to select pre-defined presets for PTZ cameras and drive the selected camera to the preset.				
113.	The current camera state shall be displayed and shall indicate whether the camera is in live mode, in recording mode or in stopped mode.				
114.	The Client Viewer shall display motion activated sequences for the selected camera in a drop down menu. A line with the date, start time and duration shall represent each sequence. A drop down				

	preview screen shall allow the user to view the recorded sequence.				
115.	The Client Viewer shall display Alerts defined as bookmarked events.				
116.	The Client Viewer shall display a time line for each camera to represent recorded video sequences. The Client Viewer shall indicate whether the video was recorded due to motion activation, or recorded without motion or pre and post alarm video. The time line band shall be highlighted based on the camera view selected in the display. The Client Viewer shall allow video sequences for the displayed cameras to be review simultaneously.				
117.	The Client Viewer shall allow an area of interest in an image to be searched for motion in a particular area within camera FOV. Search parameters shall include sensitivity, time duration, and area of interest.				
118.	The Client Viewer shall allow the start and stop time and camera source for the export to be set and provide two format options for exporting video clips. The exported clip shall be the native H.265, H.264 format from the camera.				
119.	AVI/JPEG format – VMS shall provide options for export format type (AVI/MJPEG), timestamp, frame rate (full/half). Video clip may be exported to desktop/CD/DVD or a specific file path. All audio associated with the video being exported shall automatically be included in the AVI export.				
120.	Watermarking & Encryption – VMS shall watermark each and every frame of the Video files with Watermarks to authenticate the source of the				

	video. While exporting video segments to external media (CD/DVD) or to any folder in workstations, the VMS shall allow encryption of the video files with at least 128 bit encryption technique.				
121.	Video Cart Facility – VMS shall allow the users to download multiple segments of the video from the archive to a Video cart, with an option to tag each downloaded segment with text messages. The Video segments shall be downloaded in a single folder along with excel spreadsheet where details of each of the video segments are listed. On clicking the entry in the spreadsheet the video should start replaying. This is a mandatory requirement.				
122.	The Client Viewer shall allow the digital zoom feature to be used in recording replays.				
123.	VMS shall allow seamless integration into an external Geographical Information System				
124.	From the GIS console Operators shall get an overview of the system and access to all system components.				
125.	Map function can use standard graphical file formats including jpg, png, etc.				
126.	The Map should be a part of the Client viewer application and VMS shall allow detaching the map and showing it separately on another monitor connected to the Client viewer machine (in case of Multi-monitor workstation).				
127.	Different level status indication for warnings and errors				
128.	System performance data for cameras and servers including camera resolution, FPS,				

	network usage, disk space, etc.				
129.	The camera icons should be displayed on Multi-layer Sitemap, so that an operator can select the camera(s) for live display or recorded video display by simple click/drag-n-drop operation on the camera icon(s). The display should also highest the health status of the camera				
130.	Remote view and monitoring				
131.	The system should support Mobile clients to view live and playback the recorded video of any camera on Smart phones, Tablets, Laptops etc using Wifi, 3G and 4G connections. It should also allow live/archived video viewing over Web using standard browsers.				
VMS Storage					
132.	VMS shall comply with any conventional storage technologies (IDE, SCSI, RAID, SAN, NAS) to accommodate future potential expansion.				
133.	VMS shall be able to use server installed HDD as well as NAS/SAN in the same system for recording purpose.				
134.	It shall be possible to create Recording Schedules on the fly, and assign any schedule to any camera, any group of camera or to all the cameras any time. The recording shall be controlled on hourly basis. It shall be possible to manage recording on per camera basis, each with different video settings (format, frame rate and resolution).				
135.	VMS shall allow users to mark any specific segment of the video as Critical video segment, so that those particular segments of video do not get deleted on the default scheme (FIFO, Retention period, etc).				
136.	Archive retention period shall be				

