

NATIONAL COMPETITIVE BID (NCB)
OPEN TENDER

BHARATIYA RESERVE BANK NOTE MUDRAN (P) LTD
NOTE MUDRAN NAGAR
MYSURU -570003

Phone: 0821 – 2582905,2582915,2582925,2582935,2582945

Fax : 0821 – 2582099, E-Mail: Mysurupress@brbnmpl.co.in

Website : www.brbnmpl.co.in

Not Transferable

Security Classification: Non-Security

TENDER DOCUMENT FOR
“UPGRADATION OF CCTV SYSTEM AND SERVERS
WITH IP CAMERAS AND IMPLEMENTATION OF VIDEO
ANALYTIC FEATURES AT BRBNMPL, MYSURU”

Tender No. 118/MYS/MAINT(U)/ 2016-17

Dated 10-03-2017

This tender document contains 85 pages

The tender document is sold to:

M/s. _____

Address _____

Details of Contact person in BRBNMPL regarding this tender:

Name: S M Pawale,

Designation: Asst. General Manager

Address: As above

Phone : 0821 – 2469050, Fax : 0821-2582885

Email: smpawale@brbnmpl.co.in

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**NATIONAL COMPETITIVE BID
STANDARD BIDDING DOCUMENTS**

Section I: Notice Inviting Tender (NIT)

Tender Sl. No. **118/MYS/MAINT(U)/ 2016-17**

Date: 10-03-2017

1. Sealed tenders are invited from eligible and qualified tenderers for supply of following goods & services:

Schedule No.	Brief Description of Goods / Services	Quantity (with unit)	Earnest Money (in Rs.)	Remarks
1	“UPGRADATION OF CCTV SYSTEM AND SERVERS WITH IP CAMERAS AND IMPLEMENTATION OF VIDEO ANALYTIC FEATURES” AT BRBNMPL, MYSURU.	01 Lot	Rs.20.00 Lakhs	

Type of Tender (Two Bid / PQB / EOI / RC / Development / Indigenization / Disposal of Scrap / Security item etc.	Two Bid – Open Tender
Date of Sale of tender documents	From 10/03/2017 to 25/04/2017 during office hours
Price of the Tender Document	Rs. 500.00
Price of sale of tender documents	Rs. 500.00
Closing date and time for receipt of tenders	14:30 Hrs on 26/04/2017
Place of receipt of tenders	Admin Building, BRBNMPL, Mysuru
Time and date of opening of tenders	15:00 Hrs on 26/04/2017
Place of opening of tenders	Admin Building, BRBNMPL, Mysuru
Nominated Person / Designation to Receive Bulky Tender (Clause 21.21.1 of GIT)	Shri. P.Anbazhagan, Manager (PP)

2. Interested tenderers may obtain further information about this requirement from the above office selling the documents. They may also visit our website mentioned above for further details.
3. Tender documents may be purchased on payment of non-refundable fee of Rs.500.00 (Rupees five hundred only) per set in the form of account payee demand draft/ cashier's cheque/certified cheque, drawn on a scheduled commercial bank in India, in favour of BRBNMPL, Mysuru, payable at Mysuru.
4. If requested, the tender documents will be mailed by registered post/ speed post to the domestic tenderers and by international air-mail to the foreign tenderers, for which extra expenditure per set will be Rs. 100.00 (Rupees hundred only) for domestic post. The tenderer is to add the applicable postage cost in the non-refundable fee mentioned in Para 3 above.
5. Tenderer may also download the tender documents from the web site and submit its tender by utilizing the downloaded document, along with the required non-refundable fee as mentioned in Para 3 above.
6. Tenderers shall ensure that their tenders, duly sealed and signed, complete in all respects as per instructions contained in the Tender Documents, are dropped in the tender box located at the address given below on or before the closing date and time indicated in the Para 1 above, failing which the tenders will be treated as late and rejected.
7. In the event of any of the above mentioned dates being declared as a holiday/ closed day for the purchase organisation, the tenders will be sold/ received/ opened on the next working day at the appointed time.
8. The sealed tender offer superscribed as **Tender For “UPGRADATION OF CCTV SYSTEM AND SERVERS WITH IP CAMERAS AND IMPLEMENTATION OF VIDEO ANALYTIC FEATURES” AT BRBNMPL, MYSURU against Tender No. 118/MYS/MAINT(U)/ 2016-17 dated 10-03-2017** " should be addressed to **“The General Manager”, BRBNMPL, Mysuru-570003** so as to reach us on or before **14.30 hrs. on 26/04/2017. Tender Offers not super scribed as above are liable for rejection.**
 - a. Copy of each page of Tender documents should be duly signed & seal affixed and submitted along with the Techno-commercial bid as a token of acceptance of tender conditions.
 - b. The first cover should contain i) DD for Rs.500/- towards cost of tender document ii) EMD amount of Rs.20.00 Lakhs as detailed in clause 18 of General instruction to Tenderer (GIT) and superscribed as **“Tender fee/EMD against Tender No. ___/MYS/MAINT(U)/ 2016-17 dated - -2016**
 - c. The second sealed cover should have signed tender documents, along with Techno-commercial bid as per Section XII and superscribed as **“Techno-Commercial bid against tender No. 118/MYS/MAINT(U)/ 2016-17 dated 10-03-2017 ”.**
 - d. The third sealed cover should have price bid as per section X and XI with superscription **“Price BID – Tender No. 118/MYS/MAINT(U)/ 2016-17 dated 10-03-2017 .** If price bid is found in open condition along with technical bid, the tender shall be rejected summarily.
 - e. The above three covers should be put in Final cover, sealed and properly superscribed as **“UPGRADATION OF CCTV SYSTEM AND SERVERS WITH IP CAMERAS AND IMPLEMENTATION OF VIDEO ANALYTIC**

FEATURES” AT BRBNMPL, MYSURU , Tender No. 118/MYS/MAINT(U)/ 2016-17 dated 10-03-2017 ”.

- f. On opening of Main sealed envelope, in case envelope containing Tender fee and EMD is not found in order by tender opening committee, the other envelopes shall not be opened and tender shall be rejected summarily.**
- g. The tender offer may be sent by Regd. Post/ Courier. Parties desirous of handing over the Tender Offer by hand should drop the Tender Cover in the Tender Box kept in the Administration Building ground floor, after recording the offer details in the register kept on the tender box.

9. The tender documents are not transferable.

For and on behalf of BRBNMPL, Mysuru

Sd/-
(H.V. Neerajakshappa)
Deputy General Manager

Section II: General Instructions to Tenderer (GIT)

This Section-II shall be downloaded from website: www.brbnmpl.co.in under the section ‘Downloads’ and signed & stamped and submitted along with the **Technical bid** as acceptance of terms & conditions. *(Offer without the copies of Section-II shall liable for rejection)*

Section III: Special Instructions to Tenderers (SIT)

The following Special Instructions to Tenderers will apply for this purchase. These special instructions will modify/ substitute/ supplement the corresponding General Instructions to Tenderers (GIT) incorporated in Section II. The corresponding GIT clause numbers have also been indicated in the text below:

In case of any conflict between the provision in the GIT and that in the SIT, the provision contained in the SIT shall prevail.

(Clauses of GIT listed below include a possibility for variation in their provisions through Special Instructions to Tenderer (SIT). There could be other clauses in SIT as deemed fit.)

SL. No.	GIT Clause No.	Topic	SIT Provision
1	1,2,3,4,5,6, 7	PREAMBLE-Introduction, Language of Tender, Eligible Tenderers, Eligible Goods and Services (Origin of Goods), Tendering Expense, TENDER DOCUMENTS, Amendments to Tender Documents	No Change
2	8	Pre-bid Conference	Not applicable
3	9	Time Limit for receiving request for clarification of Tender Documents	No Change
4	10,11,12, 13,14,15	Documents Comprising the Tender, Tender Currencies, Tender Prices, Indian Agent, PVC Clause & Formula, Alternative tenders	No Change
5	16	Documents Establishing Tenderer's Eligibility and Qualifications	No Change
6	17	Documents establishing Good's Conformity to Tender document	No Change
7	18	Earnest Money Deposit (EMD) Note: Bidders claiming exemption of EMD should submit the DGS&D (or) NSIC registration certificate without fail along with their techno-commercial offer.	The Tenderers who are currently registered and also with continue to remain registered during tender validity period with DGS&D / NSIC may be exempted from payment of EMD subject to approval of competent authority of BRBNMPL.
8	19	Tender Validity	No Change. (120 days from date of opening of tender.)
10	20	Signing and Sealing of Tender Note: The following SIT provision is made with	No Change.

Tender document for “Upgradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features”.

		respect the following clause 20.4. Number of Copies of Tenders to be submitted : One copy only (duplicate copy not required) 20.9 : E procurement : Not permitted.	
11	21,22,23	Submission of Tenders, Late Tender, Alteration and Withdrawal of Tender	No Change
12	24	Opening of tenders Note: Please read the guidelines for filling up two part bid tender as mentioned in Page 5 above which is described in detail w.r.to clause 24.4	No Change
13	25	Basic Principle	No Change
14	26,27,28, 29,30,31, 32,33,34	Preliminary Scrutiny of Tenders, Minor Infirmary / Irregularity / Non-Conformity, Discrepancy in Prices, Discrepancy between original and copies of Tender, Clarification of Bids, Qualification / Eligibility Criteria, Conversion of tender currencies to Indian Rupees, Schedule-wise Evaluation, Comparison on CIF Destination Basis.	No Change
15	35 to 49	Additional Factors and Parameters for Evaluation and Ranking of Responsive Tenders, Tenderer's capability to perform the contract, Tenderer's capability to perform the contract, Cartel Formation / Pool Rates, Negotiations, Contacting BRBNMPL, AWARD OF CONTRACT, Award Criteria, Variation of Quantities at the Time of Award, Parallel Contracts, Serious Misdemeanors, Notification of Award, Issue of Contract, Non-receipt of Performance Security and Contract by BRBNMPL, Return of EMD, Publication of Tender Result.	No Change
16	50 to 55	Rate Contract Tenders, PQB Tenders, Tenders involving Purchaser's and Pre-Production Samples, EOI Tenders, enders for Disposal of Scrap, Development / Indigenization Tenders	Not applicable to this tender

(To be signed & stamped and submitted along with Techno-commercial Bid Part –I)

Section IV: General Conditions of Contract (GCC)

This Section-IV shall be downloaded from website: www.brbnmpl.co.in under the section ‘Downloads’ and signed & stamped and submitted along with the **Technical Bid** as acceptance of terms & conditions. *(Offer without the copies of Section-IV shall liable for rejection)*

Section V: Special Conditions of Contract (SCC)

The following Special Conditions of Contract (SCC) will apply for this purchase. These Special Conditions will modify/ substitute/ supplement the corresponding (GCC) clauses.

Whenever there is any conflict between the provision in the GGC and that in the SCC, the provision contained in the SCC shall prevail.

(Clauses of GCC listed below include a possibility for variation in their provisions through SCC. There could be other clauses in SCC as deemed fit)

Sr. No.	GCC Clause No.	Topic	SCC Provision
1.	1 to 15	Definitions: Interpretation and Abbreviations, Application, Use of contract documents and information, Patent Rights, Country of Origin, Performance Security, Technical Specifications and Standards, Packing and Marketing, Inspecting and Quality Control, terms of Delivery, Transportation of Goods, Insurance, Spare parts, Distribution of Dispatch Documents for Clearance/Receipt of Goods.	No Change
2.	16	Warranty.	Two Years
3.	17& 18	Assignment, Sub Contracts	No Change
4.	19	Modification of contract	No Change (Option clause is not applicable)
5.	20 & 21	Prices, Taxes and Duties	No change
6.	22	Terms and Mode of Payment Note: Bidder's attention is invited to refer GCC clause No.6 (Performance Security)	As Per Point No. 3 - Payment clause given below.
7.	23 to 35	Delay in the supplier's performance, Liquidated damages, Custody and Return of BRBNMPL's Materials/ Equipment/ Documents loaned to Contractor, Termination for default, Termination for insolvency, Force Majeure, Termination for convenience, Governing language, Notices, Code of Ethics, Resolution of disputes, Applicable Law, Secrecy	No Change Place of arbitration will be Mysuru/ Bangalore
8.	36	Disposal / Sale of Scrap by Tender	Not applicable to this tender

- 1) **Pre-Bid Visit:** The bidders are advised to visit the Plant premises to have understanding about scope of work, volume of work, any doubt/clarification may cleared/done before submitting their offers. Any claim of ignorance about the system or responsibility shall not be entertained in later stage.
- 2) **Time schedule:** Work shall be completed within 150 days from the date of Issue of LOI / work order. The total time period as specified above for the completion of the job is to be strictly maintained and is the essence of the order.
- 3) **Payment:**
 - a. 80% of the value of Material Supply part will be released on receipt and acceptance of all the items in good working condition at site.
 - b. Balance 20% of the value of Material Supply part and 100% of Installation and commissioning charges will be released on successful installation and commissioning and acceptance by the user department and after issue of work completion certificate / FAC..
- 4) **Security Deposit:** As per clause 6 of General Condition of Contract (GCC) – Section IV, Performance Security Deposit of 10% of the total Contract Value to be submitted within 21 days after issue of LOI / Work order by the way of Bank Guarantee issued by any scheduled commercial Banks in India, valid upto 60 days after the date of completion of all contractual obligations including 2 years Warranty period and 5 years AMC period (Total 7 years). Security Deposit shall be released only after completion of Warranty and AMC period of total 7 years.
- 5) **Compensation for delay:** For any delay beyond the time specified above without any valid reason, liquidated damages @ 0.5% of the value of the work shall be levied per week of delay, subject to a maximum of 10% of total value of works completed / final bill value. Quantum of liquidated damages assessed and levied by BRBNMPL shall be final and not challengeable by the supplier / contractor. Contractor has to apply for extension with valid reasons at least 10 days prior to the completion date.
- 6) **Statutory Deductions:** Statutory deductions such as WCT, VAT, Income Tax, Service Taxes etc. as applicable shall be effected while making payment.
- 7) **Statutory Requirements:** The Contractor should comply with all statutory provisions as applicable such as but not limited to:-
 - a) Provisions of the Factories Act, Workman Compensation Act, Employers Liability Act, Contract Labour Act, Industrial Dispute Act, Minimum Wages Act, Payment of Wages Act, EPF and ESI Act including any modification thereof or any other law relating thereto and rules framed there under from time to time.
 - b) The Contractor shall indemnify the company from any claim due to any breach of statutory requirements and the company as a principle employer shall enforce the provisions of the act.
 - c) The contractor shall obtain license / registration from Labour Authority / any other Statutory Authority including PF & ESI as may be required and shall furnish Statutory Returns and deposit contributions and Statutory Levies as per the Law of the Land as applicable from time to time. The Contractor shall be liable to furnish with the company all copies returns and documents as would be asked for time to time.

- d) **Any untoward incident arising out of improper supervision or inadequate safety measures will be the sole responsibility of the contractor. The Contractor shall conform to all the Labour Laws and shall remain solely responsible for the obligation under the relevant statutory provisions.**
- e) **The contractor has to provide all statutory welfare measures for their workers.**
- 8) BIDS submitted not in accordance with the above guidelines & with counter conditions will be liable for rejection. BRBNMPL will examine the materiality/Significance of the deviation /variation if any and shall take its own decision to accept or reject the tender. BRBNMPL’s decision on acceptance /rejection shall be final without assigning any reason thereof. BIDS once submitted will not be allowed for revision without the approval of BRBNMPL. Any withdrawal of BID after submission of offer will result in forfeiture of EMD and blacklisting of vendor. Parties not interested to participate in the tender for any reason, may please intimate us.
- 9) **Integrity fact :** Integrity Fact as per Section – XX shall be filled and submitted along with Techno-Commercial Bid. The successful bidder shall enter into agreement with BRBNMPL for integrity fact, as per Section – XX.
- 10) **Materials:** BRBNMPL shall reserve the right to reject any materials if it is found not in conformity with specification and terms and conditions of the order in all respect.
- 11) **Quantum of work:** Quantities mentioned in the schedule of items are as per the prevailing condition & requirement and may vary during the execution of work. Any such variance will be accounted and paid extra as per the quoted rates.
- 12) **Warranty / Defects Liability Period:** Warranty /Defects liability period against this item / job shall be Two years from the date of Final Acceptance Certificate. The contractor shall be liable to replace/repair any defects within the warranty/defects liability period free of cost to the BRBNMPL.
- 13) **Recovery & Rectification of work:** In case contractor fails to attend the same as per defect liability period clause above within a week from the date of intimation, it shall be got rectified by the owner through another agency & money spent thus shall be recovered from the contractor. If the work is not completed in all respect or delayed beyond reasonable time or contractor discontinues the work abruptly, then BRBNMPL reserves right to get the remaining work / uncompleted work done through any other agencies at the risk and cost of the contractor. In such case, the pending claims and security deposit of the contractor shall be forfeited.
- 14) **Safety & Security Measures:**
- The contractor should scrupulously conform to the safety and security norms as stipulated by BRBNMPL while working in the security area.
 - The contractor shall take all the precaution while executing this work. Protective gear such as safety helmets, boots, belts etc. shall be provided by the contractor at his own cost to all his workers at site. The Contractor shall impose such requirements on all sub-contractors also. It shall be the responsibility of the contractor to ensure that such protective gear is worn at all times by all personnel working at site. BRBNMPL shall have the right to stop any person not wearing such protective gear from working on the site.

