Tender Document

For

The Implementation of

Nanded City Surveillance Network &
Vehicle Tracking System for Emergency Vehicles

Issued by
The Commissioner,
Nanded Waghala City Municipal Corporation,
Nanded

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1 Tender Notice

Nanded Waghala City Municipal Corporation (NWCMC), Nanded invites proposals from reputed companies for the design, development, implementation, maintenance and support of City Surveillance & VTS, Nanded – City Surveillance Network & GPS based Vehicle Tracking System for Emergency Vehicle.

Tender Download & Submission	The tender can be downloaded and submitted on the eprocurement website of NWCMC – http://nwcmc.maharashtra.etenders.in
Tender Fees & EMD	Tender Fees - Rs. 5000/- (Rs. Five Thousand only) EMD – Rs. 5,00,000/- (Rs. Five Lakh only)
Schedule of Tender Events	Date of release of Tender : 11/02/2013 Date of Voluntary Prebid : 27/02/2013 Date of Tender Submission : 25/03/2013 at 15.00 hrs Date of Opening of Technical Bids : 25/03/2013 at 15.30 hrs Date of Opening of Priced Bids : To be announced later

Sd/-
Commissioner
Nanded Waghala City Municipal Corporation
Nanded

2 Introduction

2.1 About Nanded

The Nanded city, with a jurisdiction of about 64 sq. kms, is the headquarters of the Nanded District in the Marathwada Region of Maharashtra state. It is the second largest urban center in the Marathwada region after Aurangabad.

The district of Nanded lies in the border of Maharashtra and shares boundaries with Yavatmal District in the north, Parbhani, Latur and Osmanabad Districts in the west, Bidar District of Karnataka in the south and Nizamabad & Adilabad Districts of Andhra Pradesh in the east.

Demographic Profile of Nanded District

Total Number of Households	5.23 lakhs
Total Population	28.67 lakhs
Male	14.76 lakhs
Female	13.91 lakhs
%age of Urban Population to Total Population	28.29 %
Population density	272
Literacy Rate	68.52%
Male Literacy	81.14%
Female Literacy	55.12%

Nanded city is located at 18°30' North latitude and 77°10' East longitude at about 489 meters above mean sea level. It is about 260 km each from Aurangabad and Hyderabad and about 300 km from Nagpur.

Nanded is regionally linked by road to other urban areas by Major State Highway (MSH) 6 to Degloor in the south east towards Hyderabad, MSH 2 to Bhokar in the north east and Latur in the south east, MSH 3 to Hadgaon in the north, MSH 6 to Madgaon in the north west, SH 44 to Purna in the west, and SH 223 to Kandhar & SH 224 to Osmannagar in the south.

In terms of railway connectivity, Nanded is part of the South-Central Railway Division of the Indian Railway. It lies on the Mumbai-Secunderabad railway line. It is serviced by direct rail connectivity to Mumbai, Secunderabad and Amritsar (via Delhi).

Providing a gateway to the Marathwada region is the Nanded Airport or the “Shri Guru Gobind Singh Ji Airport”. Aviation Regulator, DGCA (Director General of Civil Aviation) awarded Provisional Aerodrome License to Nanded Airport in Public use Category on 5th April, 2010 and Permanent License on 1st October, 2010. The Airport currently provides air

connectivity to major metro cities viz, Delhi, Mumbai, and Nagpur. The passenger traffic at Nanded airport has grown substantially (approximately 14 times) over the last year.

2.2 About Nanded Waghala City Municipal Corporation

Nanded Waghala City Municipal Corporation (NWCMC) was established on 26th March 1997, by merging Nanded Municipal Council and adjoining Waghala Municipal Council. The Corporation is constituted under the provisions of Bombay Provincial Municipal Corporations Act, 1949 and is also governed by the provisions of 74th Constitutional Amendments Act 1992(CAA). In addition to the Waghala Municipal Council, Vasarni Village, Kautha Village, Asarjan Village, Fatehjangpur Village, Asadwan Village and CIDCO and HUDCO colonies areas were merged with the NWCMC:

The total area under the NWCMC jurisdiction is 64 sq. kms. Nanded City is divided in two parts i.e. Old Nanded north of the Godavari river (on the left bank) and New Nanded comprising of Waghala and six other newly merged villages and CIDCO area, south of the Godavari river (on the right bank).

2.3 NWCMC Organization Structure

The organization structure comprises of an elected wing and an executive wing.

Elected Wing: The elected wing is represented by the General Body (GB) constituted by 73 elected members / Municipal Corporators and 5 co-opted members. The General Body together with Municipal Administrators and Departmental Heads formulate the framework for discharge of municipal functions, both obligatory and discretionary, of the Municipal Corporation. Apart from the GB there are 5 Committees constituted with elected Members including a Standing Committee of 16 elected Members, to address matters related to administration / provision of civic services in a most appropriate manner.

Executive Wing: The administrative or executive wing is headed by the Municipal Commissioner, appointed by the State Government. The Municipal Corporation is organized into five geographical Divisions for effective service delivery and management. Further, there are 24 multi-member electoral wards drawn for the purpose of the corporation elections, which also double up as administrative and management sub-divisions.

The executive wing is organized into functional departments that are responsible for day-to-day functioning of the Municipal Corporation, including planning, engineering, operations & maintenance and other service delivery functions.

2.4 City Surveillance & VTS at NWCMC

Nanded as an urban centre and as a district, is increasing in strategic and geo-political prominence. It also has a unique tourism value due to the religious significance derived from the presence of the Gurudwara, due to which there is a large influx of religious tourists round the year and especially so during a few important festivals. Also, there have been certain incidents that have been noticed by the city, police and district administrations, which have the potential to disrupt peace within the city. With a view of technologically assisting the police administration to maintain law & order and also to proactively identify socially disruptive tendencies, the NWCMC has decided to implement a city-wide Video Surveillance System alongwith an Emergency Vehicle Tracking System.

This project is a part of, and a precursor to, the **Nanded Safe City** project that is being conceptualized by NWCMC, which aims to make the Nanded city safe and secure for the citizenry. With the objective of providing better Governance and improving the quality of life of ordinary citizens of the City, NWCMC has already initiated a GIS based e-Governance project called Udaan iMEGA.

Proposals with comprehensive solutions are requested for following two parts of the Project from competent System Integrators:

Part 1: City Surveillance Network

Part 2: Vehicle Tracking System for Emergency Vehicles

2.5 Nature of the Project

- The Project envisages implementation of an I.P. based Video Surveillance system and vehicle tracking system for emergency response on a proposed network for aiding visual surveillance and faster communication and response for:
  - ✓ Law & Order
  - ✓ Watch on special events like public gatherings, processions etc.
  - ✓ Crime Control
  - ✓ Traffic control

- This project is envisaged to enable live monitoring of activities in sensitive locations around Nanded city, from the point of view of security and crime prevention & detection.

- The system shall ensure a faster response to emergency calls and improved presentation of information, which shall enable operators to provide a more informed response to callers using GPS, based Vehicle tracking system.

- The system shall record the movements of vehicles and public at specific locations for future planning / actions.

- The project envisages the creation of a centralized Command and Control Centre to collate security data and take informed decisions.

- The system shall enable immediate incident detection and effective management of police response.

- The system shall help in proactive identification of disaster/emergencies and also help in an automated response mechanism. The system shall also create a communication infrastructure, which is omnipresent in nature with essential focus on video surveillance.

- The system shall be capable of providing connectivity in city Urban Limits with the objectives of surveillance as per the locations as details given in tender document.

- The system shall be scalable and provide enhanced functionality and services as required in future (Scalability and Expandability)

2.6 Part One- Nanded City Surveillance

2.6.1 Scope of Work

- Nanded city has a fast growing floating population with divergent socioeconomic strata. The monitoring of large number of vehicles in the cities has also become a significant task. NWCMC is looking for an outdoor surveillance system using IP CCTV systems to initially cover the important locations in city specifically the sensitive areas including all entry and exit points, parking lots, crossovers, junctions, market areas, critical hot spots, etc.

- The proposed surveillance system will involve setting up of an intelligent security system comprising IP based outdoor security cameras across various locations and places of strategic importance throughout city that will have the ability to monitor, detect, alert and record any attempts of attacks, theft, vehicular movement, human movement, etc. The video surveillance data from various cameras deployed at critical areas will be stored, monitored and analyzed at the centralized control room to provide an intelligent reporting, MIS & alert generation mechanism which can enable faster and efficient decision support, and ensure preventive security mechanism for the city.

- A mix of High definition IP based Fixed and PTZ cameras will be used for the purpose. The IP based CCTV Camera should be able to work with network media which may be Wireless broadband (WiFi / WIMAX), Fiber based Network or a leased line from a service provider.

- Bandwidth & storage requirement for a camera shall be calculated by the bidder based on the following monitoring & storage requirement:
    - Monitoring: 25FPS @ Full Resolution
    - Recording: 25FPS@ Full Resolution for 10 days continuous recording.

Bidders are required to submit their respective rationale, vetted by the camera OEM, for the said calculations. Please note that the bidder & the OEM shall have to justify the rationale during the POC.

- The successful bidder shall be responsible for end-to-end implementation of connectivity of all the locations under this RFP and shall quote and provide/ supply any item(s), which are required for successful implementation and commissioning of the system as well as its management.

- Since no single network exists to integrate the project across the city, a combination of network technologies shall be used to provide seamless connectivity to all cameras. Network Operation Centres (NOC) and control rooms shall also be provided with scalable capacities to allow for reasonable expansion in the future.

- The system must have redundant network communication capability to be accessible from primary command and control center.

- The required networking equipment for end to end connectivity from Control room to individual Surveillance Cameras shall also be provided by the bidder at each location.

- The complete ownership of the network proposed on wireless/fibre will that be of NWCMC. However complete maintenance will be in the scope of the bidder including rectification of minor or major faults/breakages in the network equipment.

- The bidder shall carry out installation of active components, passive components and accessories supplied as per standards for successful integration and implementation of the systems at each locations connected under this RFP.

- The bidder shall be responsible for configuring and fine-tuning of subsystems to achieve overall optimal network performance with high-level physical & cyber security.

- Wireless Communication, if used, shall be fully secure and shall support 128-bit encryption or better.

- The city surveillance system shall have the capability to deploy intelligent video analytics software on any of selected cameras. This software has various applications:
  - Presence of Vehicle
  - Red Light/Stop
  - Light Violation
  - Traffic flow/Congestion
  - Parking Violation
  - One way traffic control

- Traffic Volume estimation and statistical counts
- Tripwire/ Intrusion
- People loitering
- Wrong way detection
- Unattended object
- Face Capturing
- Number plate capturing
- Theft Protection
- Camera Tampering

- A maximum of two rules shall be used for any camera & the maximum number of cameras on which analytics is used shall not exceed 20. Both Server-based & edge-based analytics are acceptable to NWCMC. Bidders are required to quote for the analytics server separately if they opt for the server-based analytics. The video analytics capability of the system needs to be capable of being upgraded to new and improved video analytics as they become available.

- All the cameras will be connected to a Command & Control Centre, which will be equipped with video management modules and storage modules. Provisions will be made to record and view live incidents at all surveillance premises. Recorded clips can also be viewed readily on requirement. The Command & Control Centre will be equipped with a set of video monitors (acting as a video wall) to aid the officials in monitoring events. Abnormal activities should be identified and indicated by the system.

2.6.2 Objectives of the City Surveillance Project

- To offer proactive approach to improve public safety and security in the State.

- To deploy technology solutions to sense, analyze and enable a coordinated response to handle the threats better.

- To act as deterrent to potential exploitation of vulnerabilities.

- To implement a layered approach to secure City Entry/Exit, zones and critical infrastructures.

- To enable street level security solutions with Video Analytics, Aerial Surveillance, Traffic Management etc.

- To establish an intelligent infrastructure to command & control & gain rapid inputs from ground units.

- To provide alerts / feedback to the Police Department about abnormal movements / suspicious objects, etc.

- To enable better management of security across the public places through 24x7 intelligent monitoring.

- To facilitate faster response to security breaches.

- To enable Improved turnaround time in responding to any investigation case, faster access to evidence in case of security breach / law violation in the city

2.6.3 List of Surveillance Locations

The following is a list of locations where NWCMC intends to have surveillance. This list may be expanded / trimmed depending upon the needs of the city administration and police during the period of the project.

	Location
1.	300 year building Dena Bank Chowk
2.	Airport Chowk
3.	Ambedkar Chowk Latur Rd
4.	Anand Nagar Chowk
5.	Annabhau Sathe Chowk
6.	Ashna River Beach
7.	Ashna River Bye Pass Shankar Rao Chowk
8.	Bafna Point / Kalani Tyre
9.	Bhavsar Chowk
10.	Bhagya Nagar
11.	Big Bazar Latur Rd
12.	Chanda Singh Corner
13.	Chikhalwadi Chowk
14.	Chowpala Chowky
15.	Deglur naka Chowk
16.	Dhavale Corner
17.	Dhoot Niwas
18.	Gokul Nagar (Railway station area)
19.	Habib Talkies
20.	Hanuman Chowk
21.	Hingoli Gate (Khurana Travels)
22.	ITI point
23.	ITM College Chowk
24.	Itwara Chowk
25.	Kalamandir
26.	Khudbai Nagar Chowk
27.	Maharana Pratap Chowk

28.	Mahaveer Chowk
29.	Maltekdi T point
30.	Mini Sahyadri Rest House
31.	Mutha Chowk
32.	Pasha Chowk
33.	Raj Corner
34.	Rly station Ambedkar Statue
35.	Sachkhand Gurudwara Gate 1 & 2
36.	Sachkhand Gurudwara Gate 3 & 4
37.	Sarafa Corner Gavil Chowk
38.	Shivaji Chowk CIDCO
39.	Shivaji Chowk HUDCO
40.	Shivaji Nagar Masjid
41.	Shivaji Statue
42.	Shrinagar / BK Hall
43.	SP Residence
44.	ST Bus Stand
45.	Taroda Naka
46.	Tower Monda
47.	Workshop T Point
48.	Y point Ganesh Nagar (Phule Market)
49.	Yashwant College

2.7 Part Two - Vehicle Tracking System for Emergency Vehicle

2.7.1 Scope of Work

- With the increase in the need for police and emergency vehicles to reach out to various parts of the city more effectively, NWCMC intends to implement an emergency vehicle tracking system that will be connected to the centralized control room.

- The VTS will be installed in 25 emergency response vehicles within the jurisdiction of the city & police administration that include police vehicles, ambulances & fire tenders. The VTS should be such that it should be easily transferable from one vehicle to the other.

- The vehicle tracking devices should combine both active and passive tracking abilities: when a cellular network is available and a tracking device is connected it transmits data to a server; when a network is not available the device stores data in internal memory and will transmit stored data to the server later when the network becomes available again.

- The automatic vehicle locater unit shall be installed with GPS/GIS receiver, and will be linked with Nanded city Police control room.

- The bidder shall also provide the GPRS & GPS services in collaboration with a telecom service provider (TSP). The vendor shall sign a tripartite agreement with NWCMC, alongwith the TSP, which will include a detailed service level agreement, guaranteeing the 99% availability of the telecom service.

2.7.2 Objectives of the VTS project

- To pinpoint the precise location of all emergency response vehicles under the city and police administration

- To assist the emergency responders with the fastest path to reach the site of emergency so as the reduce response time

- To track the path of the emergency vehicles as they move through the city and during an emergency

- To identify the nearest emergency vehicle on the map so that the same can routed to the emergency site. The whole system has to be integrated to work as a full-fledged solution to have the eventual capability so that the location of an emergency call can be identified (manually mapped during the current implementation phase). The call has to be recorded in the log register at Central control room and details have to be entered in the computer in a predetermined format (template).

3 General Terms and Conditions

This tender document is intended for obtaining a techno commercial proposal from reputed organizations (hereinafter called 'Bidders') to supply, design, install, test, commissioning and support City Surveillance Network & Vehicle Tracking System for Emergency Vehicle for Nanded Waghala City Municipal Corporation (NWCMC).

This tender is issued as Two Part Bids for providing Integrated Video Surveillance System at Strategic locations identified in Nanded city and GPS based Vehicle Tracking System for Emergency Vehicles in Nanded as per Terms, Conditions and Specifications mentioned in the tender document. Please be advised that the rates, terms & conditions finalized against this tender shall be binding till completion of the entire scope to our full satisfaction. All bidders are required to quote for the entire solution encompassing both parts. Incomplete bids will be rejected. The Bidder shall have the single point responsibility for the complete solution including supply, design, installation, testing & commissioning.

3.1 Eligibility Criteria

Sr. No.	Criteria	Documents required to be attached with tender to establish eligibility
1	The bidder must be a registered corporate in India registered under the Companies Act 1956 or a Government Organization. The bidder should be operating in India for the last five years.	- Copy of Certificate of Incorporation - Copy of Consortium agreement / JV agreement or Memorandum of Understanding to work together in case of winning the project. - JVs / Consortium documents should clearly mention roles and responsibilities of each participating member.
2	The bidder shall be a reputable Indian / Multinational Company with primary business in Technology; and it must also be either an Original Equipment Manufacturer or Authorized system Integrator(s) of the principle OEM, in India.	- Service Tax Registration Certificate for the said services. - VAT Registration Certificates - Copy of PAN Card
3	The bidder (each of the bidders in case of a consortium, JV) should have positive net-worth **as on 31/03/2012.**	- Copy of the audited balance sheet of the company (s) - Certificate from the Chartered Accountant
4	The bidder (prime bidder in case of a consortium, JV) should have an **average annual turnover of at least Rs. 15 crores during last 3 financial years as on 31/03/2012**	- Copy of the audited Profit & Loss Statements for each of the last 3 financial years

Sr. No.	Criteria	Documents required to be attached with tender to establish eligibility
5	The bidder should have an overall **turnover of at least of total Rs. 1 crore** from **intelligent video analytics based security surveillance system projects** within **the last 5 financial years (as on 31/03/2012)**	- Work completion Certificates and copies of client citation / purchase order / work orders showing all the details sought. - Reference for each of the projects has to be given and should contain the following information - Name of organization, individual/s to contact, phone number and address
6	The bidder (prime bidder incase of consortium) should have an **ISO 9001** certification	- Copy of the valid certificates from authorized agencies
7	The bidder must not be blacklisted by a Central / State / Local government organization / institution / PSU	Self declaration, certified by auditor

- Bidder should submit duly signed and stamped documentary proof in support of all the Pre-Qualification Criteria mentioned above along with the Technical Bid. Offers submitted without valid supporting documents will be summarily rejected.