	configurable on per camera basis. The system shall allow both retention based as well as FIFO based deletion policy.				
Investigation and Forensic Analysis					
137.	The solution shall provide the following process and investigation capabilities:				
138.	Bookmarking: The solution shall allow the user to bookmark any Video segment for ready reference at any later point of time.				
139.	Critical event Tagging: The solution shall allow the user to tag critical Event clips so that they do not get removed from the storage based on FIFO/Retention period settings.				
140.	Video Digging: It should be possible to navigate across multiple camera views simultaneously in a systematic way. By simple mouse click operations, it should be able to synchronize replays for any two or more cameras. On spot investigation of activities in the scene, with orchestrated use of Sitemap, Message Window and Virtual Matrix, it should give real flavour of a truly intelligent IP-based video surveillance system. It should enable the operators to follow movements of people, vehicles and other objects across multiple cameras in the archived video systematically and quickly, in a time synchronized fashion.				
Video Storage APIs and Video Analytics APIs					
141	ONVIF compatible Video Storage APIs, as per latest ONVIF "Recording Control Service Specifications". (Existing web(intranet/extranet) APIs , Publishable APIs are to be mentioned for the SW)				
142	ONVIF compatible Video Analytics APIs as per latest ONVIF "Video Analytics Service Specification". (Existing web(intranet/extranet APIs , Publishable APIs are to be mentioned for the SW)				

E-Gov. Standards & Applicable Security Aspects					
143	Adherence/compliance to applicable part of the guideline for Indian Govt websites are to be incorporated in browser band interface and associated code base.				
144	Adherence/compliance to applicable application security aspects in light of www.owasp.org guideline. Ref: Annexure: 1. Web application security checklist. 2. Secure programming guideline(Ver-2.0)				
145	Adherence/compliance to applicable egovstandards.gov.in policy & guideline.				
146.	Adherence/compliance to IndEA(India Enterprise Architecture framework) with refer to applicable reference modules(8 no.)				
Software maintenance & Updates					
147.	Software has to be maintained for the stipulated period for (i) corrective (ii)enhancement, (iii) performance up gradation and (iv) security enhancement(as applicable time to time) aspects without any further resource allocation bound to the user department.				

Table – 11: WALL MOUNTED MONITORING CONSOLE at Control Room:
Make :
Model :
O.S (as applicable) :
Firmware (as applicable) :

Sl No.	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/ compliant with clarification (2)Non-compliant	Remarks
1.	The monitor shall work in continuous operation (24x7) for viewing camera images				
2.	The monitor shall be energy Star (USA) 6.0 Compliant				
3.	The diagonal size of the panel shall be 42" or more LED				
4.	support contrast ratio (Typ.) 5000:1				
5.	Viewing angle (H/V) 178:178				
6.	support resolution of 1920 x 1080 p				
7.	1080paspect ratio of 16:9 @ 1920 x				
8.	support brightness 700nit				
9.	support display colors 10 bit Dithering -1.07 Billion				
10.	support a response time of 6ms or better				
11.	Audio Decoder : AC3 (DD), MPEG, DTS and etc				
12.	support inputs like Analog D-SUB, DVI-D, Display Port 1.2, HDMI 1, Component (CVBS Common)				
13.	support operating temperature of 0 ~ 40 deg C				
14.	support humidity of 10 - 80%				
15.	Certifications: FCC, CE,UL				
16.*	Non destructive firmware updation				
17.*	Configuration-backup, upload				

Table – 12: MONITORING WORKSTATION at Control Room
Make :
Model :
O.S (as applicable) :
Firmware (as applicable) :

Sl No.	Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
System						
1.	Number of Monitor support	Up to two full HD monitors				
2.	Processor	(1)SPECInt_rate_base2006 >= 175 (2) x86 64-bit architecture with seamless execution for x86 32 bit binary (3) Multicore (4) Mention Make, Model, Core, and Thread / core (if any)				
3.	Memory	8GB DDR4 1866 MHz or more				
4.	Network	1 x Gigabit Ethernet RJ-45 port with all cable accessories to be connected with compatible Ethernet switch				
5.	HDD	1TB SATA-3, 7200 rpm				
6.	Graphics	Integrated / Add-on with HDMI, VGA and HDMI compatible cables				
7.	Audio	Sdtereo audio out, audio in with cables				