- c) BRBNMPL is a security organization and the Govt. of Karnataka declares the premise as Prohibited Area. Hence the contractor has to abide by the security rules of the Company. The contractor has to ensure the character and antecedent of the persons deployed. The contractor must be in a position to produce such documents whenever he is asked to do so. Details shall be furnished as per format when called for. The contractor has to issue printed photo identity card to its workers duly authenticated by the designated security officer of the Company. Contractor should apply for Gate Pass for labours, welding permission and material entry pass etc. as per approved format only, well in advance to avoid any delay in issue of Gate passes.
- d) While applying for pass, contractor must enclose copy of address proof (Voters ID card or ration card or driving license or passport etc.), for all the workers for which gate pass has been requested. The details shall be submitted in the prescribed format as given below.

Sl No	Name of Person	Father name	Age	Present Address	Identification Mark	Signature of the Individual

- e) On award of the contract the contractor shall sign the Non-disclosure format and abide with that.
- f) Any worker of the contractor, if found by the Company as unsuitable or having doubtful integrity, shall be removed from the premises at the risk and cost of the contractor. The contractor shall vouch guarantee for the integrity of its workers.

15) Cleanliness :-

Contractor is required to ensure complete cleanliness at the site. Debris generated during the day's work should be disposed off immediately.

- 16) Electricity & Construction water:** Necessary source of electricity & water required for civil works will be taken from the available nearby source. In case the same is not available it should be arranged by the contractor.

- 17) Legal jurisdiction:** The court of Mysuru (Karnataka State) only shall have jurisdiction to deal with and decide any legal matter of dispute whatsoever arising out of any work order placed by us.

All Correspondences should be addressed to “ The General Manager , Bharatiya Reserve Bank Note Mudran (P) Ltd , Note Mudran Nagar , Mysuru – 570 003

Section VI: List of Requirements

Schedule No.	Brief description of goods and services (Related specifications etc. are in Section-VII)	Accounting unit	Quantity	Amount of Earnest Money
1.	“UPGRADATION OF CCTV SYSTEM AND SERVERS WITH IP CAMERAS AND IMPLEMENTATION OF VIDEO ANALYTIC FEATURES AT BRBNMPL, MYSURU”	Lot	01	Rs.20.00 Lakhs

Required Delivery Schedule: The supply, installation and commissioning work shall be completed in all respect within 150 Days

Required Terms of Delivery, Destination and preferred mode of Transportation:

F.O.R, BRBNMPL, Mysuru.

Section VII: Technical Specifications

I. PREAMBLE

Bharatiya Reserve Bank Note Mudran (P) Limited (BRBNMPL) is a wholly owned Subsidiary of Reserve Bank of India is engaged in sovereign function of Designing and Printing of Bank Notes. It has corporate office at Bangalore and has two printing presses at Mysuru in Karnataka and Salboni in West Bengal. The Company proposes for **“Up-gradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features” at BRBNMPL, Mysuru.** This proposal includes replacing the existing analog CCTV cameras, DVR’s, Servers, and Storage with IP based cameras, Servers and storage and also implementation of Video Analytics features including Facial recognition and ANPR & UVS. The task would be executed by understanding the Company’s existing CCTV system for implementing the new solution by the System Integrator/OEM/OEM integrator including Design, Supply, Installation, Testing & commissioning on a turnkey basis, training of Company’s officials, handing over etc.

II. SCOPE OF WORK:

1. **Scope of work for CCTV Surveillance system with IP cameras shall include but shall not restrict to the following:**

- a) Design, Supply, Installation, Testing & commissioning of IP Cameras for surveillance at all notified areas of the Main Press, for replacing the analog CCTV Cameras and also at designated locations for video analytics purpose and interfacing with the existing OFC network / new network.
- b) Design, Supply, Installation, Testing & commissioning of Camera Server, Back-up server and storage system with latest higher end version to replace the existing DVRs, IBM Back-up server and storage system with the required capacity for minimum 500 cameras.
- c) The camera servers should be the front end recording of the cameras for 07 days Raid 10 back up with n+1 hot stand by configuration. If any one of the camera server fails, the stand by server must take over automatically without any delay.
- d) The Video streaming should be recorded parallel in both Camera servers and SAN storage without interruption or delay. In case of loss of video to SAN storage due to any failure, there should be provision to sync and update the data from camera server for the failure duration.
- e) The VMS/ Database Servers must be configured in a hot backup configuration where at any point of time, one is the acting Primary and the other is acting as the Hot Backup. The backup Database Server shall be continuously synchronized with the master Database Server to ensure that it is always up-to-date and ready for a fail-over, when required. The failover for Database Server should be seamless and should not affect recording of cameras.
- f) It must be possible to remove one of the redundant systems for maintenance without interrupting operation, and upon its reinstatement, automatically re-synchronize the databases, again without interruption to system operation
- g) The Bidder has to provide complete solution involving all aspects of required components, including but not limiting to, provide IP based CCTV Megapixel cameras, Digital Network Video Management System, Servers, Network attached storage system, workstations, video wall/ display systems, layer 2 and layer 3 network switches, UTP, other network components and cabling along with comprehensive

responsibility of design, installation, Operationalization and Maintenance for the supplied equipment at BRBNMPL, Mysuru.

- h) All the critical systems should provide for high availability and fault tolerance.
- i) Integration of PTZ control cameras and fixed Megapixel cameras at outdoor multiple locations with the OFC Network so as to bring the video stream for video analytics, live monitoring and storage at Control room over the LAN using the latest technology such as Tri- Stream technology enabling high quality video recording over network at the SAN storage and lower resolution transmission to networked PCs at the rates that won't cause bandwidth issues.
- j) Storage system shall be Storage Area Network (SAN). The Network video storage shall be capable of storing videos for the specified period based on the following details:

i. Resolution	Minimum 2 MP for each camera for total of 500 cameras Minimum
ii. Frame Rate	25 FPS
iii. Activity Level	60%
iv. Duration of recording	24 / 7 for 90 days Raid 6 configuration.
- k) The bidder shall provide the storage capacity as per the above requirement for the various types of cameras and their recording duration. The bidder shall also furnish the calculations to establish that the offered storage capacity is adequate to meet the above requirement. If the offered storage capacity is found to be insufficient at any point of time, the bidder shall provide additional storage without any additional cost.
- l) All storage redundancy and mirroring capabilities shall be done using hardware solution and shall not rely on the Operating System and Server CPU to perform these functions. The Storage should support IP based replication in future. The bidder should provide details for the offered configuration: Drive type, Drive speed, Drive size, RAID group used to configure usable capacity (Data + parity + spares) along with total disks supported by the storage and balance disk space.
- m) DATA migration from the existing CCTV system to new CCTV system needs to be carried out on completion of the installation.
- n) The Entire System shall operate on 230V+/-10%, 50 Hz single -phase online UPS power supply available with us (2x15 KVA). If any equipment operates on any voltage other than the supply voltage and supply frequency, necessary conversion/correction device for supply shall be made by the contractor.

2. Scope of work for Video Analytics, Facial Recognition, ANPR & UVS System implementation shall include but shall not restrict to the following Technical details for:

A. Video Analytics including Facial Recognition:

- a) Supply, installation , testing and commissioning of required Video Analytics software with license for 100 cameras, Facial Recognition for 4 cameras, DVM / VMS Software, Server and other required tools and accessories for integration.
- b) Implementing Video Analytics Features for Cameras at watch towers covering the inner perimeter of plant, plant main entrance and at other notified places according to the requirement.

- c) The Video Analytics features will be introduced initially for 20 cameras and there should be a provision to extend the same to other notified cameras in use as and when required. The License required is for 100 No. of cameras.
- d) The Facial Recognition features will be introduced initially at 04 locations and there should be provision for extending to other notified locations whenever required.
- e) The Video Analytics features should be capable of alarming the events at Control Room to alert the Security personnel.
- f) Video Analytics should be deployed on any of the cameras dynamically and should not be tagged to the MAC address of the camera. If any one of the cameras is replaced for maintenance, the replaced camera should automatically use the VA configuration without modifying any license.
- g) Provision to include any additional video analytics features other than the specified, if required, to be incorporated and integrated on additional requirement basis.
- h) Supply and installation of necessary servers for video analytics system and integrate with supplied Camera server and SAN Storage.

B. ANPR & UVS System:

- a) Supply, installation, testing and commissioning of required ANPR and UVS system, Software, Cameras and Servers with license for 4 locations. Both ANPR and UVS system shall be an integrated single system.
- b) The ANPR system will be implemented initially at our entry gates (03 Nos) and ANPR with UVS system will be implemented at our Main gate (01 No.) with license for 4 (ANPR) and 01(UVS).
- c) The system should be IP based with central server at main location and local client/servers at all ANPR / UVS installed locations to view and control locally and centrally with data updation at all locations.
- d) The ANPR and UVS system should be provided with higher end Day Night Cameras with IP 67 compliant and required White light illuminator.
- e) The ANPR should recognize and read the license plate from both front and back side of all type of vehicles entering and exiting the gates and recognize all type of number plate formats.
- f) The ANPR should read the Licence plate and shall be compared with user defined positive and negative lists, opening and closing of gate and generate alarm based on the detected Licence plate information.
- g) Alert / warning the Security person about the un- authorized entry of the vehicles.
- h) The Under vehicle inspection/scan system shall provide the solution to scan, inspect and digitally record the underside of the vehicles, that enter BRBNMPL plant area,
- i) It should assists our security personnel to perform high quality and highly efficient inspection against explosives, weapons, narcotics and other contraband hidden under vehicles.
- j) The live scanning image shall display in the viewing monitor along with the licence plate of the vehicle and driver photo.
- k) The UVS system should be weather proof IP-67 certified underground enclosures and Air cleaner mechanism for all weather operation.
- l) System should be capable of Generating report of all vehicles that have entered/Exited during a specified time slot

- m) The System should be robust and highly accurate.
- n) Installation including required mounting poles, cabling and other required accessories to be considered and included.

3. Scope of work for creating OFC Backbone Network & CAT 6 cabling for Communication

- a) Establishing of redundant & robust OFC network for data / voice / video communication. L3 switch is the central point of the OFC network, located at the control room. All indoor L2 switches and Edge switches with combo SFP port shall be commercial grade and to be installed with suitable enclosure. 12 cores OFC is to be used for creating the network. All the switches will be connected in a ring /star formation to enhance network reliability and no single point failure to keep network latency at a minimum. The network must be designed to have sufficient band width for simultaneous viewing as well as recording for 500 cameras minimum.
- b) Existing L3 Switch which is hosting existing OFC rings shall be upgraded if required in order to get configured with new L3 switch to provide 1+1 hot redundant and also to provide fail-safe service for all the connected cameras by hosting all OFC rings including new ring/s.
- c) The OFC network should be tested and commissioned to the required standard with OTDR and test report to be submitted.

4. Scope of work for Comprehensive AMC:

Maintaining the entire system under Comprehensive AMC for Five years, after successful completion of Two years warranty period. The scope of AMC will be,

- a) To check and attend the Daily maintenance/periodical maintenance.
- b) Attending to breakdown calls, as and when received.
- c) Comprehensive AMC should be included for the Total IPCCTV system, Video analytics, Facial recognition system, ANPR, UVSS including all cameras, servers, monitors, network switches, storage devices, cables of all types and all hardware and software etc. and also the existing OFC Back-bone network, IP Cameras and related equipments /items.
- d) It will be the responsibility of successful bidder to replace the defective components during warranty as well as AMC period to make the system serviceable.
- e) The tenderer shall quote his rates in Rupees per annum for all inclusive Comprehensive Maintenance Contract, cost of spares, transport, insurance, handling, etc. applicable for a period of 5 years after expiry of 2 years warranty period. These rates shall remain firm for the Five years of CAMC during the entire warranty & AMC period. The bidder will have to provide at no additional cost to the BRBNMPL all software updates, releases, Version upgrades, New Versions and renewal of licenses etc. within 30 days of their availability. The existing IP Cameras, OFC network and network components like switches, LIU etc. to be included in the AMC quote. These existing systems should be maintained during the warranty period also for normal day to day maintenance as a single system.

- f) The successful bidder is required to depute atleast Three qualified Resident Engineers (full time round the clock 24/7 on site support) at BRBNMPL, Mysuru to take care of the day-to-day maintenance requirement of the system during the warranty period and during Annual Maintenance Contract. The minimum professional qualification for the Resident Engineer shall be 3 years' diploma in Electronics / IT from recognized / approved Polytechnic / Engineering college with 3 years' post qualification experience in the IP based CCTV field.
- g) The Contractor should maintain the system 100% uptime. If the contractor fails to liquidate the complaints, failure of the system within a required time frame, a compensation for delay at 0.5% of monthly contract value per week for each occasion will be deducted. However, total deduction in this regard is limited to 10% of the total contract value. Further such action shall be adversely remarked while evaluating performance for further renewal of the Contract.

5. General Technical Requirement of the System:

- a) The system shall have a provision for PTZ control cameras and fixed cameras at both indoor and outdoor multiple locations and to live monitoring at Control room and designated locations over the LAN using the latest technology such as **Tri- Stream technology** enabling high quality video recording over network at the SAN and lower resolution transmission to networked PCs at rates that won't cause bandwidth issues.
- b) System shall use video signals from various types of indoor/outdoor colour HD cameras (IP based) installed at different locations, process them for viewing on Workstations/monitors /Video Wall at Central Control room local control rooms and simultaneously record all the cameras after compression using H.264 / H.265 / MPEG 4 Standard. Mouse-Keyboard controllers shall be used for Pan, Tilt, Zoom, and other functions of desired cameras.
- c) **System shall have provision to include enterprise command control console (Touch screen type) in future.**
- d) System shall provide sufficient storage of all the high resolution camera (Minimum 500) continuous recordings for a period of 90 days or more @ 25 FPS at 4 CIF or better quality using necessary compression techniques for all cameras (**The storage capacity should be minimum 1200 TB usable capacity after Raid 6 configuration and scalable upto 1800 TB for 500 cameras**)
- e) System shall use a IP CMOS / MOS cameras. The video shall be compressed using MPEG-4 or H.264 or H.265 standard and streamed over the IP network, at 4CIF compression the frame rate should be 25fps (PAL) minimum. The picture quality of recorded replay should be as clear as live video without any loss of frame.
- f) The system shall be designed to make provision to accommodate additional cameras / location(s) with proposed IP VIDEO SURVEILLANCE SYSTEM.
- g) The recording resolution, motion detection and frame rate for each camera shall be user programmable at camera through VMS.
- h) The Area under surveillance shall be monitored and controlled from Central/Local Control Room(s) through workstations and must display Camera ID / Location Name for all the cameras.
- i) All the cameras should be provided with suitable surge suppressor for protection against lightening in power, signal & video lines.

- j) Housing of cameras meant for indoor use shall be of IP 55 rating whereas outdoor camera housing shall be of IP 66 or better rating. These must be integrated by the camera manufacturer. The Camera Housing & Fixtures should be of Camera OEM.
- k) All camera recordings shall have Camera ID & location/area of recording as well as date/time stamp shall be programmable by the system administrator with User ID & Password.
- l) Facility of camera recording in real-time mode (25 FPS)/15/12.5/10 or lower FPS as well as in any desired combination must be available in the system.
- m) In order to optimize the memory, while recording, video shall be compressed using H.264 / H.265 /MPEG-4 standard and streamed over the IP network. Once on the network, video can be viewed on a Control room workstation or on analog monitor using a hardware decoder
- n) System shall be pentaplex i.e. it should provide facility of Viewing, Recording & Replay, backup/ transmission and remote access simultaneously. The offered system shall have facility to export the desired portion of clipping (from a desired date/time to another desired date/time) on DVD or Pen drive. Viewing of this recording shall be possible on standard PC using standard software like windows media player etc.
- o) Central Control Room will have Video Wall with required number of workstations along with controllers for camera operation and other local control room will have clients work station with monitor. For monitoring purposes, LED Video wall shall be setup with suitable mounting arrangements, as per user requirements. Facility for viewing and controlling all the cameras at various other locations, as required, shall be provided.
- p) Database Server shall keep track of all configurations & events. This will help in proper System administration & management of redundancies etc.
- q) All the workstations in LAN should be provided with software to view and control the cameras and retrieve the recorded video images from the CAMERA SERVER / SAN seamlessly.
- r) The bidder shall propose the most suitable economical integrated system solutions.
- s) Development of an effective network to provide 100% uptime for the entire links.
- t) The system should be designed in such a manner that operational data is not lost in case of any failure of equipment or communication network.
- u) Provision of suitable disaster recovery mechanism.
- v) To protect the system from Lightning, it is the responsibility of the bidder to install required class of surge suppressor for signal, video and power cable and provide suitable earth pits along with lightening arrestor at the watch towers for all the cameras and associated hardware like switches etc. In case of any failure of component due to lightening, it will be the responsibility of successful bidder to replace the defective components during warranty as well as AMC period to make the system serviceable
- w) The functional requirement is only indicative. The system vendor shall quote the latest system available at the time of submitting the Bid.
- x) The system should have the capacity of functioning 24x7 days in Indian Conditions.
- y) The camera shall be designed for commercial/industrial 24/7/365 use based upon standard components, proven technology using open and published protocols, support for MPEG-4/H.264 & IPv6 and POE as per IEEE 802.3af standard.