- This tender is not transferable.

- Timely implementation of the project is essence of this contract. Hence, only those Bidders having requisite capacity and capabilities and genuinely interested to meet our time lines are requested to participate in the Tender.

3.2 Consortium

1. Consortiums are allowed for this project.
2. Each member in a consortium may only be a legal entity and not an individual person.
3. The Bid shall specifically identify and describe each member of the consortium.
4. The consortium member descriptions shall indicate what type of legal entity the member is and its jurisdiction of incorporation (or of establishment as a legal entity other than as a corporation) and provide evidence by a copy of the articles of incorporation (or equivalent documents).
5. One participant member of the consortium shall be identified as the “Prime bidder” and contracting entity for the consortium.
6. This prime bidder shall be solely responsible for all aspects of the Bid/Proposal including the execution of all tasks and performance of all consortium obligations.
7. The eligibility criteria should be fulfilled by the consortium.
8. A commitment shall be given from each of the consortium members in the form of a letter signed by a duly authorized officer clearly identifying the role of the member

in the Bid and the member's commitment to perform all relevant tasks and obligations in support of the Prime/lead member of the Consortium and a commitment not to withdraw from the consortium

9. No change shall be permitted in the number, nature or share holding pattern of the Consortium members after pre-qualification, without the prior written permission of NWCMC.
10. No change in project plans, timetables or pricing will be permitted as a consequence of any withdrawal or failure to perform by a consortium member.
11. No consortium member shall hold less than 25% stake in a consortium.
12. Entities which are affiliates of one another are allowed to bid either as a sole bidder or as a consortium only.
13. Any entity can bid either singly or as a member of only one consortium.
14. Foreign bidders may participate through their Indian arm (subsidiary, authorized agent, branch office or affiliate), singly or in a consortium. If such foreign company desires that the contract be entered into with the Indian arm, then a proper back to back continuing (parent company) guarantee shall be provided by the foreign company clearly stating that in case of any failure of any supply or performance of the equipment, machinery, material or plant or completion of the work in all respects and as per the warranties/ guarantees that may have been given, the foreign company shall assume all obligations under the contract. Towards this purpose, it shall provide such comfort letter/guarantees as may be required by NWCMC. The guarantees shall cover inter alia the commitment of the foreign company to complete the entire work in all respects and in a timely fashion, being bound by all the obligations under the contract, an undertaking to provide all necessary technical and financial support to the Indian arm or to render the same themselves so as to ensure completion of the contract when awarded, an undertaking not to withdraw from the contract till completion of the work.

3.3 Earnest Money Deposit (EMD)

The tender shall be accompanied by Earnest Money of **Rs. 5,00,000/- (Rupees Five Lakh only).** The earnest money shall be in one of the following alternative forms:

(a) Demand Draft or Pay Order or Bankers' Cheque in favour of **"The Commissioner Nanded Waghala City Municipal Corporation Nanded "** from a reputed commercial bank, payable at Nanded.

(b) Irrevocable Bank Guarantee from a reputed commercial bank, **valid and operative till 30 days after the validity of tender, i.e., 180 Days from the date of opening of Technical bids (as published in the tender notice),** in the prescribed format of NWCMC enclosed with tender document (Annexure I). The bank guarantee shall be addressed to **The Commissioner, Nanded Waghala City Municipal Corporation, Nanded.** ***Non-judicial stamp paper of appropriate value shall be purchased in the name of executing bank only*.**

Tenders not accompanied with the earnest money mentioned above shall be liable for rejection.

3.4 Pre Bid Conference

- A pre-bid conference will be held in the office of NWCMC at 10.00 hours on 27/02/2013 with the prospective tenderers to clarify the technical or any other related matters.

- Any decision on the discussion requiring modification; amendments for tender document will be uploaded on the website.

3.5 Tender Submittal

Only one Envelope for the EMD and Tender Fees shall be submitted to the address mentioned below before the tender submission due date and time. Envelope shall be marked as Envelope for "EMD & Bid Processing Fee for Project City Surveillance & VTS" and tender reference.

Office of the DMC (Reforms)
Nanded Waghala City Municipal Corporation
Nanded

Tender documents will be available on the website http://nwcmc.maharashtra.etenders.in upto the date and time as shown above. Bidders who wish to participate in this tender shall have to register on this website.

Bids must be submitted online through http://nwcmc.maharashtra.etenders.in not later than the time and date specified in this tender document. Bidders are advised to refer to detailed e-tendering instructions contained in Annexure IV of this tender document.

NWCMC may, at its discretion, extend this deadline for submission of bids by amending the bid documents, in which case all rights and obligations of NWCMC and Bidders subject to the deadline will thereafter be subject to the deadline as extended.

No bid may be modified after the deadline for submission of the bids.

No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of the bid validity specified by the Bidder on the Bid Form. Withdrawal of a bid during this interval shall result in the Bidder's forfeiture of its bid EMD.

3.6 Innovative Proposals

Bidders are encouraged to offer creative and innovative ideas in the form of alternative proposals in addition to the baseline proposal. NWCMC shall consider & technically evaluate such a proposal only if

- It meets the NWCMC functional requirements and the goals & objectives.
- The solution workability is demonstrated/established by way of available use cases/case studies.
- The idea is NOT in its early conceptual stages that require further development and support for planning and implementation.
- The proposal is complete in all respects with full process description, assumptions, dependencies & challenges properly listed, various components well described & properly techno-functionally specified, the availability & maintainability of the components/spares offered satisfactory, etc.
- All the background Intellectual Property Rights belonging to him and/or, sub-contractor and/or a third party, which he intends to use during the execution of the contract are properly identified and listed.

Kindly note that NWCMC reserves the sole right to accept individual OR any combination of base proposal or alternative proposal.

3.7 Tender Opening

NWCMC will open all bids (only Technical Bids at the first instance) through the e-Tendering website of http://nwcmc.maharashtra.etenders.in in the presence of Bidder or his representative who choose to attend, and at the following address:

Office of the DMC (Reforms)
Nanded Waghala City Municipal Corporation
Nanded

The Bidder's representative who is present shall sign an attendance register evidencing their attendance. In the event of the specified date of Bid opening being declared holiday for the tendering Authority, the Bid shall be opened at the appointed time and location on the next working day.

The Bidder's names, bid modifications or withdrawals, bid prices and the presence or the absence of requisite bid security and other details will be announced at the time of opening.

Commercial Bids of only those Bidders who qualify on the basis of evaluation of technical bid & Demonstration will be opened in the presence of the qualified Bidders or their representatives at pre-specified time and date which will be communicated to the qualified Bidders well in advance.

3.8 Confidentiality

The successful bidder is bound to perform the agreement/contract in utmost confidentiality and shall not copy documents / information of the Corporation and shall not divulge any secrets of knowledge of things or processes which Bidder comes to know or acquires during

the performance of the contract. Any breach on this account shall render the contract liable to be terminated by NWCMC. NWCMC also reserves the right to initiate appropriate legal action against the Bidder for breach of any copyright or infringement of intellectual property of NWCMC disclosed to Bidder during the performance of the contract.

3.9 Proposal Preparation Costs

NWCMC shall not pay any costs associated with the preparation, submittal, or presentation of any proposal or for any survey / requirement gathering work carried out by the bidders.

3.10 RFP Amendment and Cancellation

NWCMC reserves the unilateral right to amend this RFP in writing at any time. NWCMC also reserves the right to cancel or reissue the RFP at its sole discretion. If an amendment is issued it shall be provided to all vendors, whose intent to respond to this RFP is known. Bidders shall respond to the final written RFP and any exhibits, attachments, and amendments.

3.11 Right of Rejection

NWCMC reserves the right, at its sole discretion, to reject any and all proposals or to cancel this RFP in its entirety. Any proposal received which does not meet the requirements of this RFP may be considered to be non-responsive, and the proposal may be rejected. Bidders must comply with all of the terms of this RFP and all applicable Constitutional laws and regulations. NWCMC may reject any proposal that does not comply with all of the terms, conditions, and performance requirements of this RFP.

NWCMC reserves the right, at its sole discretion, to waive variances in technical proposals provided such action is in the best interest of NWCMC. Where NWCMC waives variances in proposals, such waiver does not modify the RFP requirements or excuse the Bidder from full compliance with the RFP. Notwithstanding any variance, NWCMC may hold any Bidder to strict compliance with the RFP.

3.12 Compliance To Tender Enquiry Document

Tender should be in exact compliance to the tender enquiry conditions. All Annexures duly filled up along with necessary documentation as requested in the tender enquiry and / or required to support Successful Bidder's claim must be enclosed with the tender in the first instance itself. Bidders have to specifically confirm the compliance to the tender enquiry conditions along with deviations, if any, specifically highlighted as deviation statement.

Even if there are no deviations to NWCMC tender enquiry, a NIL deviation form is required to be submitted with non-applicable clauses struck off.

Any willful attempts by the Successful Bidder to camouflage the deviations by not mentioning them in the prescribed format may render the bid itself non responsive. In case the deviations are to be necessarily mentioned somewhere else in the bid, explicit reference of the same should also appear in the declaration for deviations.

3.13 Limitation Of Liability Clause

The successful bidder (its partners, directors, staff, agents and associates) shall not be liable for any losses, damages, costs or expenses arising out of this engagement save in so far as they are and have been determined to have been directly and wholly caused by default of the successful bidder and in such circumstances the aggregate liability of the successful bidder shall be limited to an amount not more than the total fees actually payable by the sponsor for this engagement, but how ever there shall be no such limitation in case of misconduct or negligence of the Successful Bidder.

4 Detailed Scope of Work

Scope of the job includes but is not limited to supply, design, installation, implementation, testing and commissioning, training, providing user manual, providing 12 months warranty and 48 months post warranty AMC for the total solution including all hardware, software, materials, services and support etc. for providing a City Surveillance Network & GPS based Vehicle Tracking System for Emergency Vehicle system for City Surveillance & VTS, Nanded, project so as to fulfill the objectives listed in this document. Job also includes all related jobs at controlling office. All necessary cabling / wiring / sockets and allied infrastructure conforming to respective quality / standard norms are also included in the scope of this job.

4.1 Solution Overview

The envisaged City Surveillance & VTS shall use IP Cameras to connect to a centralized command and control station. Fixed Day/Night IP based Surveillance Cameras shall be used at the entry & other strategically important points while PTZ Cameras shall be used for general surveillance of the location including number plate viewing.

NWCMC has planned for total 49 locations across Nanded with approximate 100 cameras.

The IP cameras shall be connected to Network. A network, comprising an 8-port/24-port switches and media converters connected with CAT6 & SM-OFC or wireless link or lease line as per feasibility, shall be laid at each camera location for transmission of signal from Camera to the Control Stations.

At every camera location, an IP66 rated, lock/sealable rack shall be installed for housing the power supply, audio amplifier & the required communication equipment like media converter etc. The electrical, audio & the data cabling at the field location shall be done as per the relevant ISO/IEC guidelines for outdoor structured cabling. The aim is to protect the cable from acts of vandalism. All the field equipment shall be industrial grade suitable for outdoor use under harsh environmental conditions. The poles/masts/towers required to be erected for mounting cameras &/or wireless equipment shall be constructed as per the specifications & guidelines provided in this document.

The proposed solution should allow NWCMC/Police officials to locally and centrally monitor its facilities from a remote location on a Portable/Fixed personal computer monitor using IP-based Cameras in a bandwidth efficient manner. The solution should also enable viewing of camera feeds on smart phones as well as have the capability of utilizing smart phones as remote cameras which provide feed to the control room in the case of emergencies.

The Solution should capture, store, and analyze digital video images to enable central monitoring, increase operational efficiency, reduce liability, minimize risk and secure people &property.

The IP based system should ensure secure and ready video access from virtually anywhere on NWCMC IT network. Authorized personnel should be able to rapidly zero in on images of

specific locations, people, and events, anytime and anywhere, without reviewing countless hours of video recordings. Trans-coding should enable the transmission of video at low band width.

The system should be provided with weather proof outdoor IP based Fixed Camera, lens, housing & mountings to capture video which would be viewed & controlled through the Video Management Software, recorded and stored.

The system should also provide Weather Proof outdoor IP based PTZ dome cameras to capture video which would be viewed & controlled through the Video Management Software, recorded and stored.

The Citywide Surveillance System must have built in robustness to continue to operate and provide live remote access under disaster conditions. Under disaster conditions or under malicious attacks, damage to the system should remain localized and the system as a whole should continue to operate without interruption.

The video management software will be used to configure the video management server, and once installation and setup are complete, the video management server should run seamlessly in the background to manage the connections, access and storage. Video management server should receive MPEG-4 or better quality video across the network from Video IP Camera. The server should stream incoming video and audio to a connected storage.

The viewing mode can be controlled remotely by a management system. The Video Management Server, Recording Server, 2 Workstations & Monitors will all be placed at the control room.

Video transmission should be mainly over a wired network. However, for cameras where feasibility is a problem, wireless transmission or lease line is recommended as can be seen from the Bill of Materials. Wired connectivity is suggested through a combination UTP and optical fiber cables.

The Successful Bidder will commission the network as per the recommended architecture to achieve the Video surveillance and VTS requirements. However, wherever site conditions mandate a modification in the recommended architecture, the Successful Bidder should seek prior approval from NWCMC before executing the job. Optimum speed, data transfer capabilities and video frame rates should be ensured by the successful bidder while implementing the solution.

Successful bidder should specify clearly the RMT rates for all cables (Electrical, Control& Video signal cables) including commissioning charges while participating for the Tender.

Power supply source to the camera and other outdoor & indoor equipment should be UPS backed up and conditioned power supply. NWCMC shall be responsible for providing the power supply to the field equipment. Successful bidder should offer relevant power

conditioning equipment for the safety of the site equipment. Appropriate outdoor casings and housings should be used for the outdoor equipment.

The Successful Bidder shall conduct a site survey of designated locations, and evaluate the feasibility of the wired network and wireless wherever specified, with regards to cameras within LOS. The bill of material attached in this document is only indicative and the successful bidder has to provide the detailed BOQ &calculate the design needs and obtain NWCMC's signoff before commencing the job.

City Surveillance & VTS shall allow event based and motion based alarms and schedule based recording options of locations/events deemed sensitive by NWCMC within the city and within the range of the camera.

The Outdoor cameras shall be housed in IP66/NEMA4 casings. All housings shall be of the same make as that of the camera.

It should be possible to Control (Pan-Tilt-Zoom -for PTZ cameras), View and record (for all cameras) the events occurring within the range of camera at a centrally located PC at control location.

The Server shall make continuous recording of all cameras for 10 days @ 25 fps and full resolution.

After commissioning the City Surveillance & VTS, the same shall be demonstrated for all its capabilities to the relevant user department to make them familiar with the system on mutually agreed dates.

Approved makes in the technical specifications have been mentioned to ensure certain minimum standard of compliance. However, if the bidder desires to recommend any other make, he will have to demonstrate the suitability of the product and its technical standing vis-à-vis approved brands. Requests for approval of other makes can be made till the date of pre-bid meeting. Criteria for approval will include but will not be limited to global market share, domestic market share, certifications and testimonials. NWCMC's decision in this regard will be final. The OEMs may have to make technical presentation on the day of prebid meeting. The OEM will also have to submit documents/presentation in support of their respective claims.

Please note that make approval is **NOT** tantamount to technical qualification and the bidders will have to justify the technical eligibility for the equipment model offered, even though the equipment may be of an approved make.

4.2 System Overview

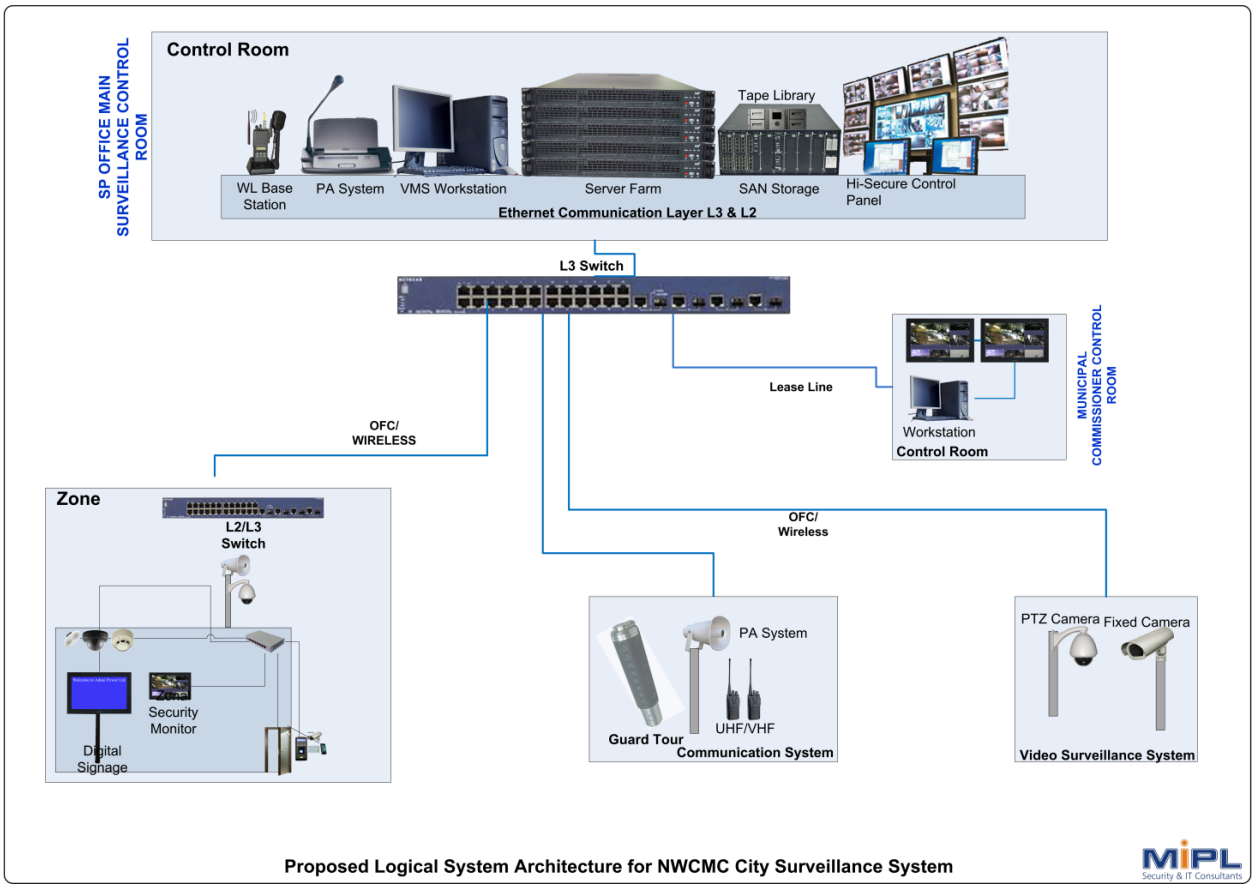
The indicative system architecture is provided in tender document.