8.	Interface	Min. 2 nos USB-2, and 1 no of USB-3				
9.	Optical Drive	Internal / External DVD DL RW with necessary interfaces				
Electrical						
10.	Power Input	100 to 240 VAC, 50Hz				
11.	Power Supply	<= 250 W				
Environmental						
12.	Operating Temperature	10° C to 35° C				
13.	Humidity	20 - 80% Relative humidity (non-condensing)				
14.	Certifications	FCC, CE, UL				

Table – 13: WORKSTATION MONITOR at Control Room:
Make :
Model :
O.S (as applicable) :
Firmware (as applicable) :

Sl No.	Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	Screen Size	22"				
2.*	Display Type	LED TN				
3.*	Resolution	1920 x 1080				
4.	Aspect Ratio	16:9				
5.	Brightness	250 cd/m²				
6.	Static Contrast Ratio	1000:1				
7.	Dynamic Contrast Ratio	Mega ∞ DCR				
8.	Viewing Angle (Horizontal/Vertical)	170°/160°				
9.	Response Time	5ms (GTG)				
10.	Colour Support	16.7M				
Power						
11.	Type	AC100-240V (50/60Hz)				
12.	Power Consumption (Max)	30W				
13.	Power Consumption (Stand-by)	0.5W (Typical)				
14.	Max Stand By Power (DPMS)	0.5W (Typical)				
Features						
15.	VGA	One port				
16.	HDMI	One port				
17.	Stand	Tilt				

Table – 14: Storage Specification:

Make :
Model :
O.S (as applicable) :
Firmware (as applicable) :

Sl No.	Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.*	Controllers	1. System should be an storage system to support both file and block . 2. System should be configured with CPU based dual controllers. 3. There should be a single GUI for management of both file and block services. 4. The controllers should be active-active.				
2.*	Controller Operating System Support	Mention controller OS with proper licenses for all interfaces and capabilities required during the period of contract				
3.*	Cache	**1.** The system should have a minimum of 32 GB of cache/ system memory across dual controllers. 2. Data in the cache should be protected from unlimited period of power outage.				

		3. The storage should support SSD as Read/Write Cache.				
4.*	Disk Support	System should support drive type of 1. SSD drives, 2. SAS 12 Gb/s and 3. SATA II 7200 RPM/ Nearline SAS 7200 RPM drives.				
5.*	Protocols and Ports Support	1. Block base, NFS, CIFS (future supportability) 2. iSCSI (4x 10 Gbps, upgradability to 8 nos) . 3. FC (8/16 Gbps future supportability)				
6.*	Other Protocols Support	The System should support SNMP, Address resolution protocol, Simple Network Time Protocol, LDAP, Network Lock Manager v4.				
7.*	Software licenses	1. The system should be configured with licenses, as applicable. 2. Deduplication / compression should be included. 3. Thin Provisioning, 4. Virtualization integration software license should be				

		provided for entire system				
8.	Performance Monitoring Software	Performance Monitoring and reporting software for providing details of performance like IOPs, utilization, response time and also provide capacity details like amount of capacity allocated, capacity used and capacity free.				
9.	Snapshots	The system should be configured with Snapshot provision, snapshot restore licenses for the entire systems capacity				
10.	RAID Support	1. Should support RAID 10,5 and 6. 2. Surveillance grade NL SAS (12 Gbps, 7200 rpm) capacity range for each disk 4TB to 8TB 3. NS SAS to be configured as 4+2 in RAID-6 with usable capacity to match the req. capacity (12 TB, 32 TB , 48 TB etc) as mentioned in Sl. 3 , Table-1 (Camera Locations and Type)				
11.	Management	1. Browser based built in management. Should be able				