- z) The camera shall be equipped with an integrated event functionality, which can be triggered by External input, Video Motion Detection, Audio Detection, Schedule, Camera tampering, Local storage full etc. Response to triggers shall include Notification, using TCP, SMTP or HTTP Image upload, using FTP, SMTP or HTTP Activating external output recording to local storage and triggering alarm appropriately.
- aa) All the fitting and fixtures for IP / CCTV camera, their cabinet, workstation computers, UPS installations/fixing at specified locations will be done by firm only as per the instruction of BRBNMPL Engineer/officials.
- bb) The proposed solution/systems shall provide seamless integration of third party security infrastructure like computer, server, and network or storage hardware, wherever possible. **The vendor shall provide the list of compatible makes and models (minimum 3) from the list of approved makes which can be integrated in the offered system.** Software shall be Open network video compliant with APIs and SDKs available in public domain without any additional charge.
- cc) The NVMS system shall be based on the latest in software programming technology. The software should be compatible with Windows Operating Systems (Windows Server 2012 or later versions) and should be user friendly. The system shall allow operation with PC Keyboard, Mouse, CCTV Keyboard (Joystick)
- dd) The NVMS shall be able to support all cameras at and up to 25 frames per seconds and 4CIF/Megapixel (up to 8 MP) resolution while maintaining less than 70% load on the Server.
- ee) The NVMS should be provided with **Failover Directory** software to avoid the single point of failure. Recording and client PC should not have the complete dependency on the directory for running operation. In the event of failure of directory as well as failover directory at least limited functions of recording and display should be continued. The NVMS should also be provided with **Failover Recording** feature.
- ff) All IP cameras shall conform to Open Network Video Interface (ONVIF) standards to ensure interoperability with network components in system-wide solutions. The cameras shall be designed to support open system communications among IP-based security devices with Storage Area Network (SAN) and Video Management System (VMS).
- gg) All IP camera shall be a combination of world-class imaging and IP networking technology. It shall support dual video streams and multiple compression formats with frame rates minimum 30 fps for NTSC and 25 fps for PAL system. The digital compression parameters for the two video streams are independently configurable.
- hh) The proposed solution should be able to generate various standard/ customized reports for event analysis / reporting purposes.
- ii) All the critical systems should provide for high availability and fault tolerance.
- jj) The IP CCTV system should be compatible to work in LAN/WAN environment for inter/intra office networking of IP CCTV system.
- kk).The Successful bidder shall ensure that the system / components / materials are as per relevant standards.
- ll) Latest revision of all applicable IE rules and other regulations shall be followed and comply with all the Safety statutory requirements while executing this work.

6. (i) APPLICABLE STANDARD :

Original Equipment Manufacturer Standard

(ii) APPROVALS :

- a) FCC
- b) UL Listed models subject to compliance to the technical specifications
- c) CE
- d) IS

7. Other Requirements :

- a) **Installation and commissioning:** Installation, commissioning and proving of performance to be carried out by the supplier at BRBNMPL Mysore site within stipulated period as early as possible, to the satisfaction of BRBNMPL.
- b) **Spares and Service Support:** Bill of material and cost of components need to be submitted along with the offer. Supplier shall attend periodical and breakdown maintenance of the system during the warranty period without any additional cost. Also, the bidder shall ensure service and spare support for minimum of Ten years and should maintain required spares at site during warranty and AMC period. Non availability of spares/standby units/components will not be accepted as a reason for waiving of penalty towards delay in rendering prompt service. For ensuring prompt service, at least minimum required spares/standby units shall be maintained at site. After use of any such spare unit/cards etc, the same shall be replenished at the earliest.
- c) All the bought out items used should be of reputed make and easily available in the Indian market and should have back to back support from the OEMs.
- d) Detailed Electrical and Mechanical drawings, technical manuals and software user licenses for all software used should be provided by the supplier including those purchased from OEMs.
- e) All the structural functional parameters should be matched one to one with existing system. However, internal construction is the discretion of supplier and it is his sole responsibility to ensure the intended performance of the proposed system up-gradation.
- f) **Documentation:** All relevant product information such as 3 sets of user manual, technical specification sheet etc. should be submitted. Also, as build diagrams & sketch, operational & Maintenance Manual (Parts catalogue, spare list, Electrical Diagram, Electrical/Electronic components details, OEM manuals etc.). Installation guides, datasheets, all software (OS, Application software etc.), installation CD's with license copies to be handed over to BRBNMPL, after commissioning.
- g) **Software License:** All Software License should be in the name of BRBNMPL.
- h) **Training to user:** Supplier shall impart proper training to the users and Technical team for trouble free operation and maintenance of the machine. The documents generated for this project is/will be sole property of BRBNMPL and should not be used/divulged for any other purpose.
- i) **Tools and Tackles:** All tools & tackles, equipments and other required facilities for un-loading, shifting of equipment to the workplace and erection & commissioning of the system shall be arranged by the contractor.
- j) The contractor shall supply the miscellaneous materials like Cables, junction box, anchor fasteners, screws, bolts and nuts, clamps, suitable angles, cable ties etc. for

cable laying and carry out associated minor works for successful completion of work. Contractor shall do any other related jobs that are not mentioned above, but found necessary at the time of execution to complete the job in all respect.

- k) The bidder must provide a valid certificate of authorization for providing after sales service for all the Third Party Equipments / Systems supplied from the OEM. The certificate should be in the letter head of OEM issued on the name of bidder and currently valid.
- l) **Modifications:** Supplier shall agree for any minor modifications in system upgradation (without having any additional financial implications) to match with specific requirement of BRBNMPL.
- m) **Final Acceptance Test (FAT) and Final Acceptance Certificate (FAC):**

The Upgraded system shall be tested for 15 days in real working environment and Final Acceptance Certificate will be issued based on the satisfactory performance during the FAT.

FAT shall include but shall not restrict to the following tests :

- I) Testing of redundancy of Layer 3 Switch
 - II) Testing of redundancy of uplinks between Edge, L2 and L 3 Switch
 - III) Testing of redundancy of Management Servers
 - IV) Testing of redundancy of Recording Servers
 - V) Testing of hard disc failure in Raid6 Configuration of storage
 - VI) Testing of Usable capacity of Storage both in camera server & SAN
 - VII) Testing of video analytics, Facial recognition, ANPR, UVSS
 - VIII) Checking of PTZ controls of PTZ camera
 - IX) Checking of recording, playback & other various features randomly
 - X) Checking of recording video quality, Frame rate.
 - XI) Checking of all software server & client has been installed correctly & running without any bug/error, Testing of the functionality of the VMS features including Recording, retrieval of footages etc..
 - XII) Testing of parallel recording both at camera servers and SAN storage
 - XIII) Testing of Camera edge recording during failure of Network/camera servers etc.
 - XIV) Testing of OFC Network with standard testing procedure and submission of report.
- n) **The bidder shall visit the site for inspection and understanding the requirements before quoting.**
 - o) **The bidder must submit a “Proof of Concept” along with the Technical Bid and give a live demo on the “Proof of Concept” during the Technical Evaluation in order to prove efficiency of the system and to comply all the Tender requirements.**
 - p) Supplier shall fill the compliance formats and submit along with technical bid without fail. **The reply to points shall be specific and they should not write like “Refer catalogue”, etc.,**

8) Un-priced BOQ - NOT TO BE QUOTED

Name of work: Design, Supply, Installation, Testing and Commissioning of IP CCTV Surveillance System and implementation of Video analytics at BRBNMPL, Mysuru.

Sl.No.	Item	UOM	Qty
	CCTV UPGRADATION		
1.	IP Bullet Cameras 2 MP (Fixed IR) with Varifocal Lens including 128GB of SD card, Housing, fixtures, Power supply, Patch cards etc (Indoor)	Nos.	280
2.	IP Cameras 2 MP with PTZ with IR including 128GB of SD card, Housing, fixtures, Power supply, Patch cards etc (Indoor and Outdoor)	Nos.	80
3.	Camera Server for recording the video of IP cameras with 07 days back-up (50 cameras per server, 9+1 standby) including required accessories.	Nos.	10
4.	VMS Software with 600 Camera licenses for Life time	Nos.	1
5.	Video Wall with 40" LED monitors (Min. 12 Nos.) Industrial grade and required no. of Client PCs with multi monitoring feature for live viewing and Video Analytics monitoring (Including Powder coated Frame work and accessories)	lot	1
6.	L3 switch - Fully Loaded with accessories including LIU, SFU Modules, Patch cords, Pig tails etc	Nos.	1
7.	L2 Switch - Fully Loaded with accessories including LIU, SFU Modules, Patch cords, Pig tails etc	Nos.	4
8.	Edge Switch - Fully Loaded with accessories including LIU, SFU Modules, Patch cords, Pig tails etc	Nos.	25
9.	10G SFU Modules	Nos.	12
10.	1G SFU Modules	Nos.	50
11.	OFC Cable (12 Core) with accessories	Mtrs	2000
12.	Power Cable 2.5Sq MM 3 Core, PVC Armoured	Mtrs	1500
13.	Cat 6a Cable	Mtrs	25000
14.	Cat 6a Cable Armoured	Mtrs	500
15.	OFC Cabling charges with conduit/Cable tray	Mtrs	2000
16.	Power Cabling charges	Mtrs	1500
17.	Cat 6a Cabling charges with conduit/Cable tray	Mtrs	25000
18.	Cat 6a Armoured Cabling charges including Cable Trenching	Mtrs	500
19.	POE switches . 12 Port	Nos.	10

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20.	Camera Mounting Pole (15 feet Minimum above Ground level) with required accessories and junction boxes	Nos.	10
21.	Earth pits as per IE Standards	Nos.	10
	SERVER UPGRADATION		
22.	VMS/Backup Application Server for Camera Recording including back-up application software with required license.	Nos.	2
23.	Back-up SAN Storage for Camera Recording for 90 days back-up. Minimum 1200 TB usable capacity expandable upto 1800 TB	No.	1
24.	Equipment Rack (42U, closed network rack) with accessories.	No.	2
25.	Equipment Rack Wall Mount (19U, network rack) with accessories.	No.	4
26.	Equipment Rack Wall Mount (6U, network rack) with accessories.	No.	25
	VIDEO ANALYTICS		
27.	Video Analytics Software with License for 100 Cameras	No.	1
28.	Video Analytics Processing/Application Server	No.	2
29.	Facial Recognition Server with Software and Licence	No.	1
30.	Video Analytics monitoring Station	No.	1
31.	ANPR & UVS Software, Server and Monitor with Licence (ANPR- 4, UVS – 1)	Set	1
32.	IP NW 3 Megapixel Fixed Camera (Outdoor), including 128GB of SD card, Housing, fixtures, Power supply, Patch cards etc	Nos.	28
33.	IP NW ANPR Camera	Nos./Set	4
34.	UVS System with required Cameras	Set	1
35.	Surge Protection for cameras - 8/20 μ s (IEC Standard 61643-11)	Nos.	90
36.	Applicable Licenses if any	Lot	1
37.	Any other Items/ Equipment/ Instruments/ software etc required if any which are not mentioned above and required for the project (Pl. mention)	Lot	1
38.	Supply of required materials and accessories for installation of the equipments, devises etc as per above BOQ	Lot	1
39.	Installation, Testing and commissioning charges of all equipment, Network and components etc. (Sl. No. 1 to 35) and Training	Lot	1
40.	All Civil works including making through Holes on walls, Plastering, Painting, welding etc. for executing the work.	LS	1
41.	Charges for Packing, forwarding and insurance if any.	LS	1

Note: The above BOQ is tentative only. Bidder should understand the requirement and design the system. Accordingly, they should include any additional BOQ required & higher end specification system requirement and quote their offer accordingly. They should also prove the Proof of Concept (POC) of the design and offer they propose and quote.

9) Detailed Technical specifications:

All the vendors must attach the point by point compliance for below specifications in their technical bid.

9.1) IP Network Megapixel Fixed Camera for Indoor Preferable Make: Bosch/Honeywell/Pelco/Samsung/Panasonic

S.No.	Parameters	Technical Specifications	Compliance (YES/NO)
	Bullet Camera		
1	Image Sensor	1/2.8" Progressive CMOS/MOS	
2	Resolution	1920x1080, 1080p (>2 MP), 2048 x 1536	
3	Minimum Illumination	0.01 lux color/0 lux with IR LED On @ F1.6	
4	Lens	3 mm to 9 mm Motorized Focus/Zoom Lens	
5	Back Light Compensation	BLC/ HLC	
6	Motion Detection	On/ Off	
7	Wide Dynamic Range	True WDR; Min 130 dB	
8	Day/ Night	Auto/ Color/ BW, True Day/Night with ICR	
9	Shutter Speed	1/10 to 1/10000 Sec	
10	Noise Reduction	3D Noise Reduction (3DNR)	
11	IR Illumination	Built-in Adaptive IR LEDs with minimum 40m illumination	
12	Privacy Mask	Mask upto 4 areas of a scene from view and record	
13	Video Compression	H.264, H.265, MJPEG	
14	Video Streams	Minimum 3 streams (2 Configurable Primary Streams & 1 Service stream) Primary Streams: 1080p/ 720p/ D1 @ 25/30 fps Service Stream: 720p/D1/CIF @ 25/30 fps	
15	Network Protocols	IPv4/IPv6, HTTP, HTTPS, TCP/IP, UDP, UPnP, ICMP, IGMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, QoS, SNMP v2c/v3, RTCP,	
16	Security	User account and password protection , SSL/TLS Communication with CA Certificate, IEEE 802.1x	
17	Supported open Protocol	ONVIF Profile S & G	
18	Onboard Storage	upto 128 GB Micro SD Card	
19	Onboard Recording Type	Event trigger recording Continuous and scheduled recording Automatic recording when network fails	
20	Event	Motion Detection, Video Tamper, Network	

		Disconnection	
21	Event Notification	Record in SD Card/ FTP, Relay Output, Snapshot	
22	Alarm Input/ Output	2 Inputs, 1 Output	
23	Power Source	12VDC $\pm 10\%$, 24VAC $\pm 10\%$ 50Hz, PoE IEEE 802.3af	
24	Operating Temperature	-10°C to 55°C or better	
25	Operating Humidity	< 95% RH (non-condensing)	
26	Vandal Resistant	IK10	
27	Ingress Protection	IP66	
28	Regulatory	UL, EN, FCC	
29	Housing & Fixture	Required Housing & Fixture to be supplied. Camera, Housing & Fixture should be of same make	

9.2) IP Network Megapixel PTZ Camera for Indoor/Outdoor application
Preferable Make: Bosch/Honeywell/Pelco/Samsung/Panasonic

S.No.	Parameters	Technical Specifications	Compliance (YES/NO)
	Outdoor PTZ		
1.	Image Sensor	1/2.8" Progressive CMOS,MOS	
2.	Resolution	1920x1080, 1080p (>2 MP)	
3.	Minimum Illumination	0.005 lux (color) / 0.0005 lux (B/W) @ F1.4; 0 lux IR on	
4.	Lens	Varifocal 4.5 mm to 129 mm	
5.	Angle of view	63.7 degree wide – 2.3 degree Tele	
6.	Optical Zoom	30x	
7.	Digital Zoom	12x	
8.	Back Light Compensation	BLC/ HLC/ WDR	
9.	Motion Detection	On/ Off	
10.	Wide Dynamic Range	True WDR; Min 130 dB	
11.	Day/ Night	Auto/ Color/ BW, True Day/Night with ICR,	
12.	Shutter Speed	1/1 to 1/10000 Sec	
13.	Noise Reduction	3D Noise Reduction (3DNR)	
14.	Electronic Image Stabilizer	On/ Off	
15.	IR Illumination	Built-in IR LEDs with Min. 150 m illumination	
16.	Pan Travel	360 degree endless	
17.	Tilt Travel	-10 to 90 degree, Auto Flip 180 degree	
18.	Preset	250	
19.	Preset Accuracy	0.225 degree	
20.	Privacy Mask	24	
21.	Video Compression	H.264, H.265, MJPEG	

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22.	Video Streams	Minimum 3 streams (2 Configurable Primary Streams & 1 Service stream) Primary Streams: 1080p/ 720p/ D1 @ 25/30 fps Service Stream: 720p/D1/CIF @ 25/30 fps	
23.	Network Protocols	IPv4/IPv6, HTTP, HTTPS, TCP/IP, UDP, UPnP, ICMP, IGMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, QoS, SNMP v2c/v3, RTCP,	
24.	Security	User account and password protection , SSL/TLS Communication with CA Certificate, IEEE 802.1x	
25.	Supported open Protocol	ONVIF Profile S & G	
26.	Onboard Storage	upto 128 GB Micro SD Card	
27.	Onboard Recording Type	Event trigger recording Continuous and scheduled recording Automatic recording when network fails	
28.	Event	Motion Detection, Video Tamper, Network Disconnection	
29.	Event Notification	Record in SD Card/ FTP, Relay Output, Snapshot	
30.	Alarm Input/ Output	2 Inputs, 1 Output	
31.	Audio Input/ Output	1 Input, 1 Output	
32.	Audio Compression	G.711/ G.711Mu	
33.	Audio Stream	Full Duplex, Simplex	
34.	Power Source	24VAC \pm 25% 50Hz, High PoE (Class 5)	
35.	Operating Temperature	-10°C to 55°C or better	
36.	Operating Humidity	< 90% RH (non-condensing)	
37.	Vandal Protection	IK-10	
38.	Ingress Protection	IP66 (Rugged Outdoor Housing)	
39.	Regulatory	UL, EN, FCC	
40.	Housing & Fixture	Required Housing & Fixture to be supplied. Camera, Housing & Fixture should be of same make	