The Video Surveillance System will consist of, but not limited to the following:

- Fixed Day/Night Camera
- PTZ Camera
- Video Storage Server
- Video Management Server
- Video Monitoring Workstation
- Video Management & IVA Software
- Disaster Management & Command & Control Software
- PA & Panic Alarm System
- 42” LCD Monitor
- 24 Port Layer-2 Giga Switch
- 24 Port Layer-2 Managed 10/100Mbps Switch
- Passive Networking Components
- Online UPS of required rating
- UPS at camera locations

Central command and control center location at SP office will require below bill of material at broad level

- Video monitors 9 No. (Matrix of 3x3)
- Monitoring workstations with 20” monitors (for VMS and VTS)
- LAN components
- Monitoring and recording server
- SAN/NAS
- Online UPS of desired rating

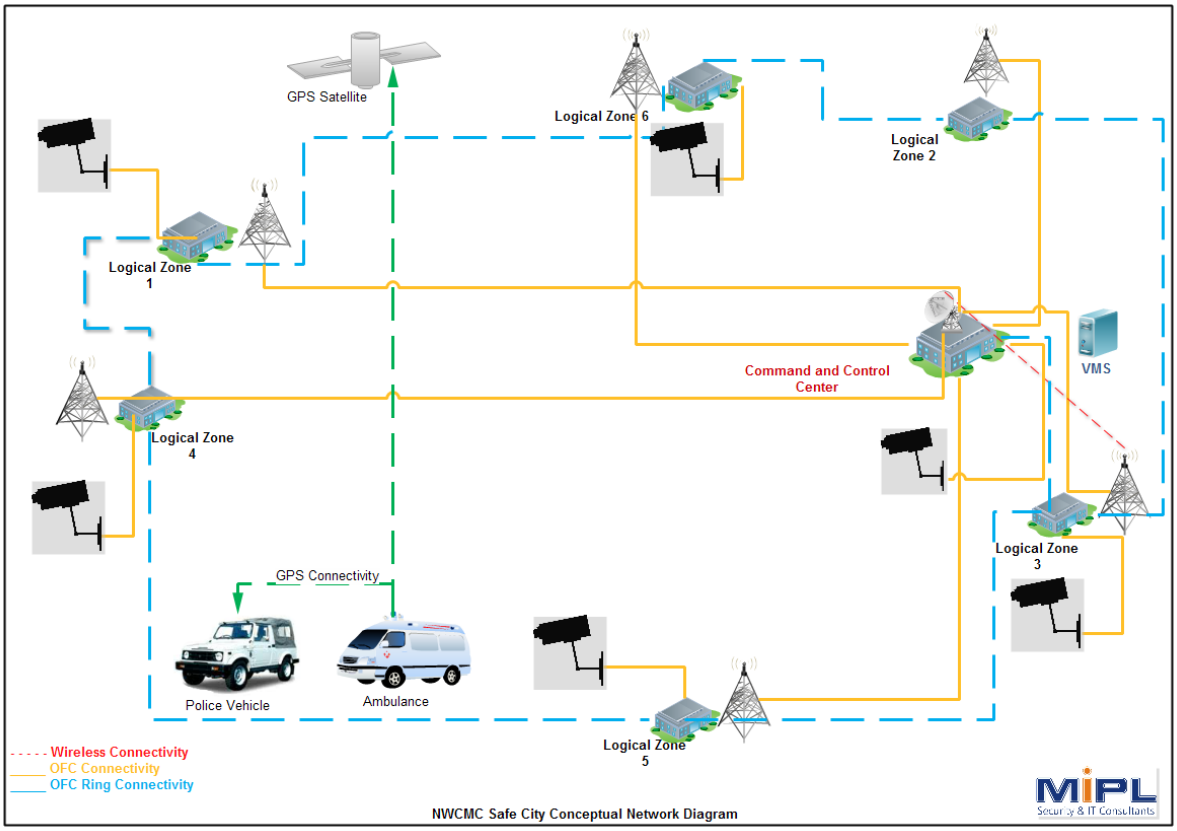


This is the centralize Commanding Center for Safe City Surveillance Cameras in brief.

The GPS based tracking System will consist of, but not limited to the following:

- GPS tracking device
- GPS tracking server
- User interface
- AVL software

Backbone Network - Conceptual representation



4.3 General Specifications

4.3.1 Proposed system shall be an open standard based integrated system aimed at providing high-speed manual/automatic operation for best performance. System should be easy to maintain. The OEM should give an undertaking that the offered software additionally supports cameras of 5 approved makes. **All equipment used in this system should support IP V6 protocol.**

4.3.2 Surveillance system shall use video signals from various types of indoor/outdoor CCD/CMOS colour IP cameras installed at different locations, process them for viewing on workstations/monitors at Central Control Room /local control rooms and simultaneously record all the cameras after compression using MPEG4/H.264 or better standard.

4.3.3 System shall have all IP CCD/CMOS Colour Video Cameras with Fixed as well as Pan Tilt and Zoom (PTZ) type cameras. All the cameras should be capable of day and night viewing under very low light conditions.

4.3.4 The system should be complete with IP Cameras, Switch and Servers with video management software for recording, storing and playing, AVL software, Colour Video Monitors, Mouse-Keyboard, Joystick, PC for System Administration/ Management/ Maintenance etc. Also, the system shall use the Audio Out of the IP cameras as a part of the PA system for zone-selectable mass communication of audio messages from Control Room to the selected zone/s. The vendor is required to provide the necessary speakers, amplifiers & the zone selector for implementation of the PA System. The system shall also use a panic alarm switch connected to the relay-in of the camera for raising an alarm.

4.3.5 System should ensure that once recorded, the video cannot be altered or tampered, ensuring that the audit trail is intact for evidential purposes. All the data communications taking place within the network need to be AES (128 bit) encrypted and SSL authenticated so that any unauthorized access to the video data can be prevented.

4.3.6 System shall provide minimum storage for 24 hours X 10 days recordings of all the cameras @ 25 FPS, full resolution quality using MPEG 4/H.264 compression techniques for all cameras.

4.3.7 The proposed Video Surveillance system shall provide video recording at 4CIF @ 25 frames/sec. The recording resolution and frame rate for each camera shall be user program able. It shall be possible to record camera views on continuous, scheduled and event-triggered basis. The Area under surveillance shall be monitored from Local Control Room.

4.3.8 The system should provide facility for remote viewing to log on and view any camera from anywhere.

4.3.9 Power for all the field equipment will be conditioned using locally connected UPS at each camera location. If any equipment operates on any voltage other than the standard supply voltage (230 V AC single phase) and supply frequency, necessary voltage/frequency-conversion/correction device of approved make shall be supplied along with the equipment at no cost to NWCMC.

4.3.10 Power for all control room equipment would also be conditioned using a single line interactive UPS.

4.3.11 All the control equipment e.g. switch, passive networking items etc. shall be provided in a standard Network Rack in the control room of required size.

4.3.12 All the indoor cameras& control equipment shall be suitable for operation from 0 degree C to 50 degree C and relative humidity upto 95 % non-condensing. Cameras& other equipment, meant for outdoor installations, shall be suitable to work from (-) 10 degree C to (+) 50 degree C with RH up to 90% non-condensing. This temperature range may be achieved with blower unit if required.

4.3.13 Possible applications of the proposed system should include tracking movements/ verification and recognition, through high quality images, of persons and objects including vehicles. The recordings of the scene of the Jurisdiction shall be helpful in case of enquiries etc. in establishing the truth.

4.3.14 Bidders should confirm that all recordings will be admissible as evidence in any court of law and should be able to demonstrate the following standard features: Image Quality, tamper-proof image recording and storage, tamper-proof export, digital watermarks/time/date stamps/checksums & full audit trail.

4.3.15 Manufacturer must have service support in Maharashtra and specifically in or around Nanded.

4.3.16 Bidder should be able to demonstrate to the technical committee the complete functioning of the system along with the software deliverables as described in this document during technical evaluation. The complete working system comprising of one outdoor P/T/Z Camera with controller, one fixed camera and System software with Analytics, PC/workstation, wireless transceivers, PA System etc. should be demonstrated to the NWCMC technical team & the Consultant.

4.3.17 To the extent possible, Cameras should be installed on the existing structures, buildings, flood light towers, watch towers etc by providing necessary brackets, hooks, nuts & bolts. If it is necessary to provide separate poles to mount the cameras at desired locations, payment for poles upto 7m and 20m wherever required will be made separately.

4.3.18 Monitoring, Control & Storage application software should support:

1. Optimized decoder and display engine
2. Sixteen simultaneous connections for recording and monitoring without lag & with different monitor layouts
3. Multiple screen layouts and full screen display
4. Multi-channel monitoring and recording simultaneously
5. Manual, event driven and scheduler recording m ode
6. Remote digital output and input indicator
7. Zero waiting database searching and event preview
8. Remote PTZ camera control
9. Hard disk storage indicator and alarm
10. High compression ratio and storage capacity
11. Audio monitoring/recording support
12. Simultaneously multiple window controlling
13. Auto launcher after PC rebooting
14. Real-time monitoring, PTZ control & Recording
15. Simultaneous real-time monitoring and audio and video recording
16. High quality video, upto full-screen display
17. High compression ratio
18. Smart play back
19. Triggeredeventbrowsingwithatleast9preview video windows
20. Fast data base searching
21. Auto alarm in different ways
22. Account-password protection
23. Different recording modes: Event-driven, Scheduled and Manual recording for each camera
24. The software should display video in 16 channels on each screen and 32 channels using sequencing on single PC
25. The software should support the video server/ encoder and IP camera for future up gradation if required

26. The software should support the MPEG- 4 video compression
27. The software should support a frame rate of 25 frames per second for PAL at4 CIF resolution for at least 12 cameras.
28. The software should support AVI file format synchronized with audio/video, printer and bitmap for snapshots.
29. The software should support minimum resolution of 352 x 288 and maximum resolution of 704 x 576
30. The software should support minimum three detection windows for each channel with intelligent adaptive motion detection by modifying the sensitivity and object size.
31. The software should support Manual, event driven and scheduled, video only, audio only, or both recording modes
32. The playback should support various schemes with
    a. Date and time interval
    b. Event triggering with preview for every camera.
33. The playback module should offer various controls like play, stop, pause, fast forward, slow forward, pull-bar, zoom in, zoom out and speed ranging from 1/16 to 16 times.
34. The software should support various alarm features like monitoring 16 channels 1/0, in-image motion detection indication, local warning sound etc.
35. Auto run facility at Startup – Software should be capable of auto start up state right after Windows boot up

4.3.19 Features of Video Analytics Software(VAS)

1. VAS should be Open IP-Surveillance product, enabling simultaneous digital video recording from network, and analog devices, intelligent video analysis and remote access to live and recorded images from any networked computer. VAS OEM should give an undertaking that devices from reputed camera manufacturers can be used for video analytics.
2. VAS should be able to automatically track and classify objects such as cars and people and push content to security personnel as required.
3. VAS should be capable of Real-time analysis of connected cameras to detect abnormal activity and Security threats.
4. VAS should jointly and simultaneously be able to manage video analytics and video management as one product.
5. VAS should have Automated PTZ camera control for zooming in on interesting events without the need for human intervention.
6. VAS should be completely scalable, with a many-to-many client-server model allowing multiple physical systems to be used in an array of Servers. The server specified in the tender document indicates only the minim um requirements. However, bidder should offer the Server system to suit the video analytics requirements specified herein.

7. VAS should have the flexibility of connectivity and managing network and analog, Fixed & PTZ IP cameras
8. VAS should be able to filter large amounts of video and focus on human attention appropriately
9. VAS should have maximum scalability and enable easy migration path from analog to intelligent digital network.
10. VAS should support display of time Line, Customizable Site Map, Live Video, Video Playback, Integrated Site Map, Remote Live View, Multi-site capability, Encryption, Watermarking and Event based Recording
11. VAS should be able to do video analytics based on defined policies pre-fed at the time of installation. It should have specific features like Motion & Blackout masking, Perspective settings, environment selection, map configurations, disk usage limits, footage expirations and software health monitoring
12. VAS should allow to add, edit, delete or disable and enable Policies.
13. The definable and available triggers should be for
    i. Vehicles Moving – should activate alarm if it detects Vehicles moving in the scene and passing through the Alarm Mask. Object Direction may be used to further filter alarms, as well as Object Speed, Object Size.
    ii. Vehicles Parking – should activate alarm if vehicles are parking in Alarm Mask. The Length of Time field in seconds or minutes may be used to specify how long vehicles are able to park before the alarm
    iii. Vehicles Starting to Move- should activate alarm if it detects a vehicle starting to move from a stopped position. If a parked car begins to move, an alarm will sound. Object Direction, Object Speed and Object Size may be used to
    iv. further filter alarms.
    v. People Moving- Similar to the Vehicles Moving trigger, but should apply to People.
    vi. Anything Moving- Similar to the Vehicles Moving trigger, but should apply to any objects which are moving (People,Vehicles, Unknown).
    vii. Camera Obstructed / Out of focus - should activate alarm if the field of view is obstructed or goes out of focus.
    viii. Cord Cut: Will sound alarm if the video signal is lost.
    ix. Hardware alarm Input- Should be able receive signals from external devices through alarm I/O and act accordingly.
    x. Unknown Starting- Similar to Vehicles Starting to Move trigger, but should apply to objects which have not been classified as Human or Vehicle.
    xi. Unknown Moving- Similar to Vehicles Moving trigger, but should apply to objects which have not been classified as Human or Vehicle.
    xii. Unknown Parking- Similar to Vehicles Parking trigger, but should apply to objects which have not been classified as Human or Vehicle.

xiii. Object left Behind- should sound alarm if objects are discarded, such as a bag on a sidewalk.
xiv. Object Removed- Similar to Object left Behind trigger, but should apply to objects removed.

14. Software should have Real-time Video Analysis features like:
    a. Motion Tracking
    b. Object Classification
    c. Object Counting (people/vehicles)
    d. Object Persistence
    e. Alarm Policy Settings:
    f. Alarm on object type
    g. Alarm on object direction
    h. Alarm on camera manipulation
    i. Automatic Alarm Response:
    j. Automatic PTZ control
    k. Audible Siren
    l. Alarm I/O (relay)
    m. Text to Speech
    n. Email
    o. FTP
    p. Event based search

15. The Automatic vehicle tracking devices should combine both active and passive tracking abilities: when a cellular network is available and a tracking device is connected it transmits data to a server; when a network is not available the device stores data in internal memory and will transmit stored data to the server later when the network becomes available again.

4.3.20 Typical Architecture - Major constituents of the GPS based tracking are

1. GPS tracking device: The device fits into the vehicle and captures the GPS location information apart from other vehicle information at regular intervals to a central server. The other vehicle information can include (in future - not in present scope of work) fuel amount, engine temperature, altitude, reverse geocoding, door open/close, tire pressure, cut off fuel, turn off ignition, turn on headlight, turn on taillight, battery status, GSM area code/cell code decoded, number of GPS satellites in view, glass open/close, fuel amount, emergency button status, cumulative idling, computed odometer, engine RPM, throttle position, and a lot more. The device should have the capability to connect 4 I/Os, which should be further cascadable.

2. GPS tracking server: The tracking server has three responsibilities: receiving data from the GPS tracking unit, securely storing it, and serving this information on demand to the user.

3. User interface: The UI determines how one will be able to access information, view vehicle data, and elicit important details from it.

4.3.21 The automatic vehicle locater unit have to be installed with GPS receiver to all 25 vehicles (mentioned in the tender document), and to be linked with Nanded city Police control room.

4.3.22 The whole system has to be integrated to work as a full-fledged solution so that when an emergency call emerges from a public, it has to be identified from where the call emerges. It has to be located in the digital map and nearby patrol vehicle as shown in AVL system has to be diverted. The call has to be recorded in the log register at Central control room and details have to be entered in the computer in a predetermined format (template).

4.3.23 It involves GPS based Automatic Vehicle Tracking System, electronic form management and integration with digital land base map. It is intended to use Geographically Information System (GIS) and Global Positioning System (GPS) technologies to track the Police Van/Vehicle and graphically display its position on the digital map of Nanded City at the Central Police Control Room It is proposed to carry out recording of all calls received from citizen of Nanded. Each individual call will be recorded and that call will be forwarded to the dispatch operator on the LAN along with the location details. Dispatch operator will locate nearest Police Van/Vehicle on the digital map and forward it through GPRS/CDMA channels.

4.4 Detailed Scope Of Work

i. Supply, design, installation, testing and commissioning of Hardware and Software as per system design and schedule of quantity.

ii. Configuration of Hardware, Networking devices and Software as per system design & site requirement.

iii. Training on system operation to staff at the site.

iv. Detailed training on System maintenance at site as well as at the premises of the system provider.

v. The complete control room set-up (~300 sft) including necessary electrical & data/video cabling as per the relevant ISO standards with False flooring/ceiling, aesthetic lighting, workstations, wall painting, partitions/room dividers for Data Racks areas, biometric access control, EM lock, fixed indoor cameras etc.

vi. City Surveillance & VTS networking and integration system to be supplied and installed should be covering all the areas mentioned above.

vii. The control station in the Main SP office should be the heart of the City Surveillance & VTS. Major equipment inside this control room would consist of but not limited to Optical Fiber Receivers, Server, PC/Workstation along with video wall, monitors for viewing.

viii. Architecture of the system should be fully modular and should be designed in a manner to enable the complete system to be gradually enhanced and enlarged according to the future operation, safety and security requirements of respective bottling plants.

ix. The Cameras should be capable of marking at least 16 areas for motion detection purpose within the plants within the range of the camera.

x. Necessary alarm /indication shall be raised at the security cabin/at the monitoring station indicating that there is motion in the marked area.

xi. The City Surveillance & VTS is desired for NWCMC for constant and remote video surveillance of earmarked locations.