		to support automated email to vendor support centre for proactive maintenance. There should be a dedicated Ethernet port for management and it should not use the iSCSI host ports for management.				
12. *	Storage space (Correctional Home basis – 10 nos)	The bidder should configure 12TB / 32TB / 48TB usable capacity using 7.2K NL-SAS (12 Gbps) in RAID-6 using 4D+2P Drives as :- 1. Bankura – 24 TB 2.Cooch Behar - 24 TB 3.Darjeeling – 24 TB 4. Howrah – 24 TB 5.Purulia - 24 TB 6. Raiganj – 24 TB				
13.	Scalability	The same storage should be expandable to 150TB				
14.	Automated Tiering	1. Storage array be configured with license automated tiering at LUN level across all the 3 tiers of storage, i.e, SSD, SAS and NL-SAS. 2. It should				

		support movement of LUN data from NL- SAS to SAS to SSD and vice versa based on application I/O workload.				
15.	Replication	Storage array should have capability with license for Replication.				
16. *	Warranty and Support	5 Years support for hardware and software				

Table - 15. Passive materials (Fibre & UTP):
Make :
Model :
O.S (as applicable) :
Firmware (as applicable) :

Sl No.	Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
Core Single Mode Outdoor Fiber Cable						
1.*	Cable Type	6 fiber Single Mode, Armoured, Unitube, Gel filled cable complying to ISO.IEC 11801 - 2nd Edition, type OS2; AS/ACIF S008; AS/NZS 3080,ITU-T REC G 652D, IEC 60793/60794, TIA 568, EIA 455; suitable for use in direct burial, outdoor ducts and backbone cabling.				
2.*	Armour	Corrugated Steel Tape Armour - Thickness > 0.125mm				
3.*	Water Blocking	Thixotropic Gel (Tube), Petroleum Jelly (Interstices)				
4.*	Attenuation	@ 1310nm <=0.35 db/Km MAX @1550nm <=0.22 db/Km MAX				
5.*	Loose tube material	Single PBTP Loose tube filled with water blocking Thixotropic gel				
6.*	Jacket material	UV Stabilised Polyethylene (HDPE)				
7.	Peripheral Strength Member	Two Steel wires				
8.	Tensile Strength	1000N				
9.	Crush Resistance	2000N/10 cm				
10.*	Cable Diameter	7.8 + - 0.5 mm				

11.	Max. Bending Radius (during installation)	20 X Overall diameter				
12.	Max. Bending Radius (during full load)	10 X Overall diameter				
13.	Cable weight Kg/Km	80 kg/km				
14. *	Operating Temperature	-10 Degree C to +70 Degree C				
	Fiber Optic Rackmount LIU, loaded with adapter plates, Splice Tray and Pigtail					
15.	Fiber Management Shelf	Configurable Fibre drawer is a 1U rack mount unit for storing and terminating incoming fibre cable. Using our vast range of 6 Pak Plates you can configure your fibre system to suit all fibre applications.				
		Sliding drawer for ease of reconfiguring fibres				
		Rugged steel construction finished in attractive				
16.	Weight	5KG				
17.	Compact size (mm)	45mm H x 485mm W x 255mm D				
18.	Optical Fibre Adapter Plates Loaded	SC 6 Fibre SM Plate				
19.	No of Adapter Plate Req	As per Requirement				
20.	Pigtail	SC, Single mode, 9/125 µm				
21.	No of Pigtail Req	As per Requirement				
	SC to LC Patch Cord SM					
22.	Make and Type	SC to LC Duplex tuned Fiber Optic Patch Cord 3 Mtr, 9/125 Micron				