9.3) Camera Server

Preferable Make: HP/DELL/IBM/Pelco/Milestone

Sl. No	Parameter	Technical Specifications	Compliance (YES/NO)
1.	Processor	Intel Xeon E5-2630 v3 - 2 Nos.	
2.	RAM	24 GB	
3.	Internal storage	SSD-256GB (Min) or 2 x 600GB SAS (10k RPM) configured as RAID1 for OS & Application	
		12 TB (10k rpm) usable capacity on RAID 10 SAS Drives for Live Video Storage	

4.	Network Interface	4 Nos 1 Gbps Gigabit Ethernet ports	
5.	HBA interface	Dual Port PCI-e FC HBA	
6.	Operating System	Windows 2012 R2 Std Edition 64 bit SP2. License Copy would be in the name of BRBNMPL.	
7.	Licensed Software	Microsoft SQL/SQL standard edition etc.	
8.	Power Supply	Dual Redundant Power Supply	
9.	Form Factor	Rack	

9.4 VMS / Application Server

Preferable Make: HP/DELL/IBM /Pelco/Milestone

SI No	Parameter	Technical Specifications	Compliance (YES/NO)
1.	Processor	Intel Xeon E5-2630 v3 - 2 Nos.	
2.	RAM	24 GB	
3.	Internal storage	SSD-256GB (Min) or 2 x 600GB SAS (10k RPM) configured as RAID1 for OS & Application	
		4X 600GB SAS (15k RPM) on RAID 10 SQL DB and Transaction Logs	
4.	Network Interface	4 Nos 1 Gbps Gigabit Ethernet ports	
5.	HBA interface	Dual Port PCI-e FC HBA	
6.	Operating System	Windows 2012 R2 Std Edition 64 bit SP2, License Copy would be in the name of BRBNMPL	
7.	Licensed Software	Microsoft SQL/ SQL standard edition/ etc.	
8.	Power Supply	Dual Redundant Power Supply	
9.	Form Factor	Rack	

9.5 SAN Storage

Preferable Make: HP/DELL/IBM /Pelco/Milestone / EMC/ Netapp

Sl.No.	Feature	Required Product Specifications	Compliance (Yes/No)
	High Availability and Storage Processors	<ul style="list-style-type: none"> ▪ The Proposed Solution should be a Hybrid Storage System with concurrent support for SAN, iSCSI and Fiber Channel protocols configured with dual redundant Active-Active Controllers ▪ Each Controller must have Intel E5-2600 	

		<p>10 Core Processors per controller or equivalent and 64GB Memory.</p> <ul style="list-style-type: none"> ▪ The Proposed Solution should be based on real time optimized operating system. (It should not be a general purpose OS). ▪ Must provide five 9s availability (99.999%) 	
	Memory and HDD Support	<ul style="list-style-type: none"> ▪ The controllers should have 128GB memory spread across dual controllers. ▪ The Proposed Solution should be scalable to more than 490 Drives in the same Storage Array without upgrading the controllers. ▪ The Storage System should support the latest SSD, SAS and NLSAS Drives 	
	Host Connectivity and Storage Backend Disk Connectivity	<ul style="list-style-type: none"> ▪ The offered Storage System shall be supplied with at least 8nos of 10Ge Optical Ports or 4nos x 16Gbps FC ports across dual Controllers for Host Connectivity. ▪ The array proposed should have a minimum of 4nos x 12Gbps 2.0 SAS backend architecture. 	
	Total Aggregate Storage Bandwidth	<ul style="list-style-type: none"> ▪ The Proposed Storage System should ensure a minimum total aggregate bandwidth of 5000Mbps on a 90% Write & 10% Read Video Management Application Workload. 	
	RAID Support	<ul style="list-style-type: none"> ▪ Storage System to be configured with RAID 6 protection and Global Hot Spares. 	
	VMS Validation on the Storage System	<ul style="list-style-type: none"> ▪ The Proposed Storage System should be tested and validated jointly by the VMS Application OEM & Storage OEM. The Validation white paper for the same to be submitted as a part for the Storage System Compliance documentation. 	
	Storage Capacity Requirements	<p>The Proposed Storage System should be configured with Minimum 1200TB Usable Capacity using minimum 6TB NL-SAS Drives. The usable capacity is defined as the Net storage capacity available for the application stack, after deducting the penalties imposed by storage infrastructure requirements, disk and array formatting, RAID penalties, host OS and file system formatting including overheads or any other penalties which eat away usable disk space. Drives offered for the above capacity can be of the Highest Capacity offered by the Vendor.</p>	

	Statement of Compliance	This Information Technology Equipment is compliant with the electromagnetic compatibility (EMC) and product safety regulations/standards required by the countries in which the product is sold. EMC compliance is based on FCC part 15, CISPR22/CISPR24 and EN55022/EN55024 standards, including applicable international variations. EMC compliant Class A products are marketed for use in business, industrial, and commercial environments. Product Safety compliance is based on IEC 60950-1 and EN60950-1 standards, including applicable national deviations.	
	Storage Software Licenses	All the standard Storage Software Licenses like Unified Storage Management software for File, Block & vVOLs, Snapshots, Remote Replication, Performance Optimization, Thin provisioning, QOS, Proactive Remote Support to be included.	
	Server Operating System Support	<ul style="list-style-type: none"> Windows Server 2008, Windows Server 2008 R2+, Windows Server 2012, Windows Server 2012 R2, Microsoft Hyper-V, Novell Suse Enterprise, Oracle, RedHat Enterprise, & x86 VMware® vSphere 	
	IDC/Gartner/IHS Top 5 Listed	<ul style="list-style-type: none"> The Storage System OEM should be listed in the Top5 of IDC/Gartner/IHS Year 2015 or latest Report. 	
	Storage Validation Test report	Storage OEM should have a test & validation document supporting the bandwidth mentioned with the VMS application supplied by the bidder	

9.6. VMS Client Work station

Preferable Make: HP/DELL/IBM

Sl. No	Parameter	Specifications	Compliance (Yes/No)
1	Processor	Intel Core i7-4960X processor @ 3.6 Ghz	
2	RAM	32 GB	
3	Internal storage	500GB SATA 3.0Gb/s	
4	Network Interface	2x10/100/1000	
5	Optical Drive	Single drive : DVD +/-RW+CD-RO	
6	Graphics	2 GB Graphic Card NVIDEOA	
7	Display	21" LED screen Full HD	
8	Keyboard & Mouse	USB based	
9	Port	Minimum 4 Nos USB ports, VGA ports – As per Video wall design	

10	Operating System	Microsoft Windows 7 Professional or Latest	
11	Cabinet	Tower	

9.7) VMS Software

Preferable Make: Honeywell/Milestone / Pelco/ Bosch/ IBM

Sl. No	Particulars	Specification	Compliance Yes/No
1.	Enterprise and Scalable Management Platform	<p>The VMS shall be an enterprise solution and scalable to support unlimited number of cameras.</p> <p>VMS should support latest Windows Server operating system on Server machine. It should support latest Windows OS on Client machine, independent of what operating system is there in the servers. VMS should support SQL/ MySQL/ Oracle DBMS.</p>	
2.	Distributed Architecture and Openness	<p>The VMS shall support distributed video architecture which seamlessly integrates the video operations of numerous systems onto one virtual platform, allowing security operators to view and control all cameras, whether across a single facility or across the multiple locations.</p> <p>The VMS shall support seamless integration with other security and safety equipment / systems like Fire Alarm System, Access Control system, Perimeter Protection System etc so as to monitor on the GUI, alert and automatically focus the nearby CCTV camera towards the area of alarm/incident.</p> <p>The VMS shall support ONVIF S profile and integrate all cameras supporting ONVIF S profile.</p>	
3.	Standards for Software	The VMS shall be designed and developed to the approved National and International standards	
4.	Server-Client Architecture	<p>The VMS shall Manage and support Enterprise Database servers, Recording Servers, Analytics Server, Storage and Operator workstations.</p> <p>The VMS shall support minimum 2500 cameras managed per Enterprise Database Server. Systems shall be scalable by adding additional Servers.</p> <p>The VMS shall support Analytics Servers dedicated to analyze video streams. The Analytics Servers shall process the live video using preconfigured rules and Intelligent Video Analytics algorithms to determine events of interest.</p>	
5.	Fault Tolerant Architecture and Redundancy	<p>The database server shall provide a central fault tolerant repository for all configurations and run time information for the complete system.</p> <p>The VMS must be capable of running a pair of similarly configured Database Servers in a hot backup configuration where at any point in time, one is the acting Primary and the other is acting as the Hot</p>	

		<p>Backup. The backup Database Server shall be continuously synchronized with the master Database Server to ensure that it is always up-to-date and ready for a fail- over, when required. The failover for Database Server should be seamless and should not affect recording of cameras.</p> <p>It must be possible to remove one of the redundant systems for maintenance without interrupting operation, and upon its reinstatement, automatically re-synchronize the databases, again without interruption to system operation.</p> <p>The VMS shall support Primary and Backup Recording Servers allowing N:1 to N:N Redundancy. The failover and roll back mechanism between Preferred and Backup Camera Servers shall be configurable and support both automatic and manual operation. The failover process for Recording Server should not take more than 10 sec. for Hot standby server. The VMS should include multicast and multi streaming supported. The system shall automatically switch to unicast, if client fails to connect to the multicast system.</p>	
6.	Concurrent Web Clients and Console Stations	<p>The VMS shall provide Internet Explorer, Chrome & Mozilla Clients for users other than Operators in Command & Control Room. These clients will be used for viewing of cameras by Security Officers and other authorized users other than in Command & Control Room.</p> <p>The VMS shall provide a professional level Surveillance Console interface for control room operators. Its primary role shall be to meet the operational requirements related to surveillance.</p>	
7.	Operational Features of VMS	<p>The VMS console shall have a Navigation Pane that include separate tabs to display available cameras, Views, groups and locations available to the operator based on their security settings. It shall include a Multi-level camera tree with built-in filter search capability. It shall support user defined logical groups.</p> <p>The VMS shall have flexible workspace with simultaneous display of Live and Recorded video from the same or different cameras. Information describing the camera and associated video shall be shown in the tile including camera name, camera number, camera health status and whether the camera is currently recording, replaying video, paused or playing live video.</p> <p>The VMS shall have Wild-Card search feature for cameras in Camera Tree and Groups.</p> <p>The VMS console shall have a timeline control to display and play back recorded video for one or more cameras. Playback shall be possible on 1 or more cameras simultaneously for all cameras currently displayed in the Video Workspace.</p>	

		<p>The Timeline toolbar shall include Play, Pause, Snapshot, Fast Rewind (upto 16x), Frame Rewind, Fast Forward (upto 16x), Frame Forward, Jump Back, Motion Search and Calendar Control as standard features.</p> <p>The timeline will also have zooming and scrubbing feature for easy analysis of recorded videos.</p>	
8.	Edge Recording and Backfill	<p>The VMS shall support edge recording of video on SD card inside the camera in case of network connectivity between camera and VMS is down. The VMS shall support restoration of edge recorded video in the VMS storage once the network connectivity between camera and VMS is up.</p>	
9.	Digitally Signed Export of Camera Videos	<p>The VMS shall support export of video for evidentiary purposes. It shall be possible to select the portion of video required and export only that portion in Windows Media Format and Native Format.</p> <p>The VMS must support all exported recordings and exported audit logs to be digitally signed to prove authentication (origin of the recording and audit log) and integrity (exported recording and audit log have not been altered or tampered with).</p> <p>The VMS system shall provide a default digital certificate for signing the exported recordings and audit logs. Customization shall also be provided to allow for the user to supply his/her own digital certificate.</p>	
10.	Camera Temper Detection Feature	<p>The VMS shall support temper detection of alarm for the connected cameras/ Analytics Server. Temper detection shall include changed field view, camera blurred and camera blinded</p>	
11.	PTZ Camera Control	<p>The VMS shall support Area configuration to allow users to view specified cameras only.</p> <p>The VMS shall support Control Level determining if a user is allowed to operate the PTZ Controls for a camera.</p> <p>The VMS shall support Control Reservation Period allowing if a particular user has controlled the camera no other user can control the camera until this reservation period has expired. Users with a higher security level shall be able to take control of the camera at any time.</p>	
12.	Recording and Archiving of Camera Videos	<p>The VMS should support multiple streaming and parallel recording of cameras.</p> <p>The bidder has to provide sufficient storage inside the recording servers to record all cameras for 7 days at 1080p, 25 fps, H.264, H.265 compression. Parallely the video recordings shall be stored in the SAN storage also for 90 days back up.. In case of loss of video to SAN storage due any failure, there should be provision to</p>	

		<p>sync and update the data from camera server for the failure duration.</p> <p>User can manually extend the retention period for important video recording by overriding normal video retention.</p> <p>The VMS shall provide the ability to automatically archive all recordings. It shall be possible to automatically archive any type of recording at a preconfigured period after the recording has completed. It shall be possible to modify the automatic archive setting for each recording individually, as required</p> <p>The VMS shall support continuous background recording, scheduled recording, event activated recording and user activated recording for all connected cameras</p>	
13.	Search and Playback of recorded Videos	<p>The VMS shall provide a simple search for all video recorded. The user selects the time indicator which shows a calendar and time line. The user selects the required search period. Once the time criterion is entered, the “search” is selected. Video recorded during the selected period will be returned by the search.</p> <p>The VMS shall provide an advanced search of recorded video. The search shall be based on recording time, camera and recording details.</p> <p>It should be possible in VMS to merge recorded video sequences from different or overlapping time intervals from different cameras to one and same the export. It will provide a consolidated video evidence for a complete overview of incidents.</p>	
14.	Digital Zoom and Video Recording on live video client	<p>The VMS shall support the ability to digitally zoom into an area of the image as well as provide the ability to enhance the image viewed by adjusting the levels of brightness, contrast, noise levels and sharpness through camera Web page fro live video.</p> <p>VMS client should support Hardware Acceleration feature by using the GPU for video decoding to bring down the CPU utilisation and support more number of cameras on any given workstation.</p> <p>Client software should be able to overlay the following information on every video panel:</p> <ol style="list-style-type: none"> 1. FPS 2. Codec info 3. Resolution 4. Multi-cast status 5. Hardware Acceleration Status 6. Lost Frames 7. Motion Detected 8. Camera nomenclature (Camera name, Location etc.) 	

15.	Alarm Module	<p>The VMS shall have integrated Alarm Module for video system and analytics alarms.</p> <p>The Alarm module shall have Alarm and Event summary with Video Clip attached.</p> <p>The Alarm module shall provide Audio Alert in different audio tones for Low, High and Urgent priority alarms</p> <p>The VMS shall have the feature to pop-up video from the camera on a dedicated alarm monitor in case of an alarm is generated in that camera. The cameras will be queued in sequence in case of multiple alarms till they are acknowledged by the operator.</p> <p>The alarm support shall allow for continuous monitoring of the operational status and event-triggered alarms from servers, cameras and other devices.</p> <p>VMS should be capable to raise alarm in the following cases:</p> <ol style="list-style-type: none"> 1. Storage Disconnection / Unavailability 2. Camera video loss 3. Recording Server Unavailability <p>A bookmarking feature shall be included in the Video Management System, allowing the client viewer users to mark incidents on live and/or playback video streams.</p>	
16.	Diagnostic Module	<p>The VMS shall provide diagnostic modules to assist with system health assessments and collection of diagnostic information.</p> <p>The Diagnostics applications shall provide a unified user interface for running tests, recording system activity, collecting diagnostic information and viewing system log files.</p> <p>It shall be possible to collect diagnostic information on all components of the VMS application including Database Servers, Recording Servers, Clients and network activities.</p>	
17.	Report Management System	<p>The VMS shall have an integrated Alarms, Alarm Management and Reporting module which can create any desired reports at any incidence.</p>	
18.	Map Function	<p>Built-in map function in the client viewer shall provide an intuitive overview of the system and shall offer integrated access to all system components.</p> <p>VMS should support GIS Map, CAD online Maps (Google Maps, Bing and Open street Maps). Map function shall be able use standard graphical file formats including jpg, gif, png, tif etc.</p> <p>It shall be possible to use any number of layered maps, and it shall be possible to easily drag-and-drop</p>	

		<p>and point-and-click definition of cameras, servers, microphones, speakers, I/O devices, hot-zones, and PTZ camera presets.</p> <p>Hot zones shall be allowed for intuitive navigation between different map levels.</p> <p>Map function shall support central overview of the surveillance system via an alarm list containing alarm indicators of high, medium or low prioritized alarms.</p> <p>Furthermore the alarms shall be categorized by the following states; new, in progress, on hold, or closed.</p> <p>Alarms must be possible to acknowledge by right-clicking elements on maps.</p>	
19.	System Monitor & Configuration Report	<p>The system monitoring feature shall make it possible to view system information and create reports on:</p> <ol style="list-style-type: none"> 1. Management servers (show CPU and memory usage) 2. Recording server (show CPU and memory usage and usage data for disks, storage, networks and cameras) 3. Failover servers (show CPU and memory usage) 4. Additional servers (show CPU and memory usage on log servers, events servers, and so on. 5. Cameras (such as camera status, if the individual camera is recording, the recording server the camera is connected to and more) <p>The VMS solution shall support a functionality to generate a PDF that shall document all parts of the system configuration, including preview of video.</p>	
20.	Intelligent Video Analytics	<p>The VMS shall Support an integrated Intelligent Video Analytics system from same or other OEM.</p> <p>Events from the Intelligent Video Analytics system shall be passed back to the VMS to start a recording and generate an alarm of configurable priority.</p>	

9.8) Video Analytics Features required:

(Preferable make- Honeywell/Bosch/Verint/ Pelco /Genetec / Videonatics)

Sl. No.	Parameters	Technical Specifications	Compliance (Yes/No)
1.	Facial Recognition / People Identification	It should Automatically identify or verify a person from a digital image or a video frame from a video source.	
2.	Video Motion Detection	<p>It should detect & generate alarm when motion is occurred on a continuous basis or scheduled for particular times, dates, days, months etc..</p> <p>Action to be perform when motion is Detected:</p> <ul style="list-style-type: none"> . Detects and track objects within the camera coverage area. . Learn scene . Pre-Record duration . Post-Record duration . Archive & Delete motion detection activated recordings after specified period. 	