4.5 General

i. The system shall be designed by selecting high-grade components of proven quality and proper design of system electronics to ensure minimum down time.

ii. The Video Surveillance and AVL software shall be governed by the operating system running in a real time mode and shall be able to meet the minimum functional requirements as specified.

iii. The system shall have an extensive set of self-diagnostic routines, which shall locate and identify the system failure at least up to individual equipment level.

iv. The system shall be internally protected against system errors and hardware damage resulting from electrical transients on power wiring and signal wiring which may be generated by switching large electrical loads or by power line faults and connecting & disconnecting devices or removing or inserting printed circuit boards in the system .

v. All PCs provided should be of reputed make and latest model. Assembled PCs are not acceptable. Bidder should specify his criteria for capacity planning & sizing, performance criteria for arriving at the recommended configuration.

vi. Following authorizations shall be made available from OEMs:
    a. Technical compliance to the specifications and authorization for participating in the tender on manufacturer's behalf.

b. Authorization for providing copy of test reports complying the specifications at the time of inspection.

c. Authorization that the items quoted by the tenderer are in production and would be supported for service for at least 5 years from the date of the tender.

vii. All products such cameras, active components etc. shall have quality system compliance with the following standards:

I.S./ISO 9001/EN 29001; CE / FCC / UL Certified;EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class B, ICES-003 Class B, VCCI Class B, C-tick AS/NZS CISPR22 , EN 60950, Power supply: EN 60950/ UL/ CSA

viii. All the equipment of external fitment should be weather proof IP-66/ NEMA 4 complied and vandal proof / vermin proof.

ix. Manufacturer must provide reference list of installation for similar products/ components.

x. The warranty shall consist of repairing or replacing defective parts for a period of 1 year from the date of supply with 4 years of post-warranty comprehensive AMC.

xi. The bidders will have to submit a Solution Assurance Certificate from the VMS / VTS software OEM regarding the workability of the proposed solution, as per the format provided in Annexure VI.

4.6 Spares

Commissioning Spares:
All commissioning spares required for installation, testing and commissioning of system shall be at bidder's scope.

Warranty Spares:
All spares required for maintaining the complete system during the warranty period of 12 months shall be at bidder's scope.

Post Warranty Spares (During comprehensive AMC)
All spares required for maintaining the complete system during the comprehensive AMC period of 48 months shall be at bidder's scope.

4.7 Approval Of Drawings

Successful Bidder after placement of order shall be fully responsible to get all drawings approved from NWCMC and the Project Consultant before supply.

Approval of drawings by NWCMC or the Project Consultant does not relieve the Successful Bidder from his responsibility of performance guarantee of equipment covered under this tender.

4.8 Scope Of Works-Inclusions And Exclusions

Works Included: The Scope of work has been covered in the above specifications in general. However, the Successful Bidder shall be responsible to complete the works in all respects and in doing so, provide/supply all facilities not covered above specifically, but nevertheless required for the satisfactory performance of complete system.

Works Excluded: Existing Watchtowers, Light poles, Building tops can be considered for mounting camera and other equipment. Additional poles/towers etc if required will be paid separately.

4.9 Standard Contract/Operating/Payment Terms

The successful bidder should maintain the whole system on an ongoing basis, during warranty period of one year & subsequently during the comprehensive Annual Maintenance Contract (AMC) after the completion of warranty period for 4 years. During warranty period all materials / parts / services as required to maintain the system on an ongoing basis is included in the scope of the job and no extra payment will be made by NWCMC.

The successful bidder shall provide service support during business hours, if and when required, besides such other support like a 24/7 telephonic assistance etc., as may be required so that the system operates on a continuous basis.

The successful bidder will be the single point contact for NWCMC for all support related issues with respect to hardware/software installed by them. If any third party help is required in resolving any issue, it will be the sole responsibility of the bidders to arrange for such help.

The period of project completion shall be 4 (four) months from the date of PO.

Payment Terms:

- 40% against material delivery, 30% against commissioning, 20% against UAT & 10% after successful completion of the Defect Liability Period.
- All types of recurring expenditure including the network charges and the GPRS connectivity charges (but excluding the AMC charges) shall be combined and divided into 20 quarterly installments and paid to the bidder at the end of every quarter. The first quarter of the defect liability period shall be the first quarter for payment of the recurring charges.

- The AMC payment shall be made at the end of every quarter after the beginning of the AMC period.

The bidder will have to enter into a Service Level Agreement with NWCMC containing the system performance & service related issues. The expected values of the parameters are as follows:

I. Guaranteed System Uptime: 99%

II. Network Availability: 99%

III. Latency (System): < 150 ms

IV. Bandwidth: ~ 3-5 MBPS per camera (To be determined by the bidder for the required viewing/storing parameters)

V. Scheduled Service: Once in a month

VI. Critical Service Response Time: 24 hours

4.10 Performance Bank Guarantee

The bidder(s) with whom the contract is decided to be entered into and intimation so given will have to make a Performance Bank Guarantee inclusive of Security Deposit for an amount equivalent to 10 % of the Purchase Order / Contract value (excluding the AMC and the recurring charges), which shall be valid for a minimum period of eighteen (18) months. The Bank Guarantee on stamp paper of requisite value shall be accepted only from Scheduled Indian Banks (other than co-operative banks). All Bank Guarantees shall be unconditional and encashable on presentation to the issuing Bank. On receipt of CPBG, the EMD of the bidder will be returned.

In case successful bidder fails to submit a valid CPBG of required amount within 15 days from the date of intimation of acceptance of its tender, NWCMC reserves the right to cancel the order and forfeit its EMD.

4.11 Delay in completion / Liquidated Damages

Timely execution is extremely critical in the case of this project. Execution of the project shall include supply, installation, commissioning, training & stabilization of the system in all respects. In case of delay in execution of the order beyond contractual delivery date as stipulated in the order NWCMC at its option can either -

i) Accept the delayed delivery on price reduced by sum equivalent to half percent (0.5%) of basic PO value (excluding CAMC) per week of delay or part thereof, subject to a maximum of 5% of basic PO value (excluding CAMC).

OR

ii) Cancel the order in part or full and purchase such cancelled quantities from elsewhere on account at the risk of the seller without prejudice to its right under (i) above in respect of goods delivered. All costs and expenses incurred by NWCMC, if any, resulting from cancellation of order shall be recovered from the seller.

4.12 Performance Testing And Warranty

The Successful Bidder shall carry out the performance test run of the complete system at site after satisfactory installation/ implementation under his supervision. Training of operators should be as per details mentioned in this document after commissioning of the system without any extra cost to NWCMC.

The system provided should be guaranteed / warranted for any kind of manufacturing defects and satisfactory performance for a period of 12 months from the date of acceptance / final sign off obtained from concern official of NWCMC.

4.13 Comprehensive Annual Maintenance Contract (AMC) Post Warranty

i. Complete system will be covered under post warranty Comprehensive AMC as per rates quoted in the price bid for a period of 48 months from the date of completion of warranty. The post warranty comprehensive AMC shall be a separate annual contract for each of the 4 years period and shall be signed at beginning of the respective period. The post warranty comprehensive AMC rates quoted in price bid for 4 years shall be included in the evaluation.
ii. During the post warranty comprehensive AMC period all software/ services etc. as required to rectify any defect, will be provided by the successful bidder at no extra cost to NWCMC. Material / hardware /spares as required for such maintenance would also be provided by the bidder. No extra amount is payable by NWCMC for this post warranty AMC other than quoted AMC rates.
iii. Comprehensive AMC comprises of the following services as a minimum
    a. Routine maintenance service: This is an on-site maintenance, which should be carried out four times in a year. Purpose of visit is to check system health and problem solving.
    b. Breakdown maintenance service: In case of system breakdown, Successful bidder shall depute Engineers to restore the system at the earliest, within 24 Hours.
    c. Software support and technical services: Software additions / modifications, technical assistance to Purchaser's Engineers, technical discussions with

Purchaser's Engineers /Technicians at successful bidder's facility etc. are included.

d. For the entire period of the project, which includes the defect liability period of 1 year and the 4 years AMC, the bidder shall depute at least one person who shall be placed in the control room and who shall be responsible for the daily maintenance of the system. The charges for this person shall be included in the AMC charges. The personnel deployed to site shall have thorough knowledge of the system and at least two years of experience in maintenance of similar system. An experience certificate to this effect to be handed over to the Project Consultant.

iv. Quarterly prorata payment of finalized AMC amount will be made after successful completion of period of respective post warranty AMC, should NWCMC enter into AMC for that respective year.

v. NWCMC reserves the right to order for the post warranty AMC along with the main order or after the completion of the warranty period of one year, and such decision solely is at NWCMC's discretion. NWCMC reserves the right to sign the post-warranty AMC for all 4 years or part of it or none.

4.14 Bank Guarantee for AMC

The vendor shall furnish AMC Bank Guarantees (BG) equivalent to 10 % of AMC value. The AMC BG shall be **submitted to the NWCMC before the expiry of warranty period** failing which the Performance Bank Guarantee shall stand forfeited. The AMC BG shall be **valid for a minimum period of 48 months**.

4.15 Upgrades

Any upgrades to software with respect to firmware and revisions during the period of contract, warranty and AMC should be provided by the successful bidder at no extra cost to NWCMC.

4.16 Training And Handholding

The Successful Bidder will train NWCMC personnel at two levels

(a) Training for the control room operator and security staff
(b) Training for NWCMC supervisory staff

4.17 Scalability

The system design shall permit the on-line addition of new system /subsystems (new work station, peripherals, cameras, encoders etc.) with no disruption to either the operation or system communications for future expansion. The offered software should have in-built capability / provision to take care for future expansion and new services & features etc. The

user configurable menu driven modules should be available in the software for any addition/deletion/change in the Plant configurations. No hard coding is allowed for the above functionality. Surveillance System should be scalable to meet additional business, safety and security requirement of the NWCMC.

The system should be scalable to interface with NWCMC network/Switches. All system communications shall be based on the ISO, Open system Interconnect (OSI) reference model. All communication solutions should be Ethernet Based.

4.18 NWCMC Deliverables /Scope

NWCMC shall make available the sites to the Successful Bidder to carry out the job from administrative point of view.

Successful Bidder should specify the space requirement as infrastructure for implementing his system based on which, NWCMC shall ensure adequate space for placing the equipment.

4.19 System Acceptance Criteria

The system will be accepted by NWCMC based on the following criteria:

- All systems to be verified operational as defined in the Scope of Work above.
- Surveillance & VTS system installed and functioning, as described in the FDS submittal.
- All manuals and drawings are delivered to NWCMC.
- All software licenses are delivered to NWCMC. Master Server license, Software analytics license, camera licenses, AVL license should be handed over to NWCMC.

4.20 Evaluation Process

The NWCMC will conduct a comprehensive, fair and impartial evaluation of all proposals received in response to this RFP submitted by the proposal due date and time specified in this document. The categories that shall be considered in the evaluation of proposals include Qualifications and Experience, Financial Strength, Market Share, Proposed Solution, Technical Approach, Subject Knowledge and Commercials.

4.20.1 Proposal Evaluation Categories

Only those proposals will be evaluated which contain the EMD and other mandatory bid requirements like turnover, experience, submission of mandatory certificates, documents or

papers etc. detailed in other sections of this RFP.

70 % weightage shall be given to the technical qualifications & 30 % for the commercial bid. The price bids of the bidders who have scored more than 60 points in the technical evaluation shall only be opened for further commercial evaluation. The point matrix for the technical evaluation shall be as follows:

Sr. No.	Criterion	Maximum Points
1	Quality of Proposal	10
2	Quality of Solution	30
3	Past performance Certificates in similar projects	10
4	Certifications (Products & Process)	5
5	Financial Strength	10
6	Local Service Presence	5
7	Quality of POC / Demonstrations	30
	Total	**100**

The total techno-commercial score of each bidder will be calculated as follows:

$$TSn = \{\left(\frac{Tn}{Th}\right) x\ 70\} + \{\left(\frac{Cl}{Cn}\right) x\ 30\}$$

where:

TSn = Total Techno-commercial score of the bidder
Tn = Technical Score of the bidder
Th = Highest Technical Score amongst all technical qualified bidders
Cl = Lowest Total Quoted Price amongst all technical qualified bidders
Cn = Total Quoted Price of the bidder

The bidder with the highest Total Techno-commercial score will be awarded the contract.

- The total quoted price will include the capital cost as well as the operational cost that includes the AMC charges, the recurring network charges and the recurring GPRS charges for the entire project duration.

4.20.2 Proposal Evaluation Process

1. The evaluation process is designed to award the procurement to the Bidder with the best combination of attributes based upon the evaluation criteria. Therefore, proposals are evaluated against the evaluation criteria in this RFP. The commercial bids of the qualifying bidders shall only be opened for the final comparison & selection of the contractor.

2. The Project Consultant shall manage the proposal evaluation process and maintain proposal evaluation records.

3. All proposals shall be reviewed by the Project Consultant to determine compliance with basic proposal requirements as specified in this RFP. If the Project Consultant determines that a proposal may be missing one or more such requirements, a Proposal Evaluation Team from NWCMC shall review the proposal to determine:
    - if it meets requirements for further evaluation;
    - if NWCMC shall request clarification(s) or correction(s); or
    - if NWCMC shall determine the proposal non-responsive and reject it.

4. The Proposal Evaluation Team shall evaluate responsive proposals. The team shall score the General Bidder Qualifications and Experience section, the Technical Approach section and the Subject Knowledge section of each proposal.

5. NWCMC reserves the right, at its sole discretion, to request clarifications of technical proposals or to conduct discussions for the purpose of clarification with any or all Bidders. The purpose of any such discussions shall be to ensure full understanding of the proposal. Discussions shall be limited to specific sections of the proposal identified by the NWCMC and, if held, shall be after initial evaluation of Technical Proposals. If clarifications are made as a result of such discussion, the Bidder shall put such clarifications in writing.

6. The Project Consultant may request:

    a) An interview and/or open forum meeting with the technical teams of the Bidders or the OEMs.
    b) A visit to the OEM facilities or reference sites as per the benchmarking schedules set with the individual bidder/s.
    c) A reference-checking meeting with the clients referred to by the Bidder.
    d) A visit to the office/facilities of the bidder.

7. For this purpose, an adequate notice of at least 7 days in advance shall be provided.

8. NWCMC reserves the right to make changes in the quantities of the material sought OR to procure the goods in deferred stages OR to cancel the purchase of any of the items specified in this Tender Document OR to divide the order to more than one vendor.

9. As a part of the technical evaluation process, the bidders shall be required to demonstrate their solution by carrying out a Proof of Concept (POC) at their own costs at a location specified by NWCMC in Nanded City. The purpose/objective of the POC shall be to determine that the solution proposed by the bidder meets the

overall functional & technical requirement of the project. A notice of 7 days shall be provided for this purpose. Please note that a successful PoC is a pre-requisite for technical qualification in the tender process. The PoC will be conducted with the exact same set of equipment / software / makes proposed by the vendor and will be based on functional capabilities of the vanilla version of the software proposed.

10. The commercial bids of only those companies that successfully meet the PQC & technical criteria (including the POC Criteria) will be evaluated.

11. The commercial evaluation will be based on the Total Delivered Cost (including Capital & Operational expenditure) to NWCMC calculated for a period of 5-years for the entire project.

12. NWCMC reserves their right to negotiate the quoted prices with the selected bidder.

13. NWCMC reserves the right to delete any of the items in the Schedule of Rates at the time of placement of Purchase Order. The decision of Commissioner, NWCMC shall be final and binding in this respect.

5 Technical Specifications

5.1 Fixed Megapixel IP Box Camera

Feature	Specification
Image Sensor	1/3” CCD/CMOS Sensor –progressive scan 1.3MP or better
Lens	5 to 50 mm CS mount
Lens	F1.2 (wide) - F2.1(tele), autofocus, automatic day/night Horizontal angle of view: 50° - 5.4°
Light Sensitivity	Color : 0.5 lx at 50 IRE, F1.2, AGC high Black & White : 0.2 lx at 50 IRE, F1.2, AGC high
Video	
Signal System	PAL
Video compression	MPEG-4 / H.264
Total Pixels	1280x1024
Image Settings	Electronic Image Stabilization EIS); Auto/ One-push WB/ ATW/ Manual White Balance; ON/OFF switchable Flickerless operation; Auto Electronic Shutter;
SNR	>50db
Storage	32 GB
General	
Approvals	UL/ CE & FCC and EN
Networking	
Connectivity	10/100 mbps Ethernet with CAT-6 cable
Protocol	IPv4, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP,IGMP,SMTP,FTP,DHCP,NTP,DDNS,DNS and PPPoE
Electrical	
Power Supply	AC 10-24 volts or DC 7 -24 volts industrial grade with 30 mins backup
Control Interface	RS485 or RS422
Connectors	DC jack Terminal block for 2 alarm inputs, 1 output
Video Output	1Vp.p.75Ω composite BNC connector
Audio	Audio In & Out
Environmental	
Temperature	0°C to 50°C (Operating); -10°C to 60°C (Storage)
Operating Humidity	20%~90%RH (non-condensing)
Mechanical	
Casing	Integrated Outdoor Weather proof vandal proof casing with IP66. Make to be same as that of the

Feature	Specification
	camera.
Outdoor Mounts	Max Load 9 kg. Adjustable Head with 360 degrees pan, 180 degrees tilt. Make to be same as that of the camera.
Approved make	Sony, Panasonic, Pelco, Bosch, Verint, Axis, DVtel

5.2 Fixed Megapixel WDR IP Box Camera

Feature	Specification
Image Sensor	1/3" CCD/CMOS Sensor –progressive scan 1.3MP or better
Lens	5 to 50 mm CS mount
Lens	F1.2 (wide) - F2.1(tele), autofocus, automatic day/night Horizontal angle of view: 50° - 5.4°
Light Sensitivity	Color : 0.5 lx at 50 IRE, F1.2, AGC high Black & White : 0.2 lx at 50 IRE, F1.2, AGC high
Video	
Signal System	PAL
Video compression	MPEG-4 / H.264
Total Pixels	1280x1024
Image Settings	Wide Dynamic Range (WDR) ,Electronic Image Stabilization EIS); Auto/ One-push WB/ ATW/ Manual White Balance; ON/OFF switchable Flickerless operation; Auto Electronic Shutter;
SNR	>50db
Storage	32 GB
General	
Approvals	UL/ CE & FCC and EN
Networking	
Connectivity	10/100 mbps Ethernet with CAT-6 cable
Protocol	IPv4, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP,FTP,DHCP,NTP,DDNS,DNS and PPPoE
Electrical	
Power Supply	AC 10-24 volts or DC 7 -24 volts industrial grade with 30 mins backup
Control Interface	RS485 or RS422
Connectors	DC jack Terminal block for 2 alarm inputs, 1 output
Video Output	1Vp.p.75Ω composite BNC connector
Audio	Audio In & Out