23.	Cable Sheath	LSZH				
24.	Cable Diameter	1.8 mm twin zip				
25.	Ferrule	Ceramic				
26.	Buffer	Tight buffered				
27.	Insertion Loss	MAX .3 db				
28.	Return Loss	> 45 db				
29.	Temperature Range	-10 Degree C to +60 Degree C				
30.	ROHS	ROHS Compliant				
	CAT6 U/UTP Patch Cord					
31.	Type	Cat 6 U/UTP Patch Cords are key components of Power Cut 6 U/UTP End-to-End Solution and are designed to support data networks for 10/100BASE-T and 1000BASE-T applications.				
32.	Conductor	24 AWG stranded copper wire				
33.	Length	1 & 2 Meter				
34.	RJ45 plug and boot material	Clear polycarbonate				
	24 port CAT6 Patch Panel					
35.	Type	19" 24-port, loaded with Jack , A key product used in both Category 6 link and channel gigabit ethernet applications. The IDC section consists of V-shaped contacts that flex not fatigue when terminated. Each port features spring-loaded shutter and can be colour coded to match jack outlets. Offering front and rear labelling options, the patch panel is constructed of cold-rolled steel for additional strength and durability.				

36.	Plastic Housing Jack Connector	Polycarbonate, UL94V-0 rated or equivalent				
37.	Contact Plating	50µ" Gold/100µ" Nickel				
38.	Port Identification	9mm or 12mm Labels on each of 24-ports (to be included in supply)				
39.	Height 1 U	(1.75 inches)				
	CAT6 Information Outlet					
40.	Type	Category 6 Unshielded Twisted Pair 4 pair cable shall be compliant with ANSI/TIA/EIA-568-B.2-1 Additional Transmission Performance Specifications for 4-pair 23 AWG Category 6Cabling.				
41.	Jacket:	The cable jacket shall be FRPVC.				
42.	Mechanical Characteristics	Construction: 4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted. Conductor Solid Copper Conductor Diameter 0.56±0.005mm (23 AWG) Insulator Polyolefin Jacket FR PVC Outer Diameter 6.0±0.4mm Max. Temperature 75°C				
43.	ROHS	Compliant				

All Passive materials (Fiber & UTP) Should be same make. The OEM should be ISO 9001:2000 & QS: 9000 Certified. In the changing needs of the global resources if the company has environmental management systems in place like ISO 14001 accreditation the same shall be added advantage.
CAT 6 UTP components should have independent lab verification like ETL certificates. The cabling should be certified to have application support warranty for minimum next 15 years
The complete cabling system offered shall be upgradeable to the intelligent system if required in future. The OEM should have own intelligent solution, not should have any tie-up with third party (OEM Should give written deceleration) .
OEM authorization should be be submitted along with the bid failing which the bid is liable to be rejected.

Table – 16: Total Battery VAH

Sl No.	Features	Minimum guiding specification	Specification Quoted by the bidder	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant /compliant with clarification (2)Non-compliant	Remarks
1.	Required	Minimum 15600VAH for 60mins backup at (1+1) mode				
2.	Protection Level	IP20				
Communication and management						
3.	Interface type	Smart RS -232/USB				
4.	Network Module	UPS should be access though Local Area Network.				
Environmental parameters						
5.	Operating Temperature	0-50 deg C				
6.	Relative humidity	20-90% without condensation				
Manufacturers						
7.	Credentials	Manufacturer must be ISO 9001:2008 certified.				

Table – 17 : Network Infrastructure

Sl No.	Features	Comply (yes/no)	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.	The IP cameras should terminate to an Industrial grade edge switch kept for the outdoor locations and normal edge switch for the indoor location within IP66 compliant cabinet using wired connectivity, IP66 compliant ventilated cabinet should house Industrial grade/Normal edge switches and LIU etc. The Edge Switch will be part of network that interconnects the switches to the Layer 3 switch at Control Room.				
2.	The networking topology may be envisaged is mixture of RING and STAR topology using UTP/OFC for network link redundancy & automatic link failover capability. Bidder must conduct a site survey to come out with an optimized usage of equipment for the network Infrastructure in correctional home.				