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3.	Perimeter Intrusion	It should detects & generate alarm when people, vehicles, and other objects approaching or entering into secured area. Action to be performed when Perimeter Intrusion is Detected: . Detects and track objects within the camera coverage area. . Learn scene . Pre-Record duration . Post-Record duration . Archive & Delete motion detection activated recordings after specified period.	
4.	Auto Tracking / People Tracking	Continuous tracking of particular /non- identified people Alert the security person at control room Continuous Recording	
5.	Unattended Object Detection	It should detect & generate alarm when objects that are left unattended for a specified period of time.	
6.	Object Removal	It should detect & generate alarm when the removal of stationary objects.	
7.	Camera Tampering	It should automatically identify & generate alarm when a specific camera field view is altered, blurred image, Camera blinded or covered.	
8.	Image Stabilization	It should obtain sharp, blur-free images associated with the motion of a camera during exposure.	
9.	No. of cameras on which Video Analytics to be implemented initially.	a) Facial Recognition / People Identification –04 Cameras (Dual lens IP cameras) b) All other video analytics features – 20 fixed IP Network cameras, depends upon the applicability.	

**9.9) Video Analytics & Facial Recognition Processing/Application Server:
(Preferable make- HP/DELL/IBM)**

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Model	specifications: Intel Xeon E5-2695v3 or better, 2.3 GHz, 14 core, 35 Mb cache Memory bus speed 1333 MHz or better	
2.	Server Type	Rack mounted server	
3.	RAM	64 GB RAM, Windows Server/7/8 OS with separate Graphics card of Intel/NEVEDA 1 GB for Video Analytics and 2 Tsla K40Fipup for Facial recognition processing.	
4.	Ports	4-USB 3.0 & RJ-45	
5.	Monitor	24” LED , Make :Dell/HP with IPS panel	
6.	Keyboard	12 function Keyboard	
7.	Mouse	3 Button optical scroll mouse with Pad.	
8.	Disk	600 GB x 4 Nos.=1.2 TB HDD,02 Nos. with Mirroring and stripping	

9.	Licensed Software	Windows Operating System, Microsoft SQL Server software, Microsoft SQL Server database files, MS Office, VMS Transaction Log	
10.	Network Interface Card	4 *1GBPS Onboard NIC	
11.	Network Redundancy	Team application or equivalent should be used for Network redundancy	
12.	Operating system	Licensed Windows Server 2012 (64bit) (Standard Edition)	
13.	Additional Software	IIS Components, MS Office compatible to OS, DirectX 9	
14.	Browser	Internet Explorer latest version	
15.	Antivirus Software	McAfee Virus Scan (Latest Version)	
16.	DVD-RW Drive	Yes	

**9.10) Video Analytics Monitoring Work Station:
(Preferable Make: HP / IBM/ DELL/ACER)**

Sl.No.	Particulars	Specification	Compliance Yes/No
1.	Processor	Intel 6 th Generation I5 3.0 GHz or more 1 MB Cache and 1333 Mhz FSB min. or higher	
2.	RAM	4GB 1333 MHz	
3.	Operating System	Windows 64 bit Operating System	
4.	Hard disk.	1TB SATA Hard disk	
5.	DVD-RW Drive	16X DVD writer	
6.	Monitor	21" LED Color Monitor Full HD.	
7.	Keyboard	12 function Keyboard	
8.	Mouse	3 Button optical scroll mouse with Pad.	
9.	Other Features	On board sound, and External Speakers , VGA.	
10.		Integrated Gigabit Ethernet Controller	
11.		Energy Star Rated (not less than 3star)	
12.		Onboard dedicated dual video support Graphic card	

**9.11 . IP NW Megapixel Fixed Camera Out Door: (FOR Video Analytics & Facial Recognition)
(Preferable Make: Bosch/Mobotix/Axis /Pelco / Honeywell/Samsung/Panasonic)**

Sl.No.	Particulars	Specification	Compliance Yes/No
1.	Image sensor	1/2.8” progressive scan CMOS, MOS (3 megapixel or Higher)	
2.	Lens	Lens f=5.1 - 51 mm, F1.8 - 2.1, autofocus, automatic day/night Horizontal angle of view: 48.1° - 5.1°	
3.	Minimum illumination	0.1 lux color/0.07 lux BW @ 50 IRE, F1.2 or Better ,	
4.	IR Range	Min. 50 mtr.	

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5.	Shutter time:	Shutter time: 1/10000 s to 1/2 s	
6.	Zoom:	8x digital Zoom or higher	
7.	Video compression:	H.264, H.265 (MPEG-4 Part 10/AVC) Motion JPEG	
8.	Resolutions	HD 2048 x 1536 or higher Standard NTSC/PAL for installation	
9.	Frame rate	30/25 fps in all resolutions	
10.	Video streaming	Multiple, individually configurable streams in H.264 , H.265 and Motion JPEG Controllable frame rate and band width VBR/CBR H.264	
11.	Image settings	Compression, brightness, sharpness, white balance, exposure control, backlight compensation, rotation - including Corridor Format™, mirroring of images, text and image overlay, privacy mask	
12.	Security	Password protection, IP address filtering, HTTPS encryption*, IEEE 802.1X network access control*, digest authentication, user access log	
13.	Supported protocols	IPv4/IPv6, HTTP, HTTPS, TCP/IP, UDP, UPnP, ICMP, IGMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, QoS, SNMP v2c/v3, RTCP,	
14.	Application Programming Interface.	Open API for software integration.	
15.	Intelligent video:	Video motion detection, active tampering alarm, Gatekeeper	
16.	Alarm triggers	Video motion detection, active tampering alarm, audio detection, temperature, external input	
17.	ONVIF complaint model	Required for Offered Make/Model	
18.	Input Power Supply:	230 V AC / 24V AC /12V DC Power adaptor / POE if required to be supplied along with camera.	
19.	Operating conditions	Operating: -10°C to 55°C with Housing Storage: -10°C to 60°C humidity 15 - 100% RH (condensing)	
20.	Built-in fan/heater/sun shield for temperature changes of -40°C to +55°C with housing	Built-in fan/heater/sun shield for temperature changes of -40°C to +55°C with housing	
21.	Included accessories	Mounting and connector kits, Installation Guide, CD with installation tools, recording software and User's Manual, Windows decoder 1-user license. wall mount bracket, sunshield, cable glands, Suitable IP66 rated dust & water resistant Camera mounting fixtures.	
22.	Housing & Fixture	Required Housing & Fixture to be supplied. Camera, Housing & Fixture should be of same make	

9.12. Vehicle Entry-Exit Monitoring at Gates using Automatic Number Plate Recognition (ANPR) and Under Vehicle Scanning (UVS) System

The vehicle entry and exit are to be monitored at the gates to realizes the following functionality

A) ANPR Functionality features

Sl.No	Description	Compliance Yes/No
1.	Accurate image capture and record in real time; irrespective of the speed of the vehicles that enters / exits the premises	
2.	System should be suitable for both day and night operation with custom designed IR / White light illuminators.	
3.	System should be capable of working in both standalone and network mode.	
4.	System should support (Scalable, adaptable) for multiple license plate formats.	
5.	System should support image archiving and associated details of number plate, overview image and driver photo locally or centrally.	
6.	System should automatically validate the authorised vehicle that enter into secured premises through vehicle access control list.	
7.	System should generate alerts for the vehicle detected in the alert list.	
8.	Generating report of all vehicles that have entered/Exited during a specified time slot	
9.	List of all vehicles that are within premises (i.e. Entered but not exited yet	
10.	List of all vehicles that are within the premises for more than a user specified time limit	
11.	Incidence list of any particular vehicle showing how many times and when that vehicle has entered/exited the premises.	
12.	Search of vehicle log by Number and Part of Number, Blacklist or Whitelist	
13.	Provision to generate an Alert if a vehicle that is marked a “Not permitted” appears at the Entry/exit gate	
14.	System should have provision of manually verifying captured image plates and retrieve the same whenever required. The user should be able to enter whether the interpretation is correct or not while viewing the image. The system must keep record of user inputs.	

B) UVS Functionality features

Sl.No	Description	Compliance Yes/No
1.	The UVS system shall have Area Scan image composing technology for complete imaging of underside, even if vehicle halts on top of the UVSS.	
2.	Auxiliary cameras to see any threatening objects that are hidden on hard to view areas.	
3.	The UVSS should popup the live stitching image and provide live preview of the image as the scanning process continuous.	
4.	Feature to magnify the composite images in order to facilitate a	

	closer view of any part of the composite image.	
5.	LED lighting for uniform illumination and long durability.	
6.	IP 67 rated camera, underground enclosures	
7.	Automatic cleaning mechanism for all weather operation.	
8.	Able to withstand a total vehicle load upto 40 tons at any given point over the structure.	

9.13) ANPR Camera specifications

Sl.No.	Particulars	Specification	Compliance Yes/No
1.	Pickup Device	1/2.8” or better type CMOS/MOS Sensor	
2.	Effective Pixels	1920*1080 (2MP) or better	
3.	Scanning System	Progressive Scan	
4.	Resolution	1080p Full HD images up to 25 fps	
5.	Min Illumination	Day – 0.1lux Night – 0.05 lux	
6.	White Balance	Automatic/ Manual	
7.	Backlight Compensation	ON/OFF	
8.	Colour, Brightness, Contrast	Functionality Required	
9.	High Light compensation	Required	
10.	Electronic Shutter	1/10000 s or better	
11.	Automatic Gain Control	Auto / Manual	
12.	Day and Night functionality	Automatic, Color, Mono	
13.	Signal-to-Noise Ratio	More than 50dB	
14.	IRIS Control	DC or Automatic	
15.	Focus	Automatic / Manual	
16.	Varifocal Lens	5-50mm IR Corrected or better	
17.	IR illumination	50 mtrs range internal / external	
18.	Wide Dynamic Range	Min 130 dB	
19.	Digital IOs & Alarm input	Should be Available	
20.	ONVIF S profile compliance	Required for Offered Make/Model	

21.	Power Consumption	As per POE Standard	
22.	Mounting	Shall be on pole with stand/wall mounted/ceiling mounted with suitable brackets.	
23.	Surge/Lightening Protection	Required (Internal/External) Industrial grade	
24.	Certifications	CE, FCC, UL	
25.	Security	Password Protection, HTTPS encryption, IEEE 802.1X	
26.	Housing & Fixture	Required Housing & Fixture to be supplied. Camera, Housing & Fixture should be of same make	

9.14) UVS Camera specifications

Sl.No.	Particulars	Specification	Compliance Yes/No
1.	Pickup Device	1/2.8” or better type CMOS/MOS Sensor	
2.	Effective Pixels	1920*1080 (2MP) or better	
3.	Scanning System	Area Scan	
4.	Resolution	1080p Full HD images up to 25 fps	
5.	Min Illumination	Day – 0.1lux	
6.	White Balance	Automatic/ Manual	
7.	Backlight Compensation	ON/OFF	
8.	Colour, Brightness, Contrast	Functionality Required	
9.	High Light compensation	Required	
10.	Electronic Shutter	1/10000 s or better	
11.	Automatic Gain Control	Auto / Manual	
12.	Day and Night functionality	Automatic, Color, Mono	
13.	Signal-to-Noise Ratio	More than 50dB	
14.	IRIS Control	DC or Automatic	
15.	Focus	Automatic / Manual	
16.	Varifocal Lens	5-50mm	

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17.	LED Illumination (for UVS)	Visible LED lights	
18.	Wide Dynamic Range	Min 130 dB	
19.	Digital IOs & Alarm input	Should be Available	
20.	ONVIF S profile compliance	Required for Offered Make/Model	
21.	Power Consumption	As per POE Standard	
22.	Mounting	Shall be on pole with stand/wall mounted/ceiling mounted with suitable brackets.	
23.	Surge/Lightening Protection	Required (Internal/External) Industrial grade	
24.	Certifications	CE, FCC, UL	
25.	Security	Password Protection, HTTPS encryption, IEEE 802.1X	
26.	Housing & Fixture	Required Housing & Fixture to be supplied. Camera, Housing & Fixture should be of same make	

9.15) ANPR & UVS Server:

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Model & PC Type	Rack mounted / Tower type server with Windows Server OS	
2.	Processor	Intel Xeon E5-2695v3 or better, 2.3 GHz, 14 core, 35 Mb cache Memory bus speed 1333 MHz or better	
3.	RAM	32 GB RAM, with Graphics card of Intel/NEVEDA	
4.	Ports	4-USB 3.0 & RJ-45	
5.	Monitor	24” LED , Make :Dell/HP with IPS panel	
6.	Keyboard	12 function Keyboard	
7.	Mouse	3 Button optical scroll mouse with Pad.	
8.	Disk	1 TB x 4 Nos HDD, with Mirroring and stripping	
9.	Licensed Software	Windows Operating System, Microsoft SQL Server software, Microsoft SQL Server database files, MS Office, VMS Transaction Log	
10.	Network Interface Card	4 *1GBPS Onboard NIC	
11.	Network Redundancy	Team application or equivalent should be used for Network redundancy	
12.	Operating system	Licensed Windows Server 2012 (64bit) (Standard Edition)	
13.	Additional Software	IIS Components, MS Office compatible to OS, DirectX 9	

14.	Browser	Internet Explorer latest version	
15.	Antivirus Software	McAfee Virus Scan (Latest Version)	
16.	DVD-RW Drive	Internal DVD-RW optical Drive	

9.16) ANPR Client PC:

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Model & PC Type	Suitable Tower type PC, with Windows OS	
2.	Processor	Intel i7, 2.3 GHz, or better	
3.	RAM	8 GB RAM, with Graphics card of Intel/NEVEDA	
4.	Ports	4-USB 3.0 & RJ-45	
5.	Monitor	21” LED , Make :Dell/HP with IPS panel	
6.	Keyboard	12 function Keyboard	
7.	Mouse	3 Button optical scroll mouse with Pad.	
8.	Disk	2 TB HDD,	
9.	Licensed Software	Windows Operating System, Microsoft SQL Server software, Microsoft SQL Server database files, MS Office, VMS Transaction Log	
10.	Network Interface Card	1GBPS Onboard NIC	
11.	Network Redundancy	Team application or equivalent should be used for Network redundancy	
12.	Operating system	Licensed Windows 7/8.1 or higher (64bit) (Standard Edition)	
13.	Browser	Internet Explorer latest version	
14.	Antivirus Software	McAfee Virus Scan (Latest Version)	
15.	DVD-RW Drive	Internal DVD-RW optical Drive	

9.17) Video Wall /Industrial grade with 40” LED Monitors Preferable Make: Sony, Panasonic , Samsung, LG

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Video wall Structure	Industrial grade powder coated metal frame structure. Designed to suit the location.	
2.	No. of Display units	12 x 40” LED monitors	
	Display unit Specifications		
3.	Screen Size:	40” LED (Minimum)	
4.	Resolution:	1920 x 1080 pixels minimum.	
5.	Aspect Ratio:	16:9	
6.	Dynamic Contrast Ratio:	50,000:1	
7.	3D Colour Management:	Yes	
8.	Comb Filter:	3D Y/C (PAL & NTSC)	

9.	Intelligent Backlight Control:	Yes	
10.	Media Playback :	To support all formats	
11.	Mpeg Noise Reduction	Yes	
12.	Real Digital Picture	Yes	
13.	Auto Signal Booster	Yes	
14.	Inputs / output Ports	Composite Video + Component + RCA , HDMI , USB VGA for PC Input	
15.	Network	RJ 45 Ethernet port for LAN connectivity	
16.	Power Supply	220V AC 50 Hz	

**9.18) Layer 3 Core Switch in main control room
(Preferable make- Juniper, Cisco, D-Link, Allied Telesis, TC)**

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Architecture	Managed L3 switch, rack mountable chassis based, provided with Dual redundant Power supply and Dual redundant control & Management module. The Switch Architecture should be Distributed forwarding Architecture.	
2.	Physical Ports / Interface	a. Minimum 24 x 10/100/1000 Mbps RJ45 ports b. 32 x 10G SFP + ports c. 4 dedicated I/O slots.	
3.	Environmental Specifications:	Operating Temperature Range: 0°C to 40°C Storage Temperature Range: -10°C to 70°C Humidity: 5% to 85% RH noncondensing humidity	
4.	Auto-Negotiation	For port speed and duplex mode	
5.	Electrical Approvals and Compliances	The switch shall Comply with the all national & international standards like EN,IEC & IEEE (IEC 61850 & IEEE 1613 Complaint)	
6.	Protocol	Support for spanning tree protocol standards STP, MSTP, RSTP and VSTP Support for IEEE 802.1AB Link Layer Discovery Protocol (LLDP) The Switch should feature comprehensive IPv6 support, including IPv6 Tunnel, ICMPv6, DHCPv6, RIPng, OSPFv3, IPv4/IPv6 dual stack and more. With 10-Gigabit connectivity and IPv6 support.	
7.	Security and Management	The Switch should provide a complete set of security features (Web based & Mac based control) including L2/L3/L4 multi-layer Access Control Lists and 802.1X user authentication, Port Security	
8.	Certifications	IPv6 Ready Logo Program Approved	
9.	Switch Management	Should support Web UI, CLI via console port or Telnet WEB management, SNMP v1, v2c, v3, DHCP Relay,	

Tender document for “Upgradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features”.