Feature	Specification
Environmental	
Temperature	0°C to 50°C (Operating); -10°C to 60°C (Storage)
Operating Humidity	20%~90%RH (non-condensing)
Mechanical	
Casing	Integrated Outdoor Weather proof vandal proof casing with IP66. Make to be same as that of the camera.
Outdoor Mounts	Max Load 9 kg. Adjustable Head with 360 degrees pan, 180 degrees tilt. Make to be same as that of the camera.
Approved make	Sony, Panasonic, Pelco, Bosch, Verint, Axis, DVtel

5.3 HD Megapixel PTZ Camera

Feature	Specifications
Image Sensor	1/4" CCD/CMOS Progressive scanning
Lens	F 1.6 – 4.5, f=3.4 mm; auto focus;
Light Sensitivity	Color : .0.5 lx (50IRE, F1.2, AGC High) Black & White : 0.01 lx (50IRE, F1.2, AGC High)
Shutter Time	Auto / Manual selectable (1/10000s –1.50s@PAL)
Zoom	18x optical and 12x digital
Pan Range	Rotation Angle 360° Endless; Speed 90°/sec
Tilt Range	Manual/programmable; speed : 180°/sec; angle :0-180°
P/T/Z	Auto PAN and auto Patrol mode
Day/Night	Yes
Storage	32 GB
Video	
Signal System	PAL
Resolution	Full HD 1080p
Video Compression	H.264 (MPEG-4 Part 10/AVC) Motion JPEG
Video Streaming	Multiple, individually configurable streams in H.264 and Motion JPEG Controllable frame rate and bandwidth VBR/CBR H.264
Image Settings	Wide dynamic range (WDR) , Electronic Image Stabilization EIS); Auto/ One-push WB/ ATW/ Manual White Balance; ON/OFF switchable Flicker-less operation; Auto Electronic Shutter; >6 Z Privacy Masking; 64 or more predefined Programmable preset positions.
Frame Rate	H.264: Up to 30/25 fps (60/50 Hz) in all resolutions

Feature	Specifications
	Motion JPEG: Up to 30/25 fps (60/50 Hz) in all resolutions
SNR	>50db
Approvals	UL/ CE & FCC and EN
Networking	
Connectivity	10/100 mbps Ethernet with CAT-6 cable
Protocol	IPv4, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP,IGMP,SMTP,FTP,DHCP,NTP,DDNS,DNS and PPPoE
Electrical	
Power Supply	AC 19-28 volts and DC 24-36 volts industrial grade with 30 mins backup
Connectors	DC jack Terminal block for 2 alarm inputs, 1 output
Control Interface	RS485 or RS422
Audio	Audio In & Out
Environmental	
Temperature	0°C to 50°C (Operating); -10°C to 60°C (Storage)
Operating Humidity	20%~90%RH (non-condensing)
Mechanical	
Casing	Integrated Outdoor Weather proof vandal proof casing with IP66. Make to be same as that of the camera.
Outdoor Mounts	Max Load 9 kg. Adjustable Head with 360 degrees pan, 180 degrees tilt. Make to be same as that of the camera.
Approved make	Sony, Panasonic, Pelco, Bosch, Verint, Axis, DVtel

5.4 Portable Video Surveillance System (Camera, Storage, Monitor)

Feature	Specification
Functional Requirement	2 Cameras on one Vehicle with portable NVR (four channels with storage capacity of 80GB or more – to keep record for 48 hours of continuous recording) and 14” TFT / LCD monitor. Appropriate keyboard / joystick controller should also be provided for the operator. The vehicle would be stationary while recording video (day / night). The system components should work on vehicle battery. The NVR should be able to auto-sync the recorded video with VMS at the control room via wired/wireless option. The system should have the capability to transmit real time video via re-deployable / easily deployable wireless system.

Feature	Specification
General	Camera with vandal proof casing suitable for outdoor use, Auto tracking and Privacy masking options are mandatory
Image Sensor	1/3" CCD (or better) with suitable specs which meet the requirement
Lens	Suitable specs which meet the requirement (Wide dynamic range, verifocal, auto focus zoom, auto-iris, IR correction, auto white balance, auto backlight compensation, suitable focal length)
Lens mount	C/CS
Resolution	Suitable resolution / 704P or better (NTSC / PAL)
SNR	>50db
PAN	Min PAN Speed: 0.05°/s • Max. PAN Speed: 360°/s Continuous 360° rotation
Tilt	180^0
Zoom	23X optical zoom or better with 12x or better digital zoom (EIS is essential)
Video compression	H.264/MPEG 4

5.5 PA System (Audio Amplifier + Outdoor Horn Speakers + PA Zone Selector with Microphone)

Features	Specifications
Functional Requirement	The purpose of the PA system is to establish a one-way communication channel from the Control Room to the selected zone (cameras location). The CR Operator should be able to select the zone using the PA Controller & use the microphone to address the public. The audio-out of the camera shall be used to transmit the audio signal which shall further be amplified using industrial grade >100W amplifier before it is sent to the outdoor-class horn speaker. The amplifier shall be housed in the housing to be used for the power supply & other communication equipment. The system should also have the capability to stream-out pre-recorded audio messages or music. The scope of work for the vendor shall include supply & installation of necessary cables & fixtures required for commissioning of the system.

5.6 Pole (Height ~ 3m) for mounting Camera

Features	Specifications
Type of Tower	Successful bidder to provide the detailed drawings of approx. 3m high towers and specifications of the pole along with the technical bid. Materials and works of tower construction should conform to the following specifications and the IS codes
Height of Tower	~3 m or as required
Foundation	The Foundation of the tower to be designed basically for three types of soils namely, hard/rocky, medium and soft. 1. The foundations design to be as per the actual site requirements 2. Guard against corrosion & soil erosion should be taken care of. 3. The back filling should be done by proper compaction of soil in layers & should be done before erection of tower M20 concrete shall be used. Material mixing & quality Control of concrete shall be as per IS 456 : 2000. High strength Deformed steel bars of grade Fe 415 conforming to IS:456 shall be used. Bending of bars shall be as per IS:2502 (1963) Non-galvanizing steel parts should be painted with red oxide coating.
Material of construction of tower	• MS pipes of Yst 25 conforming to IS 1161 – 1968/IS 1239 MS of grade 'A' as per IS 2062 (1999) and IS: 8500 shall be used. • All the elements are to be hot dip galvanized as per IS 4759 (1996) • Standard Zinc for galvanizing should conform to IS:13229 (1991) or IS: 209 (1992) • Nuts & Bolts of grade 4.6 as per IS 6639 (1972)/12427(2001) & IS 1363 (part 3): 1992, IS:1367 and Plain washers as per IS 6610 (1972) & spring washers Type B as per IS 3063:1994 shall be used. • Technical supply conditions including hot dip galvanization of Nuts, Bolts and Washers are to be As per IS:1367 • The design of tower members and joints shall be in accordance with the relevant provisions in BIS documents IS:800 (1984) and IS 802 (Part-I) • Welding shall be done as per IS:9595 (1996)
Ladder	A ladder shall be provided **externally** for the entire height of the tower. Hoops and runners shall be

Features	Specifications
	provided to ensure the safety of the persons climbing the tower.
Verticality	The verticality of tower shall be within the +/-25 mm limit as given in IS:12843:1989, Table iii (b) (i.e. the bottom of the line joining the centre of the top of the tower and the centre of the base of the tower should be within this limit)
Earthing	50x3 mm GI strips should be bonded to the tower legs and connected to earth pit / grid (available in the plant) at the other end (The maximum value of earth resistance shall be 0.5 ohm.)
Lightning Arrestor	To be provided on top of the 15m as well as 7m high tower with an GI earthing strip (insulated from body of tower) running down the tower, which shall be connected to separate earth pit in the plant. (If a new earth pit is required, same will be provided by NWCMC)
Aviation Warning Lamps	To be provided on top of 15m high tower.
Painting	The paints used shall be in accordance with IS-2074/62, 2932 & 2933/75. Before applying coat of primer, the surface shall be given a coat of "pickling agent" so as to avoid flaking of painting. The towers shall be given two coats of paints in addition to primer coat after erection. The towers shall be painted as per international standards and civil aviation guidelines.
Guy Wires	The guy wires should be of galvanized steel. Guy wires should be mounted on galvanized plates of a thickness of 5 mm, supporting the mast at different levels.
Notes	a. All the major components of materials for tower shall be procured from IS approved sources and certificate to this effect shall be given by the manufacturer. b. All responsibility for tower erection shall lie with the BIDDER who would follow safety norms as per IS7205 (1974). c. Adequate care shall be taken while erecting towers at the working exchanges/ offices by providing safety precautions for men and materials working thereon. The contractor shall ensure minimum inconvenience to the staff / general public while carrying out the work assigned. d. During the installation use all the protection equipment to avoid injuries. a. Mandatory use of helmet and protection equipment b. Use safety shoes, to protect feet from falling

Features	Specifications
	objects e. The specifications indicated herein are only to guide the bidder about the requirement of NWCMC. The bidder shall work out detailed design of the towers from all aspects keeping in view the effects of local metrological conditions like wind, velocity, seismicity, temperature etc., to ensure the safety of the tower. The design of the tower shall be based on recognized principles of structural design, confirming to standard practices followed in the field. Full responsibility regarding soundness of the design and execution of the work rests with the bidder.
	f. Rate for towers and poles to be quoted by the bidder supply and installation including cost of all materials and accessories of the towers, guy wires, RCC foundation, nuts, bolts, earthing strips, aviation warning lamps and lightning arrestors etc complete.

5.7 Panic Alarm Switch

Features	Specifications
Functional Requirement	Panic Alarm Button/Switch shall be installed at all the camera locations. The switch shall work on the principal of voltage change to activate the relay-in of the camera that would raise/display an alarm on the Control Room Monitors. Common public can press the button for summoning immediate assistance/help in the case of emergencies. The panic buttons should be designed for weather-proof & vandal-proof outdoor applications & should resist accidental activations. To avoid misuse & false alarms, the switches shall be installed in the field of view of the on-location camera/s. The scope of work for the vendor shall include supply & installation of necessary cables & fixtures required for commissioning of the system.

5.8 Video Management + AVL Server

Features	Specifications
Processor	Intel® Xeon® Processor E5-4650L (20M Cache, 2.60 GHz, 8.00 GT/s QPI)
Number of processors	2
Chipset	Suitable Intel chipset
Memory	16GB, Expandable up to 120GB or more
Expansion Slot	Min. 4 PCIe Full-length or more, Min 3 PCIe Half-Length
Bays	Up to 8 hot swappable SATA or 8 3.5" or 2.5" Serial Attached SCSI (SAS) or 16 SAS SSD
Display Controller	Compatible display controller with at least 64MB on-board memory
HDD	10K RPM, SAS or SATA hard disk
Internal Storage	2x 1 TB SATA 10K RPM
Display Monitor	18.5" LED
Ethernet	2x 10 Gig Ethernet Controller
OS	Windows 2012 Server (32 or 64 bit) or higher / Linux
RAID 5 support	Hardware RAID with support for RAID 0, 1, 5, 6 & 50
Systems management	Integrated Management Module (IMM), Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, QPI Fail-down
Power supply	Dual Redundant Power Supply
Anti-virus Software	Server Antivirus with minimum 5 Years free Update and upgrade (Quick Heal, eScan, Symantec)
Approved Make	HP, Dell, IBM

5.9 Server/s for Video Analytics software (For Server-based analytics option)

Features	Specifications
Processor	Intel® Xeon® Processor E5-4650L (20M Cache, 2.60 GHz, 8.00 GT/s QPI)
Number of processors	2
Chipset	Suitable Intel chipset
Memory	16GB, Expandable up to 120GB or more
Expansion Slot	Min. 4 PCIe Full-length or more, Min 3 PCIe Half-Length
Bays	Up to 8 hot swappable SATA or 8 3.5" or 2.5" Serial

Features	Specifications
	Attached SCSI (SAS) or 16 SAS SSD
Display Controller	Compatible display controller with at least 64MB on-board memory
HDD	10K RPM, SAS or SATA hard disk
Internal Storage	2x 1 TB SATA 10K RPM
Display Monitor	18.5” LED
Ethernet	2x 10 Gig Ethernet Controller
OS	Windows 2012 Server (32 or 64 bit) or higher / Linux
RAID 5 support	Hardware RAID with support for RAID 0, 1, 5, 6 & 50
Systems management	Integrated Management Module (IMM), Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, QPI Fail-down
Power supply	Dual Redundant Power Supply
Anti-virus Software	Server Antivirus with minimum 5 Years free Update and upgrade (Quick Heal, eScan, Symantec)
Approved Make	HP, Dell, IBM

5.10 Storage Server

Features	Specifications
Operating System	Microkernel based; should not be based on general purpose operating system like Windows, Unix/Linux etc.
RAID controller	Dual active, hot-swappable controllers
Cache	1 GB cache per controller with 2 GB upgrade (battery-backed)
Host interface	At least 8 x FC ports
Drive interface	Two 6 Gb SAS drive ports
Supported drives	6 Gbps SAS 3.5" drives: 300 GB 15k rpm, 450 GB 15k rpm, 600 GB 15k rpm 1 TB 7.2k rpm Nearline, 2 TB 7.2k rpm Nearline 600 GB 15k rpm SED 6 Gbps SAS 2.5" drives: 146 GB 15k rpm 300 GB 10k rpm 600 GB 10k rpm 500 GB 7.2k rpm Nearline 300 GB 10k rpm SED 1 TB 7.2k rpm
RAID levels	0, 1, 3, 5/6

Features	Specifications
Storage partitions	Support for up to 128 storage partitions (levels: 4 standard with upgrades to 8, 16, 32, 64, 128)
Maximum drives supported	Up to 192 drives—high performance SAS drives, nearline SAS drives, and SED SAS drives
Raw disk Scalability	70 TB usable capacity using SATA drives
Fans and power supplies	Dual redundant, hot-swappable
Rack support	2U, 19-inch, industry-standard rack
Management software	OEM Storage Manager
SAN support	Supported FC switches and directors, and IP switches
Approved make	HP, IBM, Dell, iOmega

5.11 Monitors 42"

Features	Specifications
LCD Panel Display Type	TFT Color Extended Graphics Array
LCD Panel Viewable Area	42”
Resolution	1920 x 1080 Full HD
Internal Speakers	2
Front Controls	Power On/Off with LED
Scan System	Automatic NTSC/PAL; 31.5 ~ 80 KHz (Horizontal) ; 56 ~ 75 Hz (Vertical)
Video Connectors	BNC (Composite Video) – 2 channels (looping); 4-Pin Mini DIN (Y/C Video) DVI-I, 15-pin D-Sub for VGA/SXGA Audio Inputs PC Audio (mini jack) Video Audio (2 channels RCA - looping)
Power Input	AC Input – 100 to 240V ~ 0.5A, 50/60Hz
Power Output	DC Output – 12VDC, 0.5A
Power Cord	Detachable IEC
Display Mode	DVI-I/SXGA/XGA/VGA
Display Colors	16.7 Million
Luminance	400 cd/m²
Contrast Ratio	DC 20,000:1 (1,000:1) (Typ.)
Viewing Angle	140º horizontal, 160º vertical
Operating Temperature	41° to 104° F (5° to 40° C)
Storage Temperature	-77º to 140º F (-25º to 60º C)
Operating Humidity	30% to 80% relative, non-condensing
Emissions	FCC: Part 15, Class B
Immunity	CE: EN55022: 1998/A1:2000/A2:2003
Safety	UL/cUL: 6500, EN60950-1:2001
Approved Make	Panasonic, Samsung, LG, Sony

5.12 Network Switch - 24 port Giga as a Layer-3 Core Switch

Features	Specifications
Switch	Layer-3 Managed with 24 Port 10/100/1000 Mbps, auto negotiating, FE Switch, with 2/4 10 Gig fiber ports.
Switching Capacity	> 100 GBPS, >80 MPPS packet forwarding rate with 64 byte packets
Power Supply	Dual redundant power supply
Approved Make	Cisco, D-Link, HP-Procurve
Operating Temperature	0˚ C to 55˚ C

5.13 Network Switch - 24 port switch Layer 2

Features	Specifications
Switch	Layer-2 Managed with 24 Port 10/100/1000 Mbps FE Switch with 2 1000 Base-Fx ports (IPv6 Compliant)
Switching Capacity	>50 Gbps
64-Byte Packet Forwarding Rate	>50 Mpps
Operating Temperature	0˚ C to 55˚ C
Power Supply	Dual Redundant Power Supply
Approved Make	Cisco, D-Link, HP-Procurve

5.14 Cable/Fiber Components

Features	Specifications
OFC Cable	Armoured, loose tube, Gel-filled, rodent resistant, direct burial type. Consisting of 6-core fibers of nominal diameter 8.8 micro meter to 9.8 micro meter and nominal cladding diameter 125 micro meter ± 1; Attenuation: 1310 nm 0.4 db/km & at 1550 nm - 0.30 db/km; Cut-off Wavelength -1260 nm; Op. Temp.- -10 DegC – 70 DegC; Corrugated steel tape armor; Tensile Rating: 1200N; Max. Crush Res.: 3000N; ISO/IEC11801,TIA 568,ICEA640 compliant

Features	Specifications
LIU	LIU should be provided for terminating the optic fiber cables. It shall provide minimum bending radius and the splice trays shall function as a splice cover for pigtail splicing. It shall be made of aluminum with powder coating in compliance with latest industry standard. Cable glands shall be provided for secured anchoring of incoming cables. Rubber grommets shall be provided at the cable entry point for tight sealing. The splice tray shall be made of ABS materials. 12/6 Port
Pigtails	SC Type; 1 M; Insertion Loss < 0.5 db; Return Loss>40db; Bend Radius>30mm
Optic Fiber Connectors	Optic fiber connectors should be single mode SC/ST type with push-pull mechanism and fully in compliance with latest industry standard. Optic fiber connectors should be of standard make.
Optic Fiber Adaptors	Optic fiber adaptors should be suitable for single mode SC/ST type fiber cable connectors and shall be fully in compliance with latest industry standard. It shall be with snap/latch mechanism. Optic fiber adapters should be of standard make.
Optic Fiber Patch Cords	Optic fiber patch cords should be suitable for single mode SC/ST type fiber cable connectors with plastic moulded plug type connectors in compliance with latest industry standard. Optic fiber patch cords should be of standard make. Min. Return Loss>50 db
Media Convertor	Should convert Ethernet port to fiber port and vice-versa; should support half and full-duplex operation; transparent to IEEE 802.1Q packets; rack-mountable; should have auto MDI/MDI-X & feature which should enable the fiber optic ports on the media converter to pass the 'Link' status of their connections to each other. When the media converter detects a problem with one of the ports, such as the loss of connection to an end-node, the media converter should shut down the connection to the other port, thus notifying the node that the connection has been lost.
OF Testing	The manufacturer of the cabling system shall provide optical fibre testing procedures that clearly describe the tools and settings to be used to ensure correct measurements of the system. All the OF links have to be tested and must pass the acceptance criteria.