Table – 18: Storage Functional Requirements

Sl No.	Features	Comply (yes/no)	Page number of product brochure/Data sheet complying the quoted specification(highlighted & hyperlinked)	Evaluation by the Tender Committee: (1)Compliant/compliant with clarification (2)Non-compliant	Remarks
1.	Local Storage for all cameras for 24 hours (Video storage required to be stored on Primary storage for 14 days.				
2.	Primary Storage capacity for 14 Days, bidder to calculate the capacity. The capacity mentioned in the RFP is for reference purpose only.				
3.	VMS shall be able to read access & retrieve the data directly on the Primary Storage. Data Retrieval process shall be running in the back ground. Video Data Archive & Retrieval shall be handled at the file system level for Primary & Secondary Storage for the complete capacity (only when secondary storage is added at a later stage).				
4.	It shall allow online expansion and retirement of storage capacity and disk array swap-outs without taking it off line. This includes adding addition disks to existing storage arrays, adding incremental or new storage arrays, and/or the removal of older arrays in replacement of new storage subsystems regardless of capacity, Make & Model.				
5.	VMS shall have integration & Certified with Primary & Secondary Storage to access & retrieve the data for both Storage without the need of any third party console.				

Section-IV

Forms

Form 1: Application

<Application for participating in the Tender is to be made on printed Letterhead of the Applicant including full postal address, telephone, faxes and e-mail address>

Date: _____

To
The Additional Chief Engineer
West Bengal Police Housing & Infrastructure Development Corporation Limited.

Subject: Submission of Proposal for "Supply, Installation, Testing, Commissioning and Maintenance of Video Surveillance System in Six District Correctional Homes (Bankura, Cooch Behar, Darjeeling, Howrah, Purulia and Raiganj) of West Bengal".

Dear Sir,

1. We are submitting this Proposal for the work mentioned above and our Proposal is valid for a period of 120 days from the last date of submission of the tender.
2. We understand that WBPHIDCL is not bound to accept any or all Proposals it may receive.
3. We declare that we have disclosed all material information, facts and circumstances, which would be relevant to and have a bearing on the evaluation of our Tender and qualification.
4. We do, also, certify that all the statements made and/or any information provided in our bid are true and correct and complete in all aspects.
5. We declare that in the event that WBPHIDCL discovers anything contrary to our above declarations, it is empowered to disqualify us and our Tender from further participation in the Bid evaluation process and to cancel the contract at any time during the contract period.
6. If our Proposal is accepted, we will furnish the Initial Security Deposit for a sum of five percent (5%), of the overall contract value.

Dated this _____date of _____2018,

(Signature)

Name:
Designation:
Name of Firm :
Company Seal:

Form 2: Certificate regarding Summary Statement of Yearly Turnover from Contractual Business

This is to certify that the following statement is the summary of the audited Balance Sheet arrived from contractual business in favour of.....

for the three consecutive years or for such period since inception of the Firm, if it was set in less than such three year's period.

Sl. No.	Financial Year	Turnover (rounded up to two digit after decimal) in lakh	Net Profit (rounded up to two digit after decimal) in lakh	Remarks
1	2015-16			
2	2016-17			
3	2017-18			
Total				

Note:

1. Turnover is to be expressed in lakh of rupees, rounded up to two digits after decimal.
2. In case, the firm was set up in less than 3 year's period, mention the year of inception in the 'Remarks' column.

iii) Net worth of the Company for the last financial year (2017-18) _____.

.....	.....
.....	.....
Signature, name and designation of Authorised Signatory	Name of the Statutory Auditor's Firm
	Seal of the Audit Firm:
For and on behalf of	(Signature, name and designation and membership No. of the authorized signatory)
.....(Name of the applicant)	

Form 3: Declaration against Common Interest

I/We, Sri/Smt. _____ , the authorized signatory on behalf of ..... do hereby affirm that I/We/any of the member of..... bidding against NIT No. __ Sl. No. _____ do not have any common interest either as a partner on any partnership firm / consortium as a Proprietor / Owner of any other firm in the same serial for the work I / We want to participate.