		Multiple IoS Images and Multiple Configuration files	
10.	Management Stacking	Support for enhance stacking up to 24 units with single IP Address stack management	
11.	Power Supply	Internal, auto-ranging transformer: 100 to 240, VAC, 50 to 60 Hz	
12.	QoS	Should support 802.1p	
13.	Features	Should support 16K or more MAC addresses Should support 802.1AX and Cross-line card link aggregation with Servers & Switches Support for standard based G.8032 Ethernet Ring protection switching. Shall support 802.1s Multiple Spanning Tree, 802.1w Rapid Spanning Tree Should support 802.1Q Should support 4K VLAN & VLAN IDs Should support Ethernet ring protection	
14.	Features	The switch should support in built Layer 1 monitoring capability for end to end security monitoring to avoid any eve drops or security breach on the Fiber uplink links.	
15.	Features	The High available switch shall also act as an Centralized management / provisioning console for dynamic policy roll out across the switches or for selected switches in the network using instant access/equivalent technology	
16.	Features	The High available switch shall support automated scheduled back up of running configuration files from all the network switches to ensure ease of management	
17.	Features	The High available switch shall also act as an Centralized management / provisioning console to ensure Zero touch replacement of field switches across network in case of any switch failure and also ensure the last running configuration is pushed through the core switch upon successful detection of the new replaced field unit without any human intervention	
18.	Features	The Core switch should also provide the functionality of centralized Software firmware roll and management to all the switches across the network to ensure consistent software image is maintained centrally across the network switches.	
19.	Features	The Centralized Management / Provisioning console for Zero touch replacement , Dynamic Policy roll out , Dynamic Network provisioning / Centralized Software Firmware roll out shall support these technical functionalities over the LAN and WAN network	
20.	Features	For ease of integration all switches, SFP's, AP's should of same OEM	
21.	Features	The switch should be configured with existing L3 switch to provide hot redundancy	

9.19) Layer 2 Switch Industrial grade
(Preferable make- Juniper, Cisco, D-Link, Allied, TC)

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Architecture	L2 switch, commercial grade Multiple Branch out	
2.	Physical Ports / Interface	Should have atleast 24 x 10x 100/1000 Base-T RJ45 PoE supported Ports. Should have min 4 x 10G SFP ports & 10x01 G SFP Ports	
3.	Auto-Negotiation	For port speed and duplex mode	
4.	Electrical Approvals and Compliances	The switch shall Comply with the all national & international standards like EN,IEC & IEEE (IEC 61850 & IEEE 1613 Complaint)	
5.	Layer 2/3 Features	Should support 4K VLAN id's and 4K active VLAN,s, RSTP, MSTP, IGMP v1/v2,v3, IGMP/ MLD proxy,	
6.	Layer 3 Features	Should support Static routing, and scalable to support RIP, RIPng, OSPF, OSPFv3, PIM v4 SM, DM and SSM, PIMv6-SM based on network requirements	
7.	Standards	IEEE 802.3ac, IEEE 802.3az, IEEE 802.1v, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.1D,VRRPv3, PVST+ compatibility mode, I	
8.	Security	Should support ACLs, DHCP snooping, IP source guard and Dynamic ARP Inspection (DAI), MAC address filtering and MAC address lock-down, Tri-authentication: MAC-based, web-based and IEEE 802.1x, DHCPv4 (server, relay and client)	
9.	Management	CLI, GUI, USB interface for taking backup of software release files configurations, DDM – Optical digital diagnostic monitoring as per SFF – 8472 or equivalent standards, TDR, Netflow/sflow or equivalent, IPv6 Logo Ready from Day-1	
12	Features	The Switch must support IEEE 802.17 or equivalent Ring resiliency / Ring protection technology for Sub 50Ms convergence time	
		Should support Virtual Switching System (VSS) / equivalent technology for higher availability of Layer 2 and Layer 3 including video applications. Vendors should offer required cables/modules from day-1	
		The Virtual Switching System (VSS) / equivalent technology shall support virtualization of switch locally or over geographically diversified locations	
		Should support Unidirectional Link Detection (UDLD) or equivalent to detect unidirectional links caused by incorrect fiber optic wiring or port faults and disable on fiber optics interfaces	
		The switch should support in built Layer 1 monitoring capability for end to end security	

		monitoring to avoid any eve drops or security breach on the Fiber uplink links.	
		For ease of integration all switches, SFP's should of same OEM	

9.20) Edge Switch - Industrial grade
(Preferable make- Juniper, Cisco, D-Link, Allied, TC)

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Architecture	Edge switch, Commercial grade.	
2.	Physical Ports / Interface	Should have atleast 24x 10/100/1000 Mbps RJ45 PoE supported Ports. Should have min 4 x 1G SFP ports	
3.	Electrical Approvals and Compliances	The switch shall Comply with the all national & international standards like EN,IEC & IEEE (IEC 61850 & IEEE 1613 Complaint)	
4.	Layer 2 Features	Should support STP, RSTP, MSTP, IGMP v1/v2/v3 snooping, loop protection, STP root guard, Voice VLAN, loop protection, MLD snooping (MLDv1 and v2), IEEE 802.3ac, IEEE 802.1v, 16k MAC Table or more, PVST+ compatibility mode, capable to support IEEE 802.1Q	
5.	Resiliency	Should support IEEE 802.17/equivalent for sub 50ms ring protection	
6.	Security	Should support ACL, DHCP (relay and client), IP Source guard, DAI, Private VLAN, Authentication (MAC, Web and IEEE 802.3x), sflow, SSLv2 and SSLv3, TACACS+, LAG, IP precedence and DiffServ marking based	
7.	Management	CLI, GUI, USB interface for taking backup of software release files configurations, Digital optical monitoring, Time Domain Reflectometry/ equivalent, DHCPv6, DNSv6, Telnetv6 and SSHv6, NTPv6 client and server, RMON 4 groups, SNMPv3, LLDP-MED, IEEE 802.3az, IPv4 and IPv6 support	
8.	Features	Should support PoE as per IEEE 802.3af and 802.3at with PoE budget of 360W or more	
		Should support single IP management of min 24 switches for ease of management	
		The switch shall have pro-active intelligence to create an ICMP polling for service reachability based on IP address and configure pro-active action upon loss or re-establishment of the service reachability	
		The switch should support in built Layer 1 monitoring capability for end to end security monitoring to avoid any eve drops or security breach on the Fiber uplink links.	

		Should support Unidirectional Link Detection (UDLD) or equivalent to detect unidirectional links caused by incorrect fiber optic wiring or port faults and disable on fiber optics interfaces	
		Event-based triggers allow user-defined scripts to be executed upon selected system events based on Time , Date , day and Event based	
		Should inherently support operating temperature range of 0-50C	
		Should support UL, cUL, UL-EU, UL60950-1, CAN/CSA-C22.2 No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950	
9.	Make/Model Offered		

9.21) POE Switch

(Preferable make- Juniper, Cisco, D-Link, Allied, TC)

Sl.No	Particulars	Specification	Compliance Yes/No
1.	Physical Ports / Interface	Should have atleast 8 x 100 Mbps RJ45 Ports having 4 port PoE.	
2.	Interface Option	RJ 45; 10 BASE –T; 100 BASE - TX	
3.	Product Specification	MAC Address Table: 1K Switch Fabric: 1.6Gbps Transmission Method: Store-and-forward Packet Buffer Memory: 96KB	
4.	Diagnostic LEDs	Per Unit: Power / PoE Max Per Port: Activity / Link & Speed PoE port: Power / Status	
5.	Environmental Specifications:	Operating Temperature Range: -40°C to 75°C Storage Temperature Range: -10°C to 70°C Humidity: 5% to 85% RH noncondensing humidity	
6.	Network Protocol and Standards	IEEE: 802.3 Ethernet, 802.3u, 802.3x Flow Control, 802.3af	

9.22) Armoured Shielded Twisted Pair (STP) CAT 6a Cable

Sl. No.	Item	Specifications	Compliance (Yes/No)
1.	Construction	Four twisted pair, inner jacket, shield, ripcord and overall armoured jacket. The cable shall have marking of length at each meter	
2.	Conductors	23 AWG x8 solid copper conductors with HDPE insulation	
3.	Inner Jacket	PVC Aluminum foil Shield (100% coverage)	
4.	Outer Jacket	Armoured, Low smoke zero halogen FR PVC	
5.	Operating Temperature	0-50 Degree C	
6.	General Specification	Cable should give 1 gbps end-to-end solution (up to 100 mtr)	

		Should be UL/ETL tested and verified for 1 G component performance.	
		Should support applications like Gigabit Ethernet 1000 Base-T, Fast Ethernet 100 base-T, Ethernet 10 base-T, Token ring, ATM 155 Mbps, ISDN, analog (broadband, baseband) and digital Video and analog and digital voice (VOIP).	

9.23) Armoured Power Cable

Sl. No.	Specifications	Compliance (Yes/No)
1	KV grade, 3 core, 2.5 sq mm copper conductor, PVC insulated, armoured, cable conforming to IS:1554 (Part-I) with FRLS PVC outer sheath . The cable shall have marking of length at each meter. The cables shall have identification tags of connections at each end and such details shall be submitted along with documentation.	

9.24) Armoured Single Mode Fiber Optic Cable

The 12 core cable shall be 9/125micron core/cladding, single mode, Armoured Fiber Optic Cable. The cables shall have identification tags of connections at each end and such details shall be submitted along with documentation.

Sl. No.	Item	Specifications	Compliance (Yes/No)
1	Optical Fiber Cable Structure		
a	Number of core	12 cores	
b	Core material:	Germanium doped Silica glass (12 core)	
c	Cladding material:	Silica glass	
d	Mold field diameter:	9±0.4µm	
e	Cladding diameter:	125±0.7µm	
f	Coating material:	UV curable material	
g	Coating diameter:	250±10µm	
2	Optical Characteristic		
a	Attenuation at 1310nm:	≤1.0dB/km	
b	at 1550nm:	≤1.0dB/km	
c	Temperature and Humidity	The cable shall retain the optical properties, detailed in the present specification over the following condition: Working/Storage Temp.: -30oC -+70o C Humidity: 0--100%	
d	Sheath marking:	The cable shall have marking of length at each meter	

9.25) EQUIPMENT RACK-42 U

Sl. No.	Features	Description	Compliance (Yes/No)
1	Frame structure	<ul style="list-style-type: none"> Deep Powder coated Steel Frame Rack 800Wide x 2000Height x 1000D, 2 mm thick angle. Top and bottom cover with suitable no. of cutouts for cable entry. 1.5 mm thick sheet All cutouts blanked with Plastic caps. 2 pairs, 42 U height 19" L type angle, Front & rear, on Vertical Cable Trough (LH & RH) 2 Pair 	
2	Doors	Perforated Doors with minimum 75% perforation	
3	Side Panels	2000 mmH x 1000mm Deep, with foamed-on seal , Screw fixed type.	
4	Handle and Lock	Ergoform Handle with Lock Insert Key Lock Type	
5	Cooling Fans	230 Volt AC, 90 cfm, 4 Nos. on top cover	
6	Base Plinth	8000W x 1000Dx 100H with anti-vibration pads	
7	Cable route	Vertical cable trough 300 mm Wide x 1700 mm Height to manage cables	
8	Power supply	2 sets of 5/15 A, 230 V socket strip having 10 sockets/switch with 2.5 meter power chord with 16 Amp Top	
9	Accessories	Metal shunting Ring to manage the network cables. All other hardware and accessories required for housing the equipment and dressing of the cables	
10	Approvals	UL, Underwriters Laboratories /USA	

9.26) 19U Rack for Wall Mounted L2 Switch/LIU

Sl. No.	Features	Description	Compliance (Yes/No)
1	Frame structure	<ul style="list-style-type: none"> Wall Mounted enclosure with front sheet steel glass door, Top and bottom cover with suitable no. of cutouts for cable entry. Integrated side walls 1 pair of 19" angles with wall mounting provision All cutouts blanked with Plastic caps. 	
2	Lock	Insert Key type Lock	
3	Cooling Fans	230 Volt AC, 90 cfm fan with Inlet and Outlet Filter, 2 Nos. on top cover	
4	Power supply	19 “ Mountable 1 set of 5A, 230 V Universal socket strip having 6 sockets/switch with 2 meter power chord with 5 Amp Top, Cable Manager	
5	Accessories	All other hardware and accessories required for housing the switch, Air Filter for Inlet and outlet	
6	Approvals	UL, Underwriters Laboratories /USA	

9.27) 12U Rack for Wall Mounted Edge Switch

Sl. No.	Features	Description	Compliance (Yes/No)
1	Frame structure	<ul style="list-style-type: none"> Wall Mounted enclosure of dimension 600Wx 12 U x 600 D with front sheet steel glass door, Top and bottom cover with suitable no. of cutouts for cable entry. Integrated side walls 1 pair of 19” angles with wall mounting provision All cutouts blanked with Plastic caps. 	
2	Lock	Insert Key type Lock	
3	Cooling Fans	230 Volt AC, 90 cfm fan with Inlet and Outlet Filter, 2 Nos. on top cover	
4	Power supply	19 “ Mountable 1 set of 5A, 230 V Universal socket strip having 6 sockets/switch with 2 meter power chord with 5 Amp Top, Cable Manager	
5	Accessories	All other hardware and accessories required for housing the switch, Air Filter for Inlet and outlet	
6	Approvals	UL, Underwriters Laboratories /USA	

9.28) Laying of Power, CAT and Fiber Optic cable:

The cable shall be laid on wall/ceiling or above false ceiling etc. The rate quoted for cable shall also include for supply and fixing of GI saddles & spacers etc. on wall/ceiling or above false ceiling and providing other accessories as required. Rate shall also include for making required holes, if any, in brick/RCC walls, RCC Ceiling etc. and making good the same complete in all respect as required to complete the job. The cables shall be properly dressed in a neat manner. The cable shall have marking of length at each meter. The rate shall also include for termination of each end of the cables. The Power cable shall be terminated with copper lugs, glands etc. In case of CAT Cable and Fiber optic Cables, the termination shall be done by providing suitable end connectors.

10. List of Approved makes

Sl.No.	Equipment	Approved makes
1.	Video Management Software	Milestone, Pelco, Honeywell, Bosch, IBM, Gentec, Videonetics, CISCO , Godrej
2.	Video Analytics	Milestone, Pelco, Honeywell, Allgo vision, Videonetics, Godrej
3.	Facial Recognition System	NEC, Cognent, Reznitec
4.	ANPR & UVS System	NEC, Boch, Pelco, Kritikal, Secuscan, Honeywell, Polixel
5.	Servers	HP, Dell, IBM, Cisco, Milestone, Pelco
6.	Storage	HP, Dell, IBM, EMC, Netapp, Milestone, Pelco
7.	Layer -2 Network Switches	Allied Telesis, Cisco, HP, Juniper
8.	Layer -3 Network Switches	Allied Telesis, Cisco, HP, Juniper
9.	IP CCTV Cameras	Pelco, Bosch, Panasonic, Mobotix, Sony, Honeywell, Axis.
10.	Camera Lens	Pelco, Bosch, Panasonic, Mobotix, Sony, Honeywell, Axis.
11.	LED Panels	Sony , Panasonic , Samsung, LG
12.	Work stations	HP, Dell, IBM, Cisco
13.	Armoured Cat 6 cable	Tyco/Crestron/Extron/DLink/Finolex
14.	Armoured Fiber Cable	Tyco/Crestron/Extron/DLink/Finolex
15.	Power Cable	Polycab, Finolex, Havels
16.	Equipment Racks	Rittal, Dell, IBM, Netapp, APW Schneider
17.	Modular switch and sockets and I/O boxes	Anchor Roma/Legrand
18.	Rigid PVC conduit	Precision/AKG

Important point: The bidders are advised to consider and submit the quote for original models which are robust, reliable and equivalent in all respects to meet our requirement for operation of system on 24/7 basis.