Features	Specifications
	Acceptability criteria shall be: The measured attenuation shall be lower than the acceptable link attenuation calculated (Formula: Allowable cable loss per km x Km of fiber in link + 0.4dB x No. of connectors = Maximum allowable loss)
	Testing shall consist of a bi-directional end to end by using either OTDR or Fiber Cable Tester. The system loss measurements shall be provided at 1310 and 1550 nanometers for single mode fibers.
CAT6 Cable	Armored CAT 6 Cable; 4 pair UTP Cable 23 AWG Solid Bare Copper polyethylene insulation & armored. Applicable standard TIA/EIA 568.B; Insulation Resistance 100MOhm Capacitance <5.6 nf/100m
CAT 6 I/O	The RJ45 connector shall be screened to ensure protection against EMI and for Alien cross-talk compliance. It offers the 500 MHz performance required to be used to form a 100 meters **Class EA channel** as specified in **ISO/IEC 11801:2002/A1:2008** and EIA/TIA 568 B2-10. All outlets fitted with shutters.
Copper Testing	The manufacturer of the cabling system shall provide copper testing procedures that clearly describe the tools and settings to be used to ensure correct measurements of the system. The following parameters have to be tested:
	· Length
	· Attenuation
	· Pair-to-Pair Near-End Cross Talk (NEXT)
	· Power Sum NEXT
	· Far-End Cross Talk (FEXT)
	· Pair-to-Pair Equal Level Far End Cross Talk (ELFEXT)
	· Power Sum ELFEXT
	· Attenuation to Cross Talk Ratio (ACR)
	· Power Sum ACR
	· Propagation delay and Delay Skew
	· Return Loss.
	· All links must be characterized up to 100 MHz
Rack 6U	19” Network Rack with Cable Managers & 1 Fan
Power Cable	3-Core, 2.5 sq mm, multi strand with annealed electrolytic copper conductor with resistance > 8.2 Ohm/Km; PVC insulated (0.3 mm inner+1.8 mm outer sheath) armoured with galvanized steel wire with 90% coverage; IS 694:1990 reaffirmed 1995 or latest compliant

Features	Specifications
PTZ (Data) Control Cable	2 pair twisted Cable 23 AWG Solid Bare Copper polyethylene/PP insulation.
Approved Make	Polycab, Finolex, Dlink, Digilink, Molex, Systimax, TycoAmp, R&M, ADC KRONE, RR, RPG, L&T, Anchor, Havells

5.15 Server/Network Rack Floor-Mount (42U)

Features	Specifications
Rack size	42U
	Adjustable 19” rail in the front and rear for fixing the server and networking equipment
	Top and bottom cable entry facility
	Front section with glass door and lock and back cover
	Cable mangers of 1U
	Floor mount with caster wheels
	Inbuilt power distribution unit with at least 8 Nos of 220 VAC, 5A outlets.
	Minimum 4 nos of cooling fans for proper cooling should be provided.
	Mounting hardware should be provided for fixing switches, patch panels and network components.

5.16 Online UPS (in the Control Room) with 1 hr backup

Features	Specifications
Output Parameters	
Output Power Capacity	3 KVA online
Nominal Output Voltage	240V
Output Voltage Distortion	Less than 5% at full load
Output Frequency (sync with bypass)	47 - 53 Hz for 50 Hz nominal,57 - 63 Hz for 60 Hz nominal
Crest Factor	up to 3 : 1
Input Parameters	
Nominal Input Voltage	230V
Input Frequency	50/60 Hz +/- 3 Hz (auto sensing)
Battery Parameters	

Features	Specifications
Battery Type	Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof
Typical recharge time	3 hour(s)
Mechanical Parameters	
Interface Port(s)	DB-9 RS-232, USB
Control panel	LED status display with load and battery bar-graphs and On Line : On Battery : Replace Battery : and Overload Indicators
Audible Alarm	Alarm when on battery : distinctive low battery alarm : configurable delays
Emergency Power Off (EPO)	Yes
Surge energy rating	480 Joules
Filtering	Full time multi-pole noise filtering : 0.3% IEEE surge let-through : zero clamping response time : meets UL 1449
Operating Temperature	0 - 40 °C
Operating Humidity	0 - 95%
Heat Dissipation	<300 BTU/hr
Back-up	1 hr with SMF batteries at half-load
EMI	C-tick,CE,EN 50091-1,EN 50091-2,GOST,VDE
Environmental Compliance	RoHS compliant
Approved Make	APC, Emerson, Numeric

5.17 PTZ keyboard/joystick

Features	Specifications
	Fully functional dynamic keyboard controllers with joystick
	Controls all pan / tilt and zoom functions
	Control up to 255 units from a single keyboard
	Many preset options and advanced tour programming
	Compatible with DN-PTZ camera
Key Application	Wired keyboard control operation of PTZ functions for weatherproof dome cameras.
Pan / Tilt / Zoom Protocol Languages Supported	Selectable
PTZ Data Transfer Baud Rates Supported	Selectable 1200 bps / 2400 bps / 4800 bps / 9600 bps
Additional Features	Dynamic joystick for smooth camera movements, preset location option for quick access to frequently monitored areas

5.18 VMS, Command & Control & Disaster Management Software

Features	Specifications
Functional Requirement	VMS based on the open architecture which facilitates integration with other IT systems with the help of APIs (distributed free of charge)
Platform	Windows / Unix / Linux
Functions	Event handling, motion detection,
Compatibility	The VMS should be built on the open standards and shall be compatible with products from industry leading manufacturers
Recording	· Should record audio / video
	· Continuous recording, by trigger (motion or alarm), by schedule
Storage	· Distributed, fault tolerant database architecture
	· Multi-level storage: should support multi level storage (live recording on primary disk, archiving on secondary, and so on) should delete video after configurable duration
Video Search	· Should be able to search video based on date / time, camera. Should have advanced / smart / quick search function
	· Should be able to export searched video to standard video codec (or with video player in case of proprietary format)
Viewing	· Simultaneous viewing and recording from various cameras by multiple users
	· Multi Monitor viewing
	· Camera sequence mode
	· Control PTZ function of PTZ camera
	· The VMS should have viewing client (not applicable incase of web based VMS) to enable the feed display on the workstation / remote location
	· Drag and drop camera viewing
Event Management	· Register event, associated video, and alert operator on screen with audio
	· Motion detection, sound detection, camera tampering events should be alerted to the operator
Camera Management	· Show connection status of cameras, alert operator in case of connection failure to any camera
	· Manage firmware upgrades, setting IP addresses
Security	User management, password management, user access level management
General Features & Specifications	Multi-map Presentation Options and User-Friendly PTZ Controls

Features	Specifications
	Graphic Video Footprints with Real-Time PTZ Controls
	Sensor Management Tools, Alarm Management Options, and data Editing
	Enhanced Displays for Video Forensics and Access to Video Archive Systems
	supports jpeg or bmp or gif data input.
	Capable of Managing an assigned area of interest
	Capable of Ingesting video and sensor inputs into an open architecture format, onto one screen
	Provides a monitoring capability of the video/ sensor subsystem, to be relayed to the key operations center
	Multi-site video surveillance, and command and control
	Provides a multiple-perspective geographic display of site locations with site-specific surveillance information including Sensor locations and alarm conditions.
	Provides a remote ability to set and/or modify operational characteristics of surveillance devices and storage
	Online control of Pan/Tilt/Zoom (PTZ) cameras, sensors,
	Ability to Record and Retrieve stored video.
	Integrated-alarm visualization rule and device control displays in either a single or double monitor format
	Ability to slue PTZ cameras to alarm-generated areas.
	Automatic tracking and classification of objects such as cars and people and push content to security personnel over local LAN as required.
	Capability of Real-time analysis of connected cameras to detect abnormal activity and Security threats.
	Capability to filter large amounts of video and support display of time Line, Customizable Site Map, Live Video, Video Playback, Integrated Site Map , Remote live view, Multi-site capability, Event based Recording all over local LAN
	Capability of video analytics based on defined policies pre feeded at the time of installations with features like Motion & Blackout masking, Perspective settings , environment selection, map configurations, disk usage limits, footage expirations, software health monitoring
	Definable and available triggers should be for : Vehicles Moving , Vehicles Parking, Vehicles Starting to Move, People Moving, Anything Moving, Camera Obstructed, Cord Cut, Hardware alarm Input,

Features	Specifications
	Unknown Starting, unknown Moving, Unknown Parking, Item left Behind, Item Removed, People Loitering.
	Motion Tracking, Object Classification, Mosaic (Camera image stitching), Object Persistence, Alarm Policy Settings, Alarm on object type, Alarm on object direction, Alarm on camera manipulation, Automatic Alarm Response, Automatic PTZ control, Audible Siren, Alarm I/O (relay), NAS or SAN support, Event based search
	Left-Object/Removed-Object Detection component that automatically detects objects in the field of view of a camera that have been left-behind, or that have been removed
	Perimeter Breach Detection component that automatically detects objects in the field of view of a camera that move from and to configurable regions
	Motion Detection component that automatically detects moving objects in the field of view of a camera, and is capable of filtering out movement in configurable directions and movement due to camera motion (e.g. from wind)
	A People Loitering Detection component that automatically detects objects that have moved continuously within the camera field of view for a configurable period of time.
	Ability to deploy the Alarm Components on PC computer servers or on remote, ruggedized, externally-mountable, stand-alone platforms
	Vehicles Moving – should activate alarm if it detects Vehicles moving in the scene and passing through the Alarm Mask. Object Direction may be used to further filter alarms, as well as Object Speed, Object Size.
	Vehicles Parking – should activate alarm if vehicles are parking in Alarm Mask. The Length of Time field in seconds or minutes may be used to specify how long vehicles are able to park before the alarm.
	Vehicles Starting to Move should activate alarm if it detects a vehicle starting to move from a stopped position. if a parked car begins to move, an alarm will sound. Object Direction, Object Speed and Object Size may be used to further filter alarms.
	People Moving - Similar to the Vehicles Moving trigger, but should apply to People.

Features	Specifications
	Anything Moving - Similar to the Vehicles Moving trigger, but should apply to any objects which are moving (People, Vehicles, Unknown).
	Camera Obstructed - should activate alarm if the field of view is obstructed.
	Cord Cut - Will alarm if the video signal is lost
	Hardware alarm Input - Should be able receive signals from external devices through alarm I/O and act accordingly
	Software should be an Open IP-Surveillance product, enabling simultaneous digital video recording from network, mega-pixel and analog devices, intelligent video analysis and remote access to live and recorded images from any networked computer.
	Software should allows to add, edit, delete or disable and enable Policies for video management
	Option of remote viewing and control over Blackberry®, ip phone or any android handheld to keep updated while in the field
	Software should be jointly and simultaneously able to manage video analytics and video management as one product
	Software should be able to store video to local hard disk, a RAID configuration or even a storage-area network (SAN).
	Software should support display of time Line, Customizable Site Map, Live Video, Video Playback, Integrated Site Map , Remote live view, Multi-site capability, Encryption, Event based Recording
	Option of On-screen digital Video tracking & digital zoom on tracked area
	Option of On-screen object follow thru within tracked area
	Management of Recorded video with On-screen time graph and multiple color coded event indicators for selective and simultaneous view of alarm and non alarm situations for quick viewing
	User friendly and time graph based selection for playback and instant archival of video events on external media
	On selection of specific area on video with specific date and time period , instant retrievals of all past events/ activities at this selected area should be retrieved and viewed instantly as a single video / movie clip

Features	Specifications
	Software should be intelligent and capable of automatically discriminating between objects like people, animals, vehicles
	Intelligent Object tracking in adverse weather condition and poor visibility
	Should be able to filter large amounts of video and focus human intelligence
	Multi-map Presentation Options and User-Friendly PTZ Controls
	Graphic Video Footprints with Real-Time PTZ Controls
	Sensor Display and Management Tools, Alarm Management Options
	Enhanced Displays for Video Forensics and Access to Video Archive Systems
	Supports jpeg or bmp data input
	Capable of Managing an assigned area of interest
	Capable of geo-referencing and supporting cross-cueing of sensors
	Provides a monitoring capability of the video/ sensor subsystem, to be relayed to the key operations center
	Multi-site video surveillance, and command and control.
	Provides site-specific surveillance information including sensor locations, coverage and alarm conditions
	Insertion and Deletion of Cameras & Sensors
	Provides a remote ability to set and/or modify operational characteristics of surveillance devices and storage.
	Online control of Pan/Tilt/Zoom (PTZ) cameras
	Capable of selecting and displaying simultaneous, multiple camera views for a single geographical location.
	Ability to Record and Retrieve stored video.
	Software should simultaneously perform and view following: record live video, playback recorded video, provide alert messages, viewing of live video form selected camera, Connected and live video analytics servers in the network, Time selection with motion and alert graph for recorded video data with different color indication for motion and alert indication along with video.
	Software shall offer a Maps application for importing maps, creating maps, linking maps, editing maps which enables a user to integrate interactive maps in the

Features	Specifications
	system. A map is a visual representation of where cameras are located at a site. When you view them in you can see where cameras are placed, and then you can click a camera to view live video and view following information.
	Software shall provide a Forensics software application that detects past and real-time security events using stored forensics data collected from surveillance video feeds.
	Software Forensics Analyzer shall allow the user to quickly search for and detect security events that occurred in the past. Examples include :
	a. Scan days and weeks of pre-recorded video within minutes
	b. Locate and extract information about potential security breaches
	c. Allow users to run regular queries to detect patterns.
	d. Allow users to apply any rule to any amount of collected or stored video data.
	Software shall provide the ability to set up security rules for surveillance cameras.
	Software shall detect, identify, classify, and track objects in real time. The software should then immediately generate alerts or alarms if user-defined security rules are violated
	Software shall support object-based algorithms and must be able to provide the following functionality :
	a. Learn the scene, Detect and track objects, Adapt to a changing outdoor environment, Ignore environmental changes including rain, hail, wind, swaying trees, and gradual light changes.
	b. Classify objects, Detect “enters”, “exits”, “appears”, “disappears”, “inside of”, “loitering”, “leave behind”, “taken away” events.
	c. Detect scene change events.
	d. Create object size and size change filters.
	e. Create salience/tide filters.
	Software shall classify objects groups as the following :
	Person, Vehicle, Unknown, Anything.
	Software shall be able to combine object tracking with object classification to allow the detection of specific objects in a region of interest, while ignoring other object types. The user shall be able to configure the following scene change event parameters for each

Features	Specifications
	camera:
	a. Scene change
	b. Partial view
	c. Full view
	Software shall have a sophisticated rule-based engine with powerful analytics capabilities that provides automatic event notification,
	Video distribution and process activation in response to events and behaviors.
	Software shall be able to create rules and responses based on digital or contact closure input events from external devices, such as Critical infrastructure-related events, Network connection failures, Fatal errors, Hard disk failures, Software service down, Video encoder failures, Security-related events, Digital input pin change, Video lost, Onscreen alarms. Maintenance-related events, User event notification using SMTP (Mail)
	Software shall be to perform the following tasks simultaneously:
	a. Digitizing and compressing video.
	b. Writing video to files on local hard disks and maintaining an accurate index of the stored video files.
	c. Deleting older video files as needed, to free up space to record newer video files.
	d. Selectively transferring recorded video to long-term storage media.
	Software shall be capable of managing online storage that is, online video shall be available for immediate playback. Storage shall be intelligently managed so that the video that is most likely to be requested by users will be retained online.
	Generating and managing system logs and audit reports, Defining the reporting level for system events generated by various services, Filtering log files and events
	A letter from the software developer confirming compatibility of VMS and VAS to Trend Micro anti virus software to be provided
Approved Makes	Nice, Milestone, Verint, Axxonsoft, Genetec

Features of the Incident & Disaster Management Software (IDMS)

Disaster Management System	
Features	**Specifications**
Disaster Management System	I. Organization Registry – Creates database of organizations to help facilitate coordination; allows organizations to record their Offices, Warehouse and Field Sites including their locations so they can be mapped as well as links to other modules such as Human Resources, Assets and Inventory.
	II. Project Tracking - By telling you *Who's Doing What, Where, and When,* the system shall provide a valuable tool to help organizations responding to disasters know where the greatest needs are and coordinate with others who are engaged in similar work.
	III. Human Resources – Manages the people involved. It tracks where they are, what skills they have and help ensure that everyone is effectively engaged with the work that needs to be done; includes both staff and volunteer management capabilities.
	IV. Inventory – Record and automates transactions for sending and receiving shipments; supports multiple Catalogs of Items as well as providing alternative items to ensure more effective use of supplies. Allows organizations to manage requests, donations and warehouses.
	V. Assets – Manages assets such as vehicles, communications equipment and generators; tracks where they are, who they have been assigned to, and what condition they are in. This ensures that assets are used effectively and efficiently.
	VI. Assessments – Collects and analyzes information from assessments to help organizations more effectively plan their disaster management activities. Data can either be entered into an interactive web form or imported via an Excel template.
	VII. Shelter Management – Manages information about the location and status of temporary shelters, including resources required, staff and volunteers assigned to the shelter, and provides a check-in/check-out system for

Disaster Management System	
Features	**Specifications**
	shelterees and their families allowing persons to be tracked and shelter populations to be monitored.
	VIII. Scenarios & Events – Plan for different scenarios, including recording what human resources, assets, facilities and tasks will be needed to effectively respond.
	IX. Mapping – shall have fully integrated mapping functionality which allows any location-based data to be visualized on a map. Maps provide situational awareness which is essential when either planning to prepare for or respond to a disaster.
	Messaging – Provides support for messages to be sent by Email, SMS, Twitter and Google Talk. Distribution Groups can be set up to allow messages to be easily sent to many people at once. Interactive messages allow people to send short message queries to the system and receive automatic responses.
Incident Management System	The IMS (Incident management system) shall be a full 2 Dimensional geo-spatial GIS based system for managing and controlling routing operations and incidents within the city of Nanded where Security systems are getting deployed in phases. The IMS system shall maintain operational continuity and facility management, whilst addressing several key critical issues regarding security, safety and facility management, such as: • Fusion of information from different sensors, systems, data sources like CCTV, Fire Alarm Systems. • Interface to various sensors and systems as a future upgrade. • Real time management during both routine operation and emergency situations. • Ability to analyze potential threat scenarios and incidents. • Advanced camera management. • Pro-active decision support tool. • Comprehensive site planning capability, in terms of security and safety. • Utilizing advanced simulations and predictions.