_____

Date: Signature of bidder

Form 4: FORMAT FOR BIDDERS'S DETAILS

1	Name of the Firm	
2	Registered Office Address	
	Contact Number	
	Fax Number	
	E-mail	
3	Correspondence / Contact address	
	Name & Designation of Contact person	
	Address	
	Contact Number	
	Fax Number	
	E-mail	
4	Is the firm a registered company? If yes, submit documentary proof Year and Place of the establishment of the company	
5	Former name of the company, if any	
6	Is the firm • a Government/ Public Sector Undertaking • a propriety firm • a partnership firm (if yes, give partnership deed) • a limited company or limited corporation • a member of a group of companies, (if yes, give • name and address and description of other companies) • a subsidiary of a large corporation (if yes give the name and Address of the parent organization). If the company is subsidiary, state what involvement if any, will the parent Company has in the project.	
7	PAN No.	
8	Is the firm has GSTIN? If yes, submit valid GST Registration certificate.	
9	Total number of employees. Attach the organizational chart and location of your headquarter and service centers showing The structure of the organization with availability of technical manpower.	
10	Are you registered with any Government/ Department/ Public Sector Undertaking (if yes, give details)	
11	How many years has your organization been in business under your Present name? What were your fields when you established your Organization?	
12	Is the bidder a member of a Consortium? If yes, please mention whether Principal Bidder or Member.	
13	What type best describes your firm? (Purchaser reserves the right to verify the claims if necessary) • Manufacturer • Supplier	

	• System Integrator • Consultant • Service Provider (Pl. specify details) • Software Development • Total Solution provider (Design, Supply , Integration,(O&M) • IT Company	
14	Number of Offices in district headquarters in West Bengal	
15	Is your organization has ISO 9001:2008 certificates?	
16	List the major clients with whom your organization has been / is Currently associated.(Mention name of clients with address, year of installation and value of orders.)	
17	Have you in any capacity not completed any work awarded to you? (If so, give the name of project and reason for not completing the work)	
18	Have you ever been denied Tendering facilities by any Government / Department / Public sector Undertaking? (Give details)	

Authorized Signatory (Signature In full): _____

Name and title of Signatory: _____

Company Rubber Stamp: _____

List of enclosures:

1. Copies of registration with SSI/NSIC or ISO 9000 certification, if any.

2. Copies of Work Order (as mentioned in column 16) with satisfactory competition certificates.

Form 5: Reference Site Details

(Bidder shall give three reference site details completed during the last three Financial Years)

1) Name of the company	
Address of the company	
Name, designation of contact person with telephone No. and e-mail id.	Name : Designation : Landline No. : Cell No. : E-mail id. :
Details of CCTV System supplied (Ref. No. date of order and value)	
2) Name of the company	
Address of the company	
Name, designation of contact person with telephone No. and e-mail id.	Name : Designation : Landline No. : Cell No. : E-mail id. :
3) Name of the company	
Address of the company	
Name, designation of contact person with telephone No. and e-mail id.	Name : Designation : Landline No. : Cell No. : E-mail id. :
Details of CCTV System supplied (Ref. No. date of order and value)	

Form 6:

Affidavit in non-judicial stamp paper certified by notary public or 1st class magistrate

1. The undersigned also hereby certifies that our firm M/S._____ _____ or any of constituent partner had not blacklisted nor were any of the contract/ services terminated with/by any of the Central/ State Government Ministries/ Affiliates or UT Government/ PSU Organizations for projects in India during last 5 (five) years prior to the date of this N.I.T.

2. We are not being under ineligibility for corrupt or fraudulent practices.

3. We have not been declared insolvent/ bankrupt or have not filed for insolvency/ bankruptcy or in the process of being declared bankrupt before any designated authority in any country.

4. The undersigned would authorize and request any Band, person, Firm or Corporation to furnish pertinent information as deemed necessary and / or as requested by WEST BENGAL POLICE HOUSING & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED to verify this statement.

5. The undersigned understands that further qualifying information may be requested and agrees to furnish any such information at the request of WEST BENGAL POLICE HOUSING & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

6. Certified that I have applied in the tender in the capacity of individual / as a partner of a firm & I have not applied severally for the same job.