Date: -
Place:-

Seal and Signature of Bidder

11. List of offered makes (To be filled in by the bidder)

Sl.No.	Equipment	Offered Make	Offered model
1.	IP Bullet Camera 2 MP Fixed Camera with IR, Varifocal lens (Indoor)		
2.	IP PTZ Camera 2 MP with IR (Outdoor)		
3.	IP Bullet Camera 3 MP Fixed Camera with IR, Varifocal lens(Outdoor)		
4.	IP Network ANPR Camera		
5.	Video Management Software		
6.	Video Analytics Software		
7.	Facial Recognition System		
8.	ANPR & UVS System		
9.	VMS Servers		
10.	Video Analytics server		
11.	Camera Server		
12.	ANPR Server		
13.	ANPR Client PCs		
14.	Facial Recognition Server		
15.	SAN Storage		
16.	Layer-2 Network Switches		
17.	Layer -3Network Switches		
18.	Rack		
19.	Patch Chords		
20.	LED Panels (Video Wall)		
21.	Work stations		
22.	Cat 6a cable		
23.	Armoured Cat 6a cable		
24.	Armoured Fiber optic Cable		

1. We hereby confirm that the offered Network Video Management software and other software, including operating system, and cameras network switches, servers, storage devices and all other hardware are as per the tender specifications and deliver the objective and requirement of the IPCCTV system stated in the tender.

2. We also confirm that all the cables, I/O outlets and patch cords etc. are as per tender specifications and other accessories (boots) etc. are as per industry standards.

Date: -

Seal and Signature of Bidder

Place:-

Note:-

1. The offered make in the above list should be one of approved makes only or should be equivalent in all respects to ensure reliability, ruggedness for smooth operation of system on 24/7 without loss of any clarity or quality of picture. The equivalent make claimed by bidder should have a market share of atleast 5% and supported by documents.

2. The OEMs of the offered Camera, Network Switch, Servers and Storage should have their own office in India and be a legal entity registered/incorporated under its own name as per the prevalent / applicable laws of the land and be in operation as on 31/03/2016. The copy of incorporation / registration details should be submitted along with above details.

3. The OEMs of the offered Camera, Network Switch, Servers and Storage should have a functioning /operation Service Centre(s) including spare depots in India. The details of these service centers and spare depots should be given along with the above details.

12. Road Map in respect of the offered makes and models

S.No.	Equipment	Offered Make	Offered model	End of Sale	End of Support
1.	IP Bullet Camera 2 MP Fixed Camera with IR, Varifocal lens (Indoor)				
2.	IP PTZ Camera 2 MP with IR (Outdoor)				
3.	IP Bullet Camera 3 MP Fixed Camera with IR, Varifocal lens(Outdoor)				
4.	ANPR & UVS System				
5.	IP Network ANPR Camera				
6.	Video Management Software				
7.	Video Analytics Software				
8.	VMS Servers				
9.	Video Analytics server				
10.	Camera Server				
11.	ANPR & UVS Server				
12.	Facial Recognition Server				
13.	SAN Storage				
14.	Layer-2 Network Switches				
15.	Layer -3Network Switches				

Date: -
Place:-

Seal and Signature of Bidder

Note: - The dates as mentioned in the above road map should be confirmed by the respective OEMs on their letter head.

Section VIII: Quality Control Requirements

1. All Electrical items supplied under this contract shall be of reputed make with ISI mark.
2. The Electrical works shall be carried in accordance with applicable IE rules in force.
3. All Electric /Electronic Modules and gadgets should be of Standard make.
4. All OFC Network should be carried in accordance with applicable rules in force
5. All major items shall be supplied along with their technical data sheet and catalogues.
6. The complete supply and installation shall comply with statutory requirements as applicable.
7. FAT / FAC: On completion of the work, the system will be put under observation for period of 15 days for trouble free operation including Picture Quality, Frame rate, storage capacity, band width etc. If any deviation / deficiency needs to be addressed by upgrading / modification in the hardware and Software wherever required to meet the requirement. Having certified for the trouble free operation during this Final Acceptance Test (FAT) period by BRBNMPL Maintenance Division or Technical Committee, the Final Acceptance Certificate (FAC) will be issued.

Section IX: Qualification/ Eligibility Criteria

a) Financial Soundness:

- Average Annual turnover of the bidder during last three years ending 31/03/2016 should be more than Rs.300.00 lakhs and it should be reflected in audited financial report for the said period and should be certified by Chartered Accountant.
- Bidders should not have suffered any financial loss for more than one year during last three years ending 31/03/2016.
- The net worth of the firm should not have eroded by more than 30% in the last three years ending 31/03/2016.

Important Note : Please submit above details as per the format given in “Section XI – 2(a) – Financial Soundness” endorsed by the Chartered Accountant.

All Financial standing data like P/L accounts, Balance sheets etc. should be certified by certified accountants, e.g. Chartered accountants (CA)

b) Experience:

Contractor shall have experience in successfully completed similar works during last seven years ending 31st December 2016 shall be either of the following,

- **Three similar completed works costing not less than the amount equal to Rs. 400/- lakhs.**
- Or**
- **Two similar completed works costing not less than the amount equal to Rs. 500/- lakhs**
- Or**
- **One similar completed work costing not less than the amount equal to Rs. 800/- lakhs.**

Note : The word “similar work” expresses the experience of “Design, supply and Installation of IP based CCTV System, Servers & SAN Storage, Video Analytics and OFC Networks. ”

General:

- Bidder should give a declaration that they have not been blacklisted / debarred by BRBNMPL/Government of India in the past 5 years ending 31.03.2016. Also they should not have been blacklisted at present.
- The Tenderer should be registered in INDIA under State VAT Act / Central Sales Tax Act / also to be registered under Central Excise Act (if applicable).
- The firm should confirm that they are competent and legally authorized to submit the tender and / or to enter into legally binding contract.
- The tenderer shall enclose a **confidentiality statement** duly signed and stamped.

Bidder to furnish stipulated documents in support of fulfilment of qualifying criteria. Non-submission or incomplete submission of documents may lead to rejection of offer.

Tender No. **118/MYS/MAINT(U)/ 2016-17**

Dated 10-03-2017

Confidentiality Statement

“The information, which is contained in this document will not, in whole or in part be reproduced, transferred to other documents/electronic media or disclosed to others without written consent of BRBNMPL”. We shall also undertake to maintain secrecy, exclusivity and confidentiality of the high security currency printing environment of BRBNMPL.

Dated this _____ day of _____

For & on behalf of

(Seal & signature with date)

(Name and designation)

Duly authorized to sign tender for and on behalf of

(Name & Address of Bidder)

Tender No. **118/MYS/MAINT(U)/ 2016-17**

Dated 10-03-2017

DECLARATION

To Whomsoever It May Concern

This is to confirm that we M/s. _____ have not been blacklisted / debarred by BRBNMPL/Government of India in the past 5 years till date.

Dated this _____ day of _____

For & on behalf of

(Seal & signature with date)

(Name and designation)

Duly authorized to sign tender for and on behalf of

(Name & Address of Bidder)

Tender No. **118/MYS/MAINT(U)/ 2016-17**

Dated 10-03-2017

DECLARATION

*It is declared that I _____ Proprietor/Owner/
Director/ Authorized Signatory of M/s _____
at _____ (address) on behalf of the
participating firm am competent and legally authorized to submit the tender and / or to enter
into legally binding contract with BRBNMPL.*

Dated this _____ day of _____

For & on behalf of

(Seal & signature with date)

(Name and designation)

Duly authorized to sign tender for and on behalf of

(Name & Address of Bidder)

Tender No. **118/MYS/MAINT(U)/ 2016-17**

Dated 10-03-2017

DECLARATION

Proforma of undertaking for maintenance confirmation by the OEM

To,
The General Manager,
BRBNMPL,
Mysuru.

Dear Sir,

Sub: Tender for “Up-gradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features” at BRBNMPL, Mysuru.

We hereby undertake to provide maintenance support for the following equipments / Devices / Systems / Software supplied by us for Up-gradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features at BRBNMPL, Mysuru, installed by M/s_____, our authorised dealer/ system integrator satisfactorily, for a period of not less than 8 years from the date of completion by way of providing the required spares components, modules, patches, software upgrades etc..

List of items:

- a)
- b)
- c)
- d)
- e)
- f)
- g)

Yours faithfully,

For _____ (OEM)
Authorised signatory

Section X: Tender Form

(To be submitted along with Price bid)

Date

To
The Director,
BRBNMPL,
Note Mudran Nagar,
Mysuru – 570 003

Ref: Your Tender document No. dated

We, the undersigned have examined the above mentioned tender enquiry document, including amendment No. -----, dated (if any), the receipt of which is hereby confirmed. We now offer to supply and deliver (description of goods and services) in conformity with your above referred document for the sum of (total tender amount in figures and words), as shown in the price schedule(s), attached herewith and made part of this tender.

If our tender is accepted, we undertake to supply the goods and perform the services as mentioned above, in accordance with the delivery schedule specified in the List of Requirements.

We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of GCC clause 6, read with modification, if any, in Section V — "Special Conditions of Contract", for due performance of the contract.

We agree to keep our tender valid for acceptance for a period upto as required in the GIT clause 19, read with modification, if any in Section-III — "Special Instructions to Tenderers" or for subsequently extended period, if any, agreed to by us. We also accordingly confirm to abide by this tender upto the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

Dated this _____ day of _____
For & on behalf of

(Signature with date)

(Name and designation)
Duly authorized to sign tender for and on behalf of

.....

Section XI: Price Schedule

PRICE BID FORMAT

(To be submitted in company’s letterhead)

To
The General Manager.
BRBNMPL,
Mysuru -570 003

Sub: Price Bid for “Up-gradation of CCTV system and Servers with IP Cameras and implementation of Video Analytics Features”

Reference : Your Tender No. 118/MYS/MAINT(U)/ 2016-17 Dated 10-03-2017

A. Supply and Installation:

Sl.No.	Description	UO M	Qty	Rate (₹)	Amount (₹)	VAT (₹)	Service Tax (₹)	Total Amount (₹)
1.	IP Bullet Cameras 2 MP (Fixed IR) with Varifocal Lens including 128GB of SD card, Housing, fixtures, Power supply, Patch cards etc (Indoor)	Nos.	280					
2.	IP Cameras 2 MP with PTZ with IR including 128GB of SD card, Housing, fixtures, Power supply, Patch cards etc (Indoor and Outdoor)	Nos.	80					
3.	Camera Server for recording the video of IP cameras with 07 days back-up (50 cameras per server, 9+1 standby) including required accessories.	Nos.	10					
4.	VMS Software with 600 Camera licenses for Life time	Nos.	1					
5.	Video Wall with 40" LED monitors (Min. 12 Nos.) Industrial grade and required no. of Client PCs with multi monitoring feature for live viewing and Video Analytics monitoring (Including Powder coated Frame work and accessories)	lot	1					
6.	L3 switch - Fully Loaded with accessories including LIU, SFU Modules, Patch cords, Pig tails etc	Nos.	1					
7.	L2 Switch - Fully Loaded with accessories including LIU, SFU Modules, Patch cords, Pig tails etc	Nos.	4					

Tender document for “Upgradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features”.

8.	Edge Switch - Fully Loaded with accessories including LIU, SFU Modules, Patch cords, Pig tails etc	Nos.	25					
9.	10G SFU Modules	Nos.	12					
10.	1G SFU Modules	Nos.	50					
11.	OFC Cable (12 Core) Armoured and accessories	Mtrs	2000					
12.	Power Cable 2.5Sq mm 3 Core, PVC Armoured	Mtrs	1500					
13.	Cat 6a Cable	Mtrs	25000					
14.	Cat 6a Cable Armoured	Mtrs	500					
15.	OFC Cable laying charges with conduit/Cable tray	Mtrs	2000					
16.	Power Cable laying charges	Mtrs	1500					
17.	Cat 6a Cabling charges with conduit/Cable tray	Mtrs	25000					
18.	Cat 6a Armoured Cabling charges including Cable Trenching	Mtrs	500					
19.	POE switches . 12 Port	Nos.	10					
20.	Camera Mounting Pole (15 feet Minimum above Ground level) with required accessories and junction boxes	Nos.	10					
21.	Earth pits as per IE Standards	Nos.	10					
22.	VMS/Backup Application Server for Camera Recording including back-up application software with required license.	Nos.	2					
23.	Back-up SAN Storage for Camera Recording for 90 days back-up. Minimum 1200 TB usable capacity expandable upto 1800 TB	No.	1					
24.	Equipment Rack (42U, closed network rack) with accessories.	No.	2					
25.	Equipment Rack Wall Mount (19U, network rack) with accessories.	No.	4					
26.	Equipment Rack Wall Mount (6U, network rack) with accessories.	No.	25					
27.	Video Analytics Software with	No.	1					

Tender document for “Upgradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features”.

	License for 100 Cameras							
28.	Video Analytics Processing/Application Server	No.	2					
29.	Facial Recognition Server with Software and Licence	No.	1					
30.	Video Analytics monitoring Station	No.	1					
31.	ANPR & UVS Software, Server and Monitor with Licence (ANPR- 4, UVS – 1)	Set	1					
32.	IP NW 3 Megapixel Fixed Camera (Outdoor), including 128GB of SD card, Housing, fixtures, Power supply, Patch cards etc	Nos.	28					
33.	IP NW ANPR Camera	Nos./ Set	4					
34.	UVS System with required Cameras	Set	1					
35.	Surge Protection for cameras - 8/20 μ s (IEC Standard 61643-11)	Nos.	90					
36.	Applicable Licenses if any	Lot	1					
37.	Any other Items/ Equipment/ Instruments/ software etc required if any which are not mentioned above and required for the project (Pl. mention)	Lot	1					
38.	Supply of required materials and accessories for installation of the equipments, devises etc as per above BOQ	Lot	1					
39.	Installation, Testing and commissioning charges of all equipment, Network and components etc. (Sl. No. 1 to 35) and Training	Lot	1					
40.	All Civil works including making through Holes on walls, Plastering, Painting, welding etc. for executing the work.	LS	1					
41.	Charges for Packing, forwarding and insurance if any.	LS	1					
42.	TOTAL							

In words, Rupeesonly.

B. COMPREHENSIVE AMC CHARGES

SL No	Item Description	Unit	Rate / Annum	Amount for 5 years
1.	Comprehensive AMC Charges for the entire CCTV System including the existing OFC network for Five years from date of expiry of warranty.	Per year		
2.	Service tax @ _____%			
3.	TOTAL			
In words, Rupees.....only.				

C. Total Cost:

Sl.No	Description	Amount
1	Supply and installation charges as per the Table –A	
2	AMC Charges as per the Table –B	
3	Grand Total	
(In words) Rupees -----only		

We confirm that we will abide by all the tender terms & conditions and we do not have any counter conditions.

Thanking you,
Yours faithfully,

Seal

()
Name & Signature with date.

Note :

1. Price with condition(s) shall be liable for rejection.
2. Price should be quoted exactly as per the format.
3. Price quoted should be all inclusive.
4. Conditional discount/ rebate etc. shall not be considered. In case, discount is offered that should be adjusted in the price and net price should be quoted.

5. The L1 bidder will be decided based on the total cost of supply, installation and AMC charges.
6. Bidders are instructed to indicate clearly applicable VAT/CST and Service tax for each of the items in the relevant column including Software, licences and Installation, Testing and Commissioning charges.
7. In case the quantity varies from the above the same will be paid on pro rata basis from the above rate. The contractor has to arrange all the required material, equipment to complete the star / ring topology network.

Note: The indicated quantities for cabling, racks, etc are tentative / approximate and will be paid at actuals as per the site requirement and supplied quantities (after measurement).

Section XII
I. TECHNICAL BID / QUESTIONNAIRE
(To be submitted in company’s letterhead)

From,
 Company Name,
 BRBNMPL Vendor Registration No:
 Address.

To
 The General Manager,
 BRBNMPL, NOTE MUDRAN NAGAR
 MYSURU - 570 003.

Dear Sir,

Sub: Part-I: Techno-Commercial Bid for “Up-gradation of CCTV system and Servers with IP Cameras and implementation of Video Analytics Features”

Reference : Your Tender No. 118/MYS/MAINT(U)/ 2016-17 Dated 10-03-2017

We have received your Tender enquiry cited and we are pleased to enclose the following as our technical bid for your kind consideration.

1. Our company's profile.

- a) Name of the firm :
- b) Status of the firm : Proprietor / Partnership / Regd. Company / Co-op. Society
- c) Local / Central Sales Tax / Service Tax / Excise Regn. No.: (Copy of Certificate enclosed)
- d) Income Tax P.A.N. No.: (Copy enclosed)
- e) Bankers and their Address:
- f) Whether falling within MSME? (Micro, Small and Medium Enterprise) , if so please furnish documentary evidence to this effect.(In case documentary evidence to this effect is not furnished it will be presumed that you do not belong to MSME and accordingly shall be taken on record.)

2. Documents in support of eligibility criteria :

a) Financial Soundness:

Sl.No	Description	2013-14	2014-15	2015-16
1	Annual Turnover			
2	Net profit			
3	Net worth of the firm			

(To be filled by tenderer. Please don’t write like “attached” or “refer” and attach certificate of chartered accountant in the above format)

b) Experience.