Disaster Management System	
Features	**Specifications**
	• Use of advanced virtual scenario generator to train management and staff.
	The IMS shall provide both 2D and 3D interactive geo-spatial GIS display of Nanded that provides situational awareness and real-time location of all sensors, personnel and alarms.
	The IMS shall be an open architecture system allowing simple integration to external modules, sensors and systems and to allow for future scalability.
	The IMS shall seamlessly integrate with existing cameras, DVR's, access control and all other allocated devices and systems, in order to provide an on-line display of 2D / 3D geospatial situational awareness, live video streams and operational/decision support data, all in one unified IMS system located in the main Control Room, as well as in remote IMS system stations.
	The IMS shall facilitate viewing of live and recorded images and controlling of all cameras based on authorization and user privileges.
	The IMS shall facilitate popup of video on video wall of Control Room and operator workstation upon alarm and rule based event handling.
	The IMS shall have the ability to automatically designate and display camera(s) based on any point selected on the 3D GIS Map.
	The IMS shall present the position of the Security personnel who are equipped with GPS/RFID locators, on a 3D GIS interactive map.
	The IMS shall manage all security, safety and any other incident that may occur combining the following: • 2D and 3D maps providing a visualization of the site – both indoor and outdoor • Ability to create and evaluate various simulation scenarios utilizing comprehensive methodologies including:blast effects, flood effects, gas propagation and crowd behaviour. • Support real-time analysis techniques
	The IMS shall be vendor agnostic and have the ability to interface with any type of security, safety or other systems including: • CCTV Surveillance Systems • Access Control Systems

Disaster Management System	
Features	**Specifications**
	• Perimeter and Intruder Detection Systems • Fire, Smoke, Water, Chemical and Gunshot Detection Systems • Mobile Devices • Building Automation Systems including: Elevators, Lights and HVAC Systems
	The IMS shall provide support for four distinct displays as follows: • Multi-site General Status Display • Operational / Electronic log Display • 2D/3D geospatial situational awareness Display • Devices (CCTV cameras, analytics and other visual devices) Display
	The IMS shall support five modes of operation as follows: • Planning Mode • Training Mode • Real-Time Mode • Debriefing Mode • Maintenance Mode
	The IMS shall encompass the following components: • IMS Server • IMS Devices Server • IMS Database Server • Mouse, Keyboard and Control Stick
	System Requirements
	Control rooms
	The Control Rooms should include the following functional elements: • Video Surveillance that provides the ability to control and monitor the video streams and events generated. • 2 dimensional/ 3 Dimensional geo-spatial GIS System that provides situational awareness of all the sensors in the complex, the geographical location of the alarms and the location of security personnel in the complex. • Advanced Event Management that provides the operator/s with a decision support tool to manage all events. • Enterprise Level situational awareness by gaining a high level of status on the remote sites.
	The IMS shall support Multi operated workstations per

Disaster Management System	
Features	**Specifications**
	Command &Control Center.
	The IMS shall support different profiles per workstations and users.
	The IMS shall support a multi-site monitor and control configuration.
	All IMS workstations shall provide the ability to monitor and control all site's CCTV cameras, devices and legacy systems, retrieve recorded video and images from the NVR/DVR seamlessly, using a unified database.
	The IMS shall integrate with access control system, receive alarms from the access control system and pop up video from the appropriate cameras related to the access control alarm.
	The IMS shall integrate with perimeter intrusion system, receive alarms from the perimeter intrusion system and pop up video from the appropriate cameras related to the perimeter intrusion alarm.
	Each control room may have one or More Operators simultaneously using CCTV cameras. Operator control on cameras shall be dependent on the policies decided by The IMS Administrator. The IMS shall provide different privileges and priorities configurations for monitoring and controlling certain cameras, devices or systems. The administrator should be able to configure the system, accordingly.
	The IMS system shall allow overtaking control of local or remote site system, from the central command and control station.
	The IMS system shall fuse all the information gathered from the wide deployment of sensors and devices thus enabling the operator to be aware at all times of the events and incidents occurring under his/her responsibility.
	IMS System compatibly
	The IMS shall be vendor agnostic and have the ability to connect to any type of security, safety, facility management or other systems including: • CCTV Surveillance Systems • DVR / NVR • Video analytics • Mobile Devices such as GPS, RFID, PDA

Disaster Management System	
Features	**Specifications**
	• BAS (Building Automation Systems) including: Elevators, Lights and HVAC Systems. • Legacy systems. • Future implemented devices/ systems.
	2D / 3D interactive GIS data support
	The IMS shall be able to support both 2D and 3D GIS data display. The IMS can originally start as a 2D system with a seamless upgrade path to 3D GIS data display. Such upgrade would not require any SW development other than adding the respective 3D models of the various locations.
	The IMS shall be seamlessly integrated with GIS information.
	The IMS shall support a "Drill down" display from global information view down to the sensor level view.
	The IMS shall support on-demand GIS layered information (ESRI standard compatible) display.
	The IMS shall support vector data.
	The IMS shall support a display of multiple GIS information.
	The IMS shall support uploading new GIS layers to and from the system.
	The IMS shall allow the user to show or hide selected layers on the 3D display.
	The IMS shall provide an orientation option by pointing a 3D location, and receiving all location GIS attributes (attributes should take in consideration all GIS layers currently uploaded in the system).
	The IMS shall provide the ability to define a 3D geographical ZOI (Zone Of Interest) and receive all ZOI GIS attributes (attributes should take in consideration all GIS layers currently uploaded in the system).
	The IMS shall allow the user to "jump" to any required location (address, facility, favorite locations etc).
	Layered Map — Ability to use several layers to view special situations. The ISM shall facilitate addition of maps.
	Smart CCTV management
	The IMS shall provide full integration with all CCTV cameras models and brands (vendor agnostic).
	The IMS shall provide full integration with all DVR /NVR systems models and brands (vendor agnostic).

Disaster Management System	
Features	**Specifications**
	The IMS shall provide full integration with all video analytics models and brands (vendor agnostic).
	The IMS shall display each physical camera (and other physical devices) at the exact geographical location on the 3D GIS display.
	The IMS shall calculate the cameras Line Of Sight (LOS) coverage pointing out any gaps and overlaps.
	The IMS shall provide the ability to view live and recorded video based on authorization and privileges for pre-defined users as defined by the system administrator in the system.
	The IMS shall provide manual camera selection.
	The IMS shall support Rule based automatic camera(s) selection and PTZ designation upon alert.
	The IMS shall allow a user to select an area on the 3D image and the system will automatically designate all relevant fixed and PTZ camera(s) covering that exact GIS point on the map based on geographical calculations and references.
	The IMS shall have manual PTZ camera control based on user priorities.
	The IMS shall enable the operator to run video playback instantaneously while viewing real time video of the same channel on a split screen.
	The IMS shall have the ability to freeze a video frame (snapshot) from any online live camera and export to a standard graphic file format.
	The IMS shall have the ability to record video from any online camera and export to a standard video file format. The IMS shall display current sensors status (where supported by the sensors), and shall alert on any faulty sensors.
	Remote devices operations - PDA
	The IMS shall provide support for remote devices, including PDAs, smart phones, laptops and support the following features: • Receive exported Camera(s) snapshot from the IMS. • Receive exported short video-clips from the IMS. • Receive exported 3D snapshot from the IMS. • Receive text messages from the IMS. • Receive Action items from the IMS.
	Rules engine

Disaster Management System	
Features	**Specifications**
	The rules-engine shall provide the operator with the ability to define rules for initiating automatic, semi-automatic (manually approved by the user), and manual predefined responses, to various routine and emergency situations.
	The IMS Rules engine shall be 3D geographically based.
	The IMS Rules engine shall allow setup of any Boolean configuration of any sensor and input to the system to create appropriate system response to alert and routine situations.
	The IMS Rules engine shall support ascription of single/multiple alerts, occurrences and incidents.
	The IMS Rules engine shall provide incidents escalation mechanism.
	Simulations and predictions
	The IMS shall support simulations and predictions based on smart algorithms display.
	The IMS use of 3D simulations would enhance the training and planning procedures, by allowing an accurate evaluation of implications and consequences of future events on the 3D fully GIS model of the site. The IMS shall support the design and runtime stage of all simulations as a user friendly scenario generator tool.
	The IMS scenario generator shall be capable of interfacing with common simulation software's and vendors.
	The IMS shall support the use of 3D simulative predictions, based on smart algorithms in the planning, training and real time modes.
	The environment parameters which support the predictions accuracy would be fed in real-time to the IMS either manually or automatically (where environment sensors are available for integration).
	The IMS shall have the ability to effectively predict, simulate and display human behavior in order to evaluate site evacuation, point to bottle-neck locations and estimate evacuation times.
	Operational Modes
	Planning mode
	The IMS shall provide a Planning operating mode that

Disaster Management System	
Features	**Specifications**
	provides the following features: • The IMS shall have the ability to create and maintain emergency plans for all types of alarms, threats and locations. • The IMS shall have the ability to plan for the deployment of devices, including cameras and sensors, to ensure total and optimal coverage of the site. This shall allow the user to plan device placement before the facility has been constructed or renovated. • The IMS shall have the ability to create comprehensive simulations including: blast effects, gas propagation and crowd behavior. • The IMS shall have the ability to analyze and evaluate security gaps and the quality of security. • The IMS shall have the ability to effectively evaluate and optimize routes for building evacuation by determining bottle-neck locations and evacuation times. • The IMS shall have the ability to create and maintain staff rosters, personnel call trees and action checklists.
	Training mode
	The IMS shall provide a Training operating mode that provides the following features: • The IMS shall have the ability to create advanced training scenarios for various types of groups. • The IMS shall have the ability to conduct mission rehearsals during training drills
	Real-time mode
	The IMS shall provide a Real-Time Operating mode that provides the following features:
	Event management
	• The IMS shall have the ability to manage an unlimited number of alarms. • Events received by the system will cause the following: 1. An automatic designation of best/all camera(s) coverage for that event geographical location, on the video display. 2. The sensors that detected the alarm will be shown and highlighted on the 3-D GIS virtual display.

Disaster Management System	
Features	**Specifications**
	• The user should be able to receive alarms and manage multiple alarms at the same time. • The IMS will enable prioritizing events handling according to: severity, geographic location or event classification. The priority can be changed manually. • The IMS should provide the ability to group several events to one incident. • The IMS shall provide the ability to ascribe and group several alerts to one incident. • The IMS should be able to handle more than one event/incident concurrently with easy switch between the events / incidents. • The IMS will provide the operator all the relevant information in regard to: event location in the 3-D GIS environment in order to help in reaching the best decision for the event management. • The IMS shall provide security and safety management personnel the ability to deploy security and safety teams and resources to the threat location and track them at all times utilizing GPS or RFID. • Once operator accepts the event, the appropriate checklist with the rule based action items to execute, would automatically pop up.
	Routine management
	• Scheduling application (i.e. MS Outlook) – The user would be able to schedule tasks, activities and meetings giving each entity a 3D GIS location, time and attribute. • Site status – The IMS shall support all infrastructure and business related status in user define graphical display (e.g. gages, graphs, other).
	Tracking/Retracing
	• The IMS shall provide 3D object tracking - The ability to locate a moving object (human or vehicle), track its movement in a crowded environment and Display the suspect's movement and trail on the 3D GIS map at Real- Time. • The IMS shall have the ability to locate and track suspects using recorded video from the CCTV DVR/NVR and display the suspect's movement and trail on the 3D GIS map. • The IMS shall provide the ability to track suspects

Disaster Management System	
Features	**Specifications**
	using DVR/NVR from a certain point forward or backward in various speeds. • The IMS will support real time or recorded tracking by selecting and setting the cameras on screen based on the advancing path of the tracked object. • The IMS shall support a display of the suspect's presumed advancing ways and direction in case of a lost suspect event.

5.19 Video Analytics Software

Features	**Specifications**
Specifications to be viewed with VMS specifications 5.18	

5.20 Control Room Infrastructural Set-up

Specifications
The complete aesthetically designed control room set-up (~400 sft) including necessary electrical & data/video cabling as per the relevant ISO standards with anti-static false flooring, 2 No. Operator Workstations, wall gypsum+plastic-painting, appropriate wall paneling for monitor area to hide the cables/wires, wooden partition/room divider for Data Racks area, 2 No. Biometric access Reader+Controller, 2 No. 600/1200lbs EM lock, 2 No. fixed indoor cameras, 2 No. 2T Split Air-conditioners etc.

5.21 Workstations

Features	**Specifications**
Processor	Intel Core I-5 Processor, latest generation
Chipset	Suitable Intel chipset
Memory	8GB, DDR-3 or better
Expansion Slot	Standard Configuration
I/O Port	Standard IO Ports with 4 USB 3.0 connectors
Bays	Standard Configuration
VGA Card	NVIDIA with min. 2 GB onboard video memory
HDD	SATA @ 7500 RPM – 8MB Cache. 500 GB or better

Features	Specifications
Optical Drive	16x Super Drives with double-layer support (DVD+R DL/DVD±RW/CD-RW)
Ethernet	10/100/1000, Auto Negotiating Ethernet controller
OS	Windows 7 Professional (32 or 64 bit) / Linux
Monitor	18.5” LED, HD
Approved Make	HP, IBM, Dell

5.22 Connectivity charges for all the cameras (per year)

(Note: All the active & passive networking elements required for the proposed solution for establishing the required connectivity shall be the responsibility of the vendor).

Features	Specifications
Functional Requirement	The connectivity solution shall provide adequate bandwidth for transmission of compressed video signal from the cameras to the control room. The bandwidth requirement is to be independently determined by the vendor based on the viewing & recording parameters mentioned in the tender document for prevalent day/night lighting conditions. NWCMC shall make deferred payments for a period of 5 years for the proposed connectivity solution, irrespective of the model proposed.
Technical Requirement	The bidder can propose a wired, wireless, hybrid solution, either leased or owned. In case the bidder proposes a wired solution, the cabling/wiring shall be based on the relevant ISO/IEC norms for structured cabling. The field active & passive elements should be housed in outdoor, weather-proof, vandal-proof, IP66-rated lockable/sealable housing/enclosure. The field elements proposed to be used shall be industrial grade with proper & relevant certifications such as EN, CE & UL. If the bidder proposes to lay a network, NWCMC shall provide/facilitate required permissions for digging, as long as the vendor assumes the responsibility of refilling the trenches with the same material (i.e. asphalt/cement/paver blocks, as the case may be). In the case of a wireless solution, the poles/towers/masts used for installing the wireless

Features	Specifications
	radios shall be installed based on the general specifications listed under the pole specifications in this document. Proper aviation lighting, ladder & safety requirements shall be met while installing such poles/towers/masts. If it is proposed to use private buildings/areas for erecting the same, the required arrangements with the building/structure owner shall be the sole responsibility of the vendor.

5.23 VTS (GPS/GPRS)

Parameter	Specification
General	
Tracking channels	20 channels
L1 Frequency	1575.42Mhz C/A code
Acquisition time	
Cold Start	35seconds (typical) Time To First Fix (TTFF)
Warm Start	40 seconds (typical) with current almanac, position and time
Hot Start	10 seconds TTFF with current almanac, position, time and ephemeris
Re-acquisition time	
General	1 second
Maximum Blockage	Upto 30 seconds
Position accuracy	Position horizontal +/- 10 meters or better
Velocity	0.1meters/ sec
Satellite data collection	2 seconds to 12 seconds for synchronization. Continuous data collection and parity checking on all twelve channels
Position solution	2D position, velocity and 47 geodetic datum to be supported
Position update rate	1 seconds
Application Interface Messages	NMEA, UDP/IP, SMS, SMTP, HTTP
Antenna	SMA antenna
Maximum vehicle Dynamics	500m/sec
Environmental	
Operating Temperature	0 deg C to 55 deg C
Storage temperature Range	-30 deg C to 70 Deg C
Humidity	95% non condensing
Altitude	18,000meters

Parameter	Specification
Electrical	
Power	Power derived from Radio modem (tenderer to specify the voltage)
Power Consumption	0.9 Watts or better
Power connector	Any standard type connector
Back up power	battery inside housing (Tenderer to specify the voltage)
Mechanical	
Cable length	Suitable interconnecting cable with connectors to be specified
Mounting	Magnetic base
Housing	Water resistant plastic
Certificationa	CE, FCC, RoHS, PTCRB
GSM Modem	E-GSM, GPRS 900/1800 Dual Band Module Modem should support interface for GSM –GPRS Communication network. Modem should support AVTS application

5.24 AVL Software

The AVL software shall be used for the vehicle tracking application.
The AVL software shall log in the vehicle reports coming from more than two repeater sites through their respective base modems
The software shall allow the dispatch controllers to select any desired zone and view the vehicles on their respective monitors.
The software shall provide the display of vehicle location on maps, logging of vehicle movements and provide the performance reports of the vehicle and drivers in a spreadsheet format
The movement of vehicles can be played back at any time by choosing date and vehicle IDs.
The movement of vehicles can be played back at any time by choosing date and vehicle IDs.
The above two components are connected through TCP/IP protocol and LAN available to operating system.
It shall be possible for several IOPs and several viewers to be networked Together
It shall be possible for a viewer to access reports from any group of vehicles through one or more IOPs.
The Viewer software the system to operate on suitable operating system providing mapping, tracking and logging the vehicle movements. All the viewer's station shall be equipped with this software.
Load and calibrate maps of layered type, raster or any other type.
Display vehicle on the maps by showing its icon in the colour.
Identity code or Alias name or any combination of them.
Auto scroll to keep the desired vehicle in view.
Zoom in/Out.