7. The undersigned do certify that all the statements made in the attached documents are true and correct. If any declaration submitted is found/ascertain to be incorrect/fabricated/misrepresented/fraudulent etc. accordingly tender will be liable to be cancelled/terminated immediately & I/my firm/company shall also be liable to prosecuted under section 197,199&200 of Indian Penal Code, 1860 along with section 71 & Section 73 of Indian Information & Technology Act 2008 & any other applicable law for the time being in force in addition to forfeiture of Earnest Money/Security Deposit.

Dated : _____

_____

Signature of applicant including title and capacity in which application is made

and

the name of the Firm with Seal.

Form 7: UN-PRICED Bill of Quantities

Sl.No.	Item Description	Make and Model	Specification as mentioned in Section-III
Camera			
1	IP Varifocal Dome Camera with IR cut filter with auto switch, IP66 Vandal Proof Housing.		
2	IP Varifocal Bullet Camera with automatic focusing, IP66 Vandal Proof Housing.		
3	IP PTZ Camera with 30x optical zoom, IP66, Vandal Proof Housing.		
Camera Accessories			
4	Surge Protectors.		
5	Power Supply		
Edge Location Equipment			
6	Equipment Housing for Switches, Power supply, etc		
7	Power Supply Board with MCB		
8	UPS For Edge Locations (600 VA)		
9	Edge Industrial switch		
10	Normal Edge Switch		
Cables & Accessories			
11	OFC-6F,SM,ARMOURED		
12	SC-LC OFC Patch Cord		
13	FO Transceiver		
14	Network LIU-12P,Pigtail, s-tray		
15	Factory Fitted CAT6 Patch Cord		
16	Cat6 UTP Cable		
17	Outdoor Fiber Joint Enclosure Box		
18	RJ 45 Connectors , 100 per Box		
19	ISI Marked HDPE Pipe-32/28 mm dia.		
20	ISI Marked Conduit Pipe-40 mm dia.		
21	3 Core 1.5 sq mm ISI marked copper Armoured Power Cable		
22	2 Core 1.5 sq mm Unarmoured Power Cable		
23	GI Stay Wire		
Servers and Storage			
24	Servers for VMS		
25	Unified Storage Module 20 TB Usable capacity		

Network and Accessories			
26	19U Network Rack with All Accessories		
27	4-Port USB KVM Switch		
28	Core Switch		
Monitor and WorkStation			
29	42" LED Monitor		
30	22" LED Monitor		
31	Client Workstation		
Software			
32	VMS Software (inclusive of DBMS software) for installations & Camera License		
33	VMS Software Server License		
Uninterrupted Power Supply			
34	Uninterrupted Power Supply (6KVA) with 1hr Battery Backup with required nos. of battery		
Installation & Commissioning Charges			
35	OFC Laying		
36	Cat6 UTP Cable Laying		
37	Pipe Laying		
38	Camera Fixing		
39	Rack Installation		
40	RJ-45 Clipping		
41	Outdoor Housing Installation		
42	Power Cable Laying		
43	Electrical Job Charges		
44	VMS Software Installation Charges		
45	UPS Installation Charges		
Warranty and Maintenance			
46	Warranty for 3 years after successful commissioning		
47	AMC charge post 1 year of Warranty period for 1 year duration		
48	AMC charge post 2 year of Warranty period for 1 year duration		

Form 8: Joint Survey Report (To be filled up by the successful bidder, after getting contract)

(A)Camera Location site

Camera No	Type	Location	Height(indoor/outdoor)	Availability Power Supply	Network Cable route and type	Availability of ambient light(Sunlight/ day light/domestic electric light/dark at night)	Physical Custody
Remark on site readiness for installation of Network, Camera and System							

(B)System Room

Location	Utility Power Supply and wiring readiness	Furniture Sufficiency

(C)Command and Control room

Location	Power Supply and wiring	Furniture Sufficiency

(D)Overall Site readiness

Camera	Network	Server room	Command and control room

(Signature of contractor with Stamp)

(Signature of representative of WBPHIDCL with stamp)

(Signature of End user with stamp)