Sl. No	Company Name	Work order No & Date	Details of work	Order Value	Date of completion
1					
2					
3					
4					
5					

(To be filled by tenderer. Please don't write like “attached” or “refer”)

- We confirm that we possess the necessary technical competence and financial resources as mentioned in Section -IX of this tender document, to ensure supply of the tendered item, as per your specifications and delivery schedule. Necessary documents like copies of Work orders, Certificate of chartered accountant for the financial standing are enclosed herewith.
 - Technical details of the items like make, model number, date sheet etc. for the items mentioned in our BOQ.
 - Write up about the proposed system and its working principle.
 - We have never been blacklisted/debarred by BRBNMPL.
 - We confirm having been in the business continuously for the last three years. (documentary proof attached)
 - We also enclosed herewith DD No. _____ for Rs. _____ as EMD against this tender.
3. We confirm that we have quoted exactly for the tendered product as per your specifications given in Section VII.
 4. We confirm that the Price bid is quoted exactly as per your format Section-XII and is inclusive of material, labour and all statutory levies, duties, laying, freight, handling, loading, unloading charges, delivery at your Press.
 5. We confirm that there would not be any price escalation during the supply period.
 6. We confirm that we will abide by all the tender terms & conditions and we do not have any counter conditions. As required, we enclose herewith the complete set of copy of tender documents duly signed by us as a token of our acceptance.
 7. We also confirm that the undersigned is duly authorized and have the competence to sign the contract for and on behalf of the firm.

II. Compliance Statement: (To be filled and enclosed with Technical bid)

Sl.no	Item	Details	Ref /page no of document attached
1	Company profile, Address, Phone, FAX no, Contact Person, etc		
2	Proprietorship/ Partnership/Limited etc		
3	VAT No		
4	Service Tax No		
5	PAN / Income Tax Registration Number etc.		
6	Bankers Name and address with branch code/Account no/Type of account/When opened etc.		
7	Experience as per Section IX of tender document		
8	Financial Standing as per Section IX of tender document. (Please attach certificate from chartered accountant as per the format mentioned in Section XI-2(a))		
9.a	Make, Model, Technical Catalogue of the major components offered like Video Analytics, cameras, servers & Storage etc. with detailed Specification.		
9.b	System architecture drawing of the above system for installation.		
10	Approval/Standards of the above system.		
11	Copy of agreement or any other legal document between the manufacturer and the bidder where the former has authorized the latter to sell and service its products. (Incomplete responses without the required documents are liable to be cancelled)		
12	Year of commencement of business.		
13	Number of key persons who have sufficient experience to develop such system.		
14	Whether full fledged service set up will be available for the above work at nearby place / city from where after sale service can be provided and name of place.		

<p align="center">Tender document for “Upgradation of CCTV System and Servers with IP Cameras and Implementation of Video Analytic Features”.</p>
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15	Agreed to enter into “integrity fact” as per the annexure -I		
16	Enclose duly filled format as per compliance statement -III		
17	Date of Pre-bid visit to BRBNMPL, Mysuru		

We have attached the documentary evidence in support of above-mentioned information. We understand that if the details given in support of claims made above are found to be untenable or unverifiable or both, our bid may be rejected without any reference to us. We further clearly understand that BRBNM (P) L is not obliged to inform us of the reasons of rejection of our bid.

(Signature, Name, designation, contact address and Telephone number of the authorized signatory)
Seal

CHECK LIST
(Please fill this check list and attach with technical bid)

Sl.No	Description	Enclosed	Remarks
1.	DD for Rs.500.00 as Tender fee	Yes/No	
2.	DD for Rs. 20 Lakhs as EMD	Yes/No	
3.	Tender Document Section I to Section XVII duly sealed and signed	Yes/No	Please download the Section II & IV of tender document from www.brbnmpl.co.in and seal and sign it.
4.	Technical Bid –Section XII (Duly filled)	Yes/No	
5.	Purchase order /Work order copy or completion certificate as proof of experience	Yes/No	
6.	Delivery Schedule (150 days from date of Work order)	Accepted / Not Acceptable (Pl.Specify)	
7.	Chartered Accountant certificate /PL statements certified by chartered Account as proof for Financial Soundness (shall highlight Turnover, Net worth and Profit).	Yes/No	
8.	Certificate confirming ‘Not blacklisted by Govt Departments /BRBNMPL	Yes/No	
9.	PAN Card copy	Yes/No	
10.	Copy of Tax (VAT/CST/SERVICE TAX/WCT) registration certificate	Yes/No	
11.	EMD & Tender Fee in one sealed cover	Yes/No	
12.	Technical Bid in one sealed cover	Yes/No	
13.	Price Bid in one sealed cover	Yes/No	
14.	All the three sealed covers (Sl No- 11,12, &13) in one sealed cover	Yes/No	

Seal and Signature

SECTION XIII: BANK GUARANTEE FORM OF EMD

SECTION XIV: MANUFACTURER’S AUTHORIZATION FORM

SECTION XV: BANK GUARANTEE FORM FOR PERFORMANCE SECURITY

SECTION XVI: CONTRACT FORM

SECTION XVII: LETTER OF AUTHORITY FOR ATTENDING A BID OPENING

~~SECTION XVIII: SHIPPING ARRANGEMENT FOR LINER CARGOES~~

SECTION XIX: PROFORMA OF BILLS FOR PAYMENTS

(The above Sections shall be downloaded website: www.brbnmpl.co.in under the section ‘Downloads’ and signed & stamped and to be submitted along with the **Techno-Commercial Bid –Part I** as acceptance of terms & conditions. ***(Offer submitted without the signed copies of these sections shall liable to be rejected)***)

(To be signed & stamped and submitted along with Techno-commercial Bid Part –I)

SECTION – XX (Integrity Pact)

(To be executed on plain paper and applicable for all tenders of value above Rs.1 Crore)

PRE-CONTRACT INTEGRITY PACT

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made onday of the month of 2017 between on one hand, BRBNMPL through....., Corporate Office, Bangalore on behalf of the Managing Director hereinafter called the “BUYER” which expression shall mean and include unless the context otherwise requires his successors in office and assigns of the First Part andrepresented

by..... hereinafter called the BIDDER / SELLER which expression shall mean and include unless the context otherwise requires his successors and permitted assigns of the Second Part.

WHEREAS the BUYER propose to procure -----for BRBNMPL----- and the BIDDER / SELLER is willing to offer / has offered to supply-----, and

WHEREAS the BIDDER is a private company / public company / Government undertaking partnership / registered export agency constituted in accordance with the relevant law in the matter and the BUYER is a Company wholly owned by Reserve Bank of India on behalf of its Managing Director.

NOW THEREFORE

To avoid all forms of corruption by following a system that is fair, transparent free from any influence / prejudiced dealings prior to, during and subsequent to currency of the contract to be entered into with a view to enabling the BUYER to obtain the desired said stores / equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement andEnabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption in any form by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Definitions:

In pursuance of the above Pact, for the purpose of this provision, the Buyer defines the relevant terms set forth therein as under:

- 1) “Contract” means the contract entered into between the Buyer and Bidder (or Tenderer) / Contractor for the execution of work mentioned in the preamble above.
- 2) “Contractor” means the bidder or tenderer whose tender (bid) has been accepted by the Buyer or Company whose tender (bid) has been accepted and shall be deemed to include his/its/their successors, representatives, heirs, executors and administrators unless excluded by the Contract.
- 3) “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

In order to achieve these goals, the Buyer proposes to appoint one or more External Independent Monitor/s who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.
- 4) “Collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of the Buyer designed to establish bid prices at artificial, noncompetitive levels; and
- 5) “Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution;
- 6) “External Independent Monitor” means a person, hereinafter referred to as EIM, appointed, in accordance with Section 9 below, to verify compliance with this agreement.
- 7) “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Buyer and includes collusive practices among Bidders (Prior to or after bid submission) designed to establish bid prices at artificial, non competitive levels and to deprive the Buyer of the benefits of free and open competition;
- 8) “Party” means a signatory to this agreement.
- 9) “Purchaser or Buyer” means Bharatiya Reserve Bank Note Mudran Private Limited, incorporated under the Companies Act 1956, having their registered Office at Bangalore 560029 and includes their successors.
- 10) “Bidder or Tenderer” means the person, firm or company submitting a tender (bid) against the invitation to Tender (bid) and includes his/its/their staff, consultants, parent

and associate and subsidiary companies, agents, consortium and joint venture partners, sub-contractors and suppliers, heirs, executors, administrators, representatives, successors.

1. Commitments of the Buyer

1. The BUYER commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - 1.1 The BUYER undertakes that no official of the BUYER connected directly or indirectly with the contract will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process bid evaluation, contracting or implementation process related to the contract.
 - 1.2 The BUYER will during the pre-contract stage treat all BIDDERS alike and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.
 - 1.3 All the officials of the BUYERS will report to the Director (Technical)/Director (Operations) / General Manager of any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings or any other action as deemed fit including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER, the proceedings under the contract would not be stalled.

2. Commitments of BIDDERS

- 2.1 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular, commit itself to the following:

- 2.1.1 The BIDDER will not offer directly or through intermediaries any bribe, gift consideration, reward, favour, any material or immaterial benefit, other advantage, commission, fees brokerage or inducement to any official of the BUYER connected directly or indirectly with the bidding process or to any person, organization or third party related to a contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
- 2.1.2 The BIDDER further undertakes that it has not given, offered, promised to give directly or indirectly any bribe, gift, consideration, reward, favour any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavor to any person in relation to the contract or any other contract with buyer.
- 2.1.3 BIDDERS of foreign origin shall disclose the name and address of the Agents / representatives in India, if any. Similarly, the bidders of Indian nationality shall furnish the name and address of the foreign principals, if any.
- 2.1.4 BIDDERS shall disclose the payments to be made by them to agents / brokers or any other intermediary in connection with this bid / contract.
- 2.1.5 The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer / integrator / authorized Government sponsored export entity of the stores and has not engaged any individual or firm or company whether Indian or foreign to intercede facilitate or in any way to recommend to the BUYER or any of its functionaries, whether official or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual firm or company in respect of any such intercession, facilitation or recommendation.
- 2.1.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract shall disclose any payment he has made is commented to or intends to make to officials of the BUYER or their family members agents brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 2.1.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency fairness and progress of the bidding process, bid evaluation contracting and implementation of the contract.

2.1.8 The BIDDER will not accept any advantage in exchange for any corrupt practice unfair means and illegal activities.

2.1.9 The BIDDER shall not use improperly for purposes of competition or personal gain, or pass on to others any information provided by the BUYER as part of the business relationship regarding plans, technical proposals and business details including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

2.1.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

2.1.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

2.1.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER either directly or indirectly is a relative of any serving / ex-employees of the officers of the BUYER or alternatively if any relative of any serving / ex-employees of the officers of the BUYER has financial interest / stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.

The term relative for this purpose would be as defined in Section 6 of the Companies Act, 1956.

2.1.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings of transaction directly or indirectly with any employee of the BUYER.

3. Disqualification from tender process and exclusion from future contracts.

3.1 If the Bidder, before contract award has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question, the Buyer is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

3.2 If the Bidder / Contractor has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Buyer is entitled also to exclude the Bidder / Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 1 year and maximum of 3 years.

3.3 A transgression is considered to have occurred if the Buyer after due consideration of the available evidence, concludes that no reasonable doubt is possible.

3.4 The Bidder/ Contractor accepts and undertakes to respect and uphold the Buyer's absolute right to resort to and impose such exclusion after giving opportunity of hearing to the bidder. This undertaking is given freely and after obtaining independent legal advice.

3.5 If the Bidder / Contractor can prove that he has restored / recouped the damage caused by him and has installed a suitable corruption prevention system, the Buyer may revoke the exclusion prematurely, provided such systems has been audited by an independent agency.

4. Compensation for Damages

4.1 If the Buyer has disqualified the Bidder from the tender process prior to the award according to Section 3, the Buyer is entitled to demand and recover from the Bidder liquidated damages equivalent to Earnest Money Deposit / Bid Security.

4.2 If the Buyer has terminated the contract according to Section 3 or if the Buyer is entitled to terminate the contract according to Section 3, the Buyer shall be entitled to demand and recover from the Contractor liquidated damages equivalent to Security Deposit / Performance Bank Guarantee.

5. Previous Transgression

5.1. The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country confirming to anti-corruption approach in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

5.2. The BIDDER agrees that if it makes incorrect statement on this subject BIDDER can be disqualified from the tender process or the contract already awarded, can be terminated for such reason.

6. Earnest Money (Security Deposit)

6.1 While submitting commercial bid, the BIDDER shall deposit an amount 2% of the total value of the contract as Earnest Money / Security Deposit, with the BUYER through any of the following instruments:

Bank Draft or a Pay Order in favour of Bharatiya Reserve Bank Note Mudran Private Limited. A confirmed guarantee by an Indian Nationalised Bank promising payment of the guaranteed sum to the BUYER or demand within three working days without

any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.

Any other mode or through any other instrument (as specified in the tender document).

6.2 The Earnest Money / Security Deposit shall be valid for 60 days after complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER and after completion of warranty period.

6.3 In case of successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same by assigning reason for imposing sanction to violation of this Pact.

6.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money / Security Deposit for the period of its currency.

7. Sanctions for Violations

7.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions wherever recurred.

- i) To immediately call off the pre-contract negotiations after assigning any reason. However, the proceedings with the other BIDDER(s) would continue.
- ii) The Earnest Money Deposit (in pre-contract stage) and / or Security Deposit / Performance Bond (after the contract is signed) shall stand forfeited either fully or partially as decided by the BUYER and the BUYER shall assign reason therefore.
- iii) To immediately cancel the contract if already signed, without giving any compensation to the BIDDER.
- iv) To recover all sums already paid by the BUYER and in case an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in

connection with any other contract for other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

- v) To encash the advance bank guarantee and performance bond / warranty bond if furnished by the BIDDER in order to recover payments already made by the BUYER along with interest.
- vi) To cancel all or any other contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation / rescission and the BUYER shall be entitled to deduct the amount so payable from the money due to the BIDDER.
- vii) To debar the BIDDER from participating in future bidding processes of the buyer for a minimum period of 5 years, which may be further extended at the discretion of the BUYER.
- viii) To recover all sums paid in violation of this Pact by BIDDER(s) any middlemen or agent or broker with a view to securing the contract.
- ix) Any letter of credit, including revolving Letter of Credit, opened by buyer, shall be rendered infructuous from the date of advice of violation by buyer.
- x) Forfeiture of Performance Bond in case of a decision by the BUYER to seek for the forfeiture for imposing sanction for violation of this Pact.

7.2 The BUYER will be entitled to take all or any of the actions mentioned at para 7.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) of an offence as defined in Chapter IX of the Indian Penal Code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

7.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the independent Monitor (s) appointed for the purposes of this Pact.

8. Fall Clause

8.1. The bidder undertakes that it has not supplied/is not supplying similar product /systems or sub-systems at a lower price than that offered in the present bid in respect of any other customer in India, Ministry /Department of the Government

of India or PSU and if it is found at any stage that similar products/systems or such systems was supplied by the Bidder to any of these entities at a lower price then that very price with due allowance for elapsed time would be applicable to the present case and the difference in the cost would be refunded by the Bidder to the Buyer if the contract has already been concluded.

9. External Independent Monitor-

Name: V.SANTHANA RAMAN, E-mail: v.santhanaraman@gmail.com

- 9.1 The BUYER appoints competent and credible external independent Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 9.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions, neutrally and independently. He reports to the Chairperson of the Board of the Buyer.
- 9.3 The Contractor accepts that the Monitor has the right to access without restriction to all Tender/Contract documentation of the Buyer including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to tender/contract documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder / Contractor / Subcontractor with confidentiality, provided that this clause is subject to the general confidentiality clause.
- 9.4 The Buyer will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Buyer and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 9.5 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Buyer and request the Management to discontinue or heal the violation, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, Independent External Monitor shall give an opportunity to the bidder/contractor to present its case before making its recommendations to the management of the buyer.
- 9.6 The Monitor will submit a written report to the Chairperson of the Board of the Buyer within 8 to 10 weeks from the date of reference or intimation to him by

the 'Buyer' and, should the occasion arise, submit proposals for correcting problematic situations.

9.7 Monitor shall be entitled to compensation on the same terms as being extended to / provided to Outside Expert Committee members / Chairman as prevailing with Buyer.

9.8 If the Monitor has reported to the Chairperson of the Board a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, IPC/PC Act and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

9.9 The word 'Monitor' would include both singular and plural.

10. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Book of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

11. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

12. Other Legal Actions

12.1 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12.2 Changes and supplements as well as termination notices need to be made in writing.

12.3 If the Contractor is a partnership or a consortium this agreement must be signed by all partners or consortium members.

13. Validity

13.1 The validity of this Integrity Pact shall be from the date of its signing and valid for 60 days after complete conclusion of the contractual obligations to

the complete satisfaction of both the BUYER and the BIDDER and after completion of warranty period. In case the BIDDER is unsuccessful this Integrity Pact shall expire after one year from the date of the signing of the contract. If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairman of the buyer.

13.2 Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact shall remain valid. In this case the parties will strive to come to an agreement to their original intentions.

14. The parties hereby sign this integrity pact at ____ on _____.

BUYER

BIDDER

Name of the Officer

“Authorised signatory of the Bidder”

Designation

Witness

Witness

1. _____

1. _____

2. _____

2. _____