Find selected by its ID or Alias name
Message communication with the selected vehicle
Unlimited vehicle tracking
Advisories to indicate vehicle moving over specified area.
Automatic detection of vehicle starting, pressing over Maximum/Minimum speed limits.
Multimedia alarm in control office during panic condition, passing speed limits etc.
Command to delete a vehicle from display
Vehicle history downloading
Display of several vehicles on a map along with their locations, speed and direction of movements and time
Record all movements, date wise, vehicle wise etc.
Reporting of GPS messages in encrypted form to prevent unauthorized interception of messages (Optional)
Choice of NMEA protocols for GPS messages
Conversions of encrypted messages to ASCII format and display
Display of vehicle movements in spreadsheet format etc. for further Analysis

6 Annexure

6.1 Annexure – I - BG Format (EMD)

BANK GUARANTEE IN LIEU OF EARNEST MONEY
(On Non-Judicial stamp paper of appropriate value)

TO :
The Commissioner
Nanded Waghala City Municipal Corporation
Nanded.

IN CONSIDERATION OF the Commissioner, Nanded Waghala Municipal Corporation having its registered office at Nanded (hereinafter called "NWCMC" which expression shall include its successor in business and assigns) issued a tender on Messrs. ..... a partnership firm/sole proprietor business/a company registered under the Companies Act, 1956 having its office at (hereinafter called "Bidder" which expression shall include its executors, administrators and assigns) against Tender no..... dated ..... (hereinafter called "Bidder" which expression shall include any amendments/ alterations to "Bidder" issued by "NWCMC") for the supply of goods to/execution of services for NWCMC and NWCMC having agreed not to insist upon immediate payment of Earnest Money for the fulfilment of the said tender in terms thereof on production of an acceptable Bank Guarantee for an amount of Rs..... (Rupees ..... only).

1.We, ... Bank having office at ..... (hereinafter referred to as "the Bank" which expression shall include its successors and assigns) at the request and on behalf of Bidder hereby agree to pay to the NWCMC without any demur on first demand an amount not exceeding Rs..... (Rupees ..... only) against any loss or damage, costs, charges and expenses caused to or suffered by NWCMC by reason of non performance and fulfilment or for any breach on the part of Bidder of any of the terms and conditions of the said "tender".

2. We, ... Bank further agree that NWCMC shall be sole Judge whether the said Bidder has failed to perform or fulfill the said "tender" in terms thereof or committed breach of any of the terms and conditions of "the order" and the extent of loss, damage, cost, charges and expenses suffered or incurred or would be suffered or incurred by NWCMC on account thereof and we waive in favour of NWCMC all the rights and defences to which we as guarantors and/or Bidder may be entitled to.

3. We, ... Bank further agree that the amount demanded by NWCMC as such shall be final and binding on the Bank as to the Bank's liability to pay and the amount demanded and the Bank to undertake to pay NWCMC the amount so demanded on first demand and without any demur notwithstanding any dispute raised by Bidder or any suit or

other legal proceedings including arbitration pending before any court, tribunal or arbitrator relating thereto, our liability under this guarantee being absolute and unconditional.

4. We, ... Bank further agree with NWCMC that NWCMC shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said "tender"/or to extend time of performance by Bidder from time to time or to postpone for any time to time any of the powers exercisable by NWCMC against Bidder and to forbear to enforce any of the terms and conditions relating to Bidder and we shall not be relieved from our liability by reason of any such variation or extension being granted to Bidder or for any forbearance, act or ommission on the part of NWCMC or any indulgence by NWCMC to Bidder or by any such matter or things whatsoever which under the law relating to sureties would but for this provision have the effect of relieving us.

5. NOTWITHSTANDING anything hereinbefore contained, our liability under this Guarantee is restricted to Rs. ..... (Rupees..... only). Our liability under this guarantee shall remain in force until expiration of nine months (8 month validity + 1 month claim period) from the due date of opening of the said "tender". Unless a demand or claim under this guarantee is made on us in writing within said period, that is, on or before ..... all rights of NWCMC under the said guarantee shall be forfeited and we shall be relieved and discharged from all liabilities thereunder.

6. We, ... Bank further undertake not to revoke this guarantee during its currency except with the previous consent of NWCMC in Writing.

7. We, ... Bank lastly agree that the Bank 's liability under this guarantee shall not be affected by any change in the constitution of Bidder.

8. "The Bank" has power to issue this guarantee in favour of NWCMC in terms of the documents and/or the Agreement/Contract or MOU entered into between Bidder and "the Bank" in this regard. IN WITNESS WHEREOF the Bank has executed this document on this ..... day of .....

For ..... Bank
(by its constituted attorney)

(Signature of a person authorised
to sign on behalf of "the Bank")

6.2 Annexure – II - MAF

MANUFACTURER'S AUTHORIZATION FORM

Date:

To
The Commissioner,
NWCMC, Nanded

Dear Sir,

1. Our company is a reputed manufacturer of *(name &description of equipment)*, having manufacturing facilities at *(address of manufacturing locations*) and Indian/APAC head office at *(address)*.

2. We hereby authorize M/s *(name and address of the bidder*) to submit the bid and sign the contract with your good self for the goods manufactured by us.

3. We are aware of the model numbers of our products quoted for this RFP and assure you that these are not end-of-life products. These model numbers are *(product name &model numbers)*.

4. We are willing to provide a warranty of 1 year on the above mentioned model numbers from the date of supply.

5. We assure you the availability of spare parts for the above mentioned model numbers for a period of 5 years, from the date of supply.

6. During the period of 5 years from the date of supply, in case the bidder fails to provide you the necessary service, we will be obliged to provide the same, at no extra cost.

Yours faithfully,
(Contact Person)
(Designation)
(Name of manufacturers)

Note: *This letter of authority should be on the letterhead of the manufacturer with full address, phone number, email, and website address, and should be signed by a person competent and having the power of attorney to legally bind the manufacturer*.

6.3 Annexure – III – Bidder Information Sheet

Format for Bidder Information Sheet& Undertaking

(In case of Consortium, to be filled in by all the partners/members)

About the Company

Name of the Company:	
Postal Address (Regd. Office):	
Postal Address (Local Office):	
Constitution, Registration No./Date:	

About the Authorised Signatory:

Name:		Designation:	
Office Address:		Email:	
Tel./Fax Nos.:		Cell No.:	

Company Financials/Headcount

	FY 2011-12	FY 2010-11	FY 2009-10
Turnover			
Turnover from Security Solutions			
Turnover from Customer Support Services			
Net Worth			
Total Headcount			
No. of Certified Service Engineers			

Company Experience

Project Name	Customer Name & Address	Project Description	Project Value	Security Component Value	Contract Period (From-To)	Project Status	Contact Person, Contact Tel. No. & Email
1							

2							
.							
N							

Company Credentials

1. QMS - Provide Details
2. Blacklisted/banned/Delisted - Provide Details

Undertaking

On behalf of M/s..... (Name of the Bidder), I, the undersigned, state that all the information stated above as well as in other parts of our bid is true. I do hereby affirm and undertake to abide by all the terms, conditions and specifications given in the Bid Document while performing the contractual obligations relating to the City Surveillance & VTS-Nanded project.

Also, I do affirm & assure that the solution proposed by us is complete & total meeting all the functional requirements of City Surveillance & VTS-Nanded as stated in the Bid Document.

Yours faithfully,

(Authorised Signatory)

Name, Signature & Seal of the Bidder

Place:

Date:

6.4 Annexure – IV – E Tendering information

Guidelines to Vendors on the operations of Electronic Tender Management System of Government of Maharashtra on http://maharashtra.etenders.in

1. These conditions will overrule the conditions stated in the Bidding Documents, wherever relevant and applicable.

2. Registration of Vendors:
The Vendors interested in doing business with any Department / Agency of Government of Maharashtra that have migrated their process onto the Electronic Tender Management System platform shall be required to enroll on the System.

In order to participate in the ***Restricted Tenders*** processed using the System by any Department / Agency, in addition to having a valid enrolment on the System, the Vendors are also required have a valid empanelment in appropriate category on the Sub – Portal assigned to the respective Department / Agency.

The Bidder may obtain the necessary information on the process of enrolment and empanelment either from Helpdesk Support Team or may visit the information published under the link '***How to enrol?***' on the Home Page of the System.

After submission of application for enrolment on the System, the application information shall be verified by the Authorized Representative of the Service Provider. If the information is found to be complete, the enrolment submitted by the Vendor shall be approved.

After the approval of enrolment, the Vendor shall have to apply for empanelment on the respective Department / Agency Sub – Portal (if the process of empanelment is followed in a particular Department / Agency). The application for empanelment shall be approved by the Competent Authority of the respective Department / Agency.

After the application for enrolment of the Vendor is approved, the Vendor shall be able to participate in Open and after the application for empanelment of the Vendor is approved, the Vendor shall be able to participate in restricted Tenders.

3. Obtaining a Digital Certificate:

The Bid Data that is prepared online is required to be encrypted and the hash of the Bid Data is required to be signed electronically using a Digital Certificate (Class – II or Class – III) to maintain the security of the Bid Data and also to establish the identity of the Vendor transacting on the System. The Digital Certificates are issued by an approved Certifying Authority authorized by the Page 2 of 4 Controller of Certifying Authorities of Government

of India through their Authorized Representatives upon receipt of documents required to obtain a Digital Certificate.

Bid data / information for a particular Tender may be submitted only using the Digital Certificate which is used to encrypt the data / information and sign the hash during the ***Bid Preparation and Hash Submission*** stage. In case, during the process of preparing and submitting a Bid for a particular Tender, the Vendor User loses his / her Digital Signature Certificate (i.e. due to virus attack, hardware problem, operating system problem); he / she may not be able to submit the Bid online. Hence, the Users are advised to store his / her Digital Certificate securely and if possible, keep a backup at safe place under adequate security to be used in case of need.

In case of online tendering, if the Digital Certificate issued to an Authorised User of a Firm is used for signing and submitting a Bid, it will be considered equivalent to a no objection certificate / power of attorney to that User to submit the Bid on behalf of the form. The firm has to authorize a specific individual via an authorization certificate signed by a partner of the firm (and in case the applicant is a partner, another partner in the same form is required to
authorise) to use the digital certificate as per ***Indian Information Technology Act, 2000***.

Unless the Digital Certificate is revoked, it will be assumed to represent adequate authority of the Authority User to bid on behalf of the Firm for the Tenders processed on the Electronic Tender Management System of Government of Maharashtra as per ***Indian Information Technology Act, 2000***. The Digital Signature of this Authorized User will be binding on the Firm. It shall be the responsibility of Partners of the Firm to inform the Certifying Authority or Sub Certifying Authority, if the Authorized User changes, and apply for a fresh Digital Signature Certificate. The procedure for application of a Digital Signature Certificate will remain the same for the new Authorised User.

The same procedure holds true for the Authorized Users in a Private / Public Limited Company. In this case, the Authorisation Certificate will have to be signed by the Director of the Company.

4. Set up of Computer System for executing the operations on the Electronic Tender Management System:

To operate on the Electronic Tender Management System of Government of Maharashtra, the Computer System of the User is required be set up. The Users are required to install Utilities available on the Home Page of the System. The Utilities are available for download freely on the Home Page.
The Vendors requested to refer to the ***e-Tendering Toolkit for Bidders*** available online on the page http://maharashtra.etenders.in/mah/index.asp to understand the process of setting up the System or alternatively, contact the Helpdesk Support Team on information / guidance on the process of setting up the System.

5. Online viewing of Detailed Notice Inviting Tenders:

The Vendors can view the detailed Tender Notice along with the Time Schedule (Key Dates) for all the Tenders processed by the Departments / Agencies of Government of Maharashtra on their respective Sub – Portals on the System.

6. Online Download of Tender Documents:
The Tender Documents can be downloaded by the Vendors having valid enrolment on the System (and valid empanelment in case of Restricted Tenders) from the respective Sub - Portal of the Department / Agency on the System.

7. Submission of Bid Hash (Seal) of online Bids:
Submission of Bids will be preceded by submission of the digitally signed Bid Hashes (Seals) as stated in the Tender Time Schedule (Key Dates) published in the Notice Inviting Tender. The Hashes are the thumbprint of electronic data and are based on one – way algorithm. The Hashes establish the unique identity of Bid Data. The Hashes are digitally signed.

8. Generation of Super Hash:
After the expiry of the cut – off time of submission of digitally signed Bid Hashes (Seals) by the Bidder has lapsed, the stage is automatically locked and digitally signed Super Hashes (Seal) will be generated by the Competent Authority of the respective Department / Agency will generate a Super Hash.

9. Decryption and re-encryption of online Bids (submitting the Bids online):
After the generation of Super Hash, the Vendors have to decrypt their Bids using their Digital Certificate and immediately re-encrypt their Bids using the Public Key of the Competent Authority of the Department / Agency. At this time, the Vendors are also required to upload the files for which they generated the Hash values during the Bid Preparation and Hash Submission stage.

The Bid data / information of only those Vendors who have submitted their Bid Hashes (Seals) within the stipulated time (as per the Tender Time Schedule), will be available for decryption and re-encryption and to upload the relevant files. A Vendor who has not submitted his Bid Hashes (Seals) within the stipulated time will not be allowed to decrypt / re-encrypt the Bid data / information.

10. Submission of Earnest Money Deposit:
The Vendors are required to submit the Earnest Money Deposit and cost of Tender Documents in a Sealed Physical Envelope and the same should reach the concerned Competent Authority before the last date and time as specified in the Tender Documents. Vendors are required to keep the instruments for submission of Earnest Money Deposit and the cost of Tender Documents ready as the details of these instruments are required to be entered in the System during the Bid Preparation and Hash Submission stage. The details of the Earnest Money Deposit and cost of Tender Documents instruments shall be verified and matched during the Tender Opening event.

11. Opening of Electronic Bids:
The Competent Authority receiving the Bids shall first open the manual Earnest Money Deposit and cost of Tender Documents and verify with the details submitted online. The

Competent Authority shall then open the online envelope(s) (decrypt the Bid Data) through the System. The Authority shall generate the Hash value of each envelope of each Vendor and match it with the original Hash value of the envelope generated and submitted by the Bidder during the Bid Preparation and Hash Submission stage.

12. Tender Schedule (Key Dates):

The Vendors are strictly advised to follow the Dates and Times allocated to each stage as indicated in the Time Schedule in the Notice Inviting Tender for each Tender. All the online activities are time tracked and the Electronic Tender Management System enforces time-locks that ensure that no activity or transaction can take place outside the Start and End Dates and Time of the stage as defined in the Tender Schedule.

6.5 Annexure – V - BOQ

Bill of Quantities

S. No	Description	Spec. Ref.	Unit	Quantity
	PART I – Nanded City Surveillance System			
A	**CAMERA**			
1	Fixed Megapixel IP Box Cameras with industrial grade power supply (with 30-min back-up) & IP-rated outdoor rack/box/housing.	5.1	No.	50
2	Fixed Megapixel IP Box Cameras with >100db WDR with industrial grade power supply (with 30-min back-up) & IP-rated outdoor rack/box/housing.	5.2	No.	25
3	HD Megapixel PTZ Camera with industrial grade power supply (with 30-min back-up) & IP-rated outdoor rack/box/housing.	5.3	No.	25
4	Portable Video Surveillance System (Camera, Storage, Monitor)	5.4	No.	4
5	Audio Amplifier	5.5	No.	50
6	Outdoor Horn Speakers	5.5	No.	50
7	Pole (Height ~ 3m) for mounting Camera	5.6	No.	20
8	Panic Alarm Switch	5.7	No.	50
B	**COMMAND & CONTROL ROOM**			
9	Video Management + AVL Server	5.8	No.	1
10	Server/s for Video Analytics software (For Server-based analytics option)	5.9	Set	1
11	Storage server - NAS/SAN - recording /Storage for 10 days continuous recording to be configured with RAID 5 and should be able to store recording with full camera resolution and 25 FPS (Recording)	5.10	No.	1
12	Monitors 42"	5.11	No.	9
13	Network Switch - 24 port Layer-3 Core Switch	5.12	No.	1
14	Network Switch - 24 port Layer 2 Switch	5.13	No.	2
15	Fiber Accessories	5.14	LS	1
16	Server/Network Rack Floor-Mount (42U)	5.15	No.	2
17	Online UPS of suitable rating (to provide uninterrupted power to all the control equipment in the Control Room) with 1 hr backup	5.16	No.	1
18	PTZ keyboard/joystick	5.17	No.	2
19	PA Zone Selector with Microphone	5.5	No.	2
20	VMS, Command & Control & Disaster Management Software	5.18	No.	1
21	Video Analytics Software Camera License	5.19	No.	20

S. No	Description	Spec. Ref.	Unit	Quantity
22	Control Room Infrastructural Set-up	5.20	LS	1
23	Workstations	5.21	No.	2
C	**OTHER**			
24	Connectivity charges for all the cameras (per year) (Note: All the active & passive networking elements required for the proposed solution for establishing the required connectivity shall be the responsibility of the vendor).	5.22	Per Year	5
25	Post-1_Year_Warranty AMC Charges for the entire system	NA	Per Year	4
	PART II – VTS			
26	VTS (GPS/GPRS)	5.23	No.	25
27	AVL Software	5.24	No.	1
28	Monthly recurring charges (for 5 yrs – GPRS Connectivity)	NA	Per Year	5
29	Post-1_Year_Warranty AMC Charges	NA	Per Year	4

6.6 Annexure – VI - Solution Assurance Certificate

(from VMS & VAS software OEM - To be printed on OEM Company Letterhead)

To,

The Commissioner,
NWCMC, Nanded

Ref.: Tender No. No.: _____

Sub: Certificate for workability of the Solution.

Dear Sir,

In response to your above-referenced tender, M/s _____ ("Partner-bidder") have proposed our VMS / VA Software Product _____ (Please mention the Product Name, Model & Version) for Nanded City Surveillance and VTS System. After carefully examining your techno-commercial requirement, we hereby certify that the solution (architectural schematic attached separately), containing following components, proposed by the partner-bidder is supported by & is fully compliant with our software Product & that the solution is workable. The maximum number of components supported by the quoted version/model of our software product is also mentioned in the table below:

Sr.No.	Component Name	Make & Model	Max. No. Supported by the quoted version	Specifications
1	Fixed Camera			
2	PTZ Camera			
3	VMS Software			
4	VTS			
5	VAS software			
6	Server			(Pls mention OS & any other software proposed separately)

7	Workstation			(Pls mention OS & any other software proposed separately)

The quoted central hardware / software products quoted by our Partner-bidder, listed below, meet/exceed the minimum specifications required to host & run the quoted version/model of our software product so as to meet NWCMC's prescribed objectives/ functional requirements & response times to the complete satisfaction of NWCMC.

(Signature)

Full Name: _____

Company Name: _____

Postal Address: _____

Contact No.: (Work) _____

(Cell) _____

Email: _____

Attachments:

1. Certified Architectural Schematic of the solution proposed by the Partner-bidder.

{end of document}