

**Expression of Interest (EOI) for Selection of
Bidder Cum Technical Support Agency for
Implementation, Supply, Installation,
Operation & Maintenance of
Central Command & Control Center (CC&CC)**

**Jharkhand State Beverages Corporation Limited
Department of Excise and Prohibition
Government of Jharkhand**

HEAD OFFICE: UTPAD BHAWAN, GROUND FLOOR,
NEAR NAVEEN POLICE KENDRA,
KANKE ROAD, RANCHI-834001

Date of Issue 08/08/2024

Reference No: JSBCL/01

Expression of Interest (EOI) for Selection of Bidder cum Technical Support Agency for
Implementation, Supply, Installation, Operation & Maintenance of
Central Command & Control Center (CC&CC)

Invitation of Expression of Interest (EOI)

Jharkhand State Beverages Corporation Limited


Expression of Interest (EOI) for Selection of Bidder Cum Technical Support Agency
for Implementation, Supply, Installation, Operation & Maintenance of
Central Command & Control Center (CC&CC)

EOI reference no.: JSBCL/01

Jharkhand State Beverages Corporation Limited, Government of Jharkhand (Purchaser) invites Expression of Interests (EOIs) from prospective bidders ('Bidders') of repute for Supply, Installation, Operation & Maintenance of establishing Central Command and Control Center System, Fully Smart Solution (RFID, CCTV, Sensors, Cameras, Boom Barriers etc.) for real time Excise Surveillance in the State of Jharkhand. The Successful Bidder will carry out the scope of work in accordance with the specifications provided in a detailed Request for Proposal (RFP) document which shall be brought out by the Purchaser, subsequently.

Interested Bidders are requested to submit their proposals along with the necessary documents as indicated in the EOI document. This document can be downloaded from www.jsbcl.in as well as the eProc portal <http://jharkhandtenders.gov.in>

The Expression of Interest shall be submitted on or before 09/09/2024 by 04:00 PM only on the eproc portal i.e. <http://jharkhandtenders.gov.in>


General Manager (Operation)
(JSBCL)

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1. Abbreviations & Definitions:

Unless the context otherwise requires, the following terms whenever used in this EOI, RFP and contract will have the following meanings:

1.1 Abbreviations

| S. No. | Abbreviations | Full Form |
|--------|---------------|------------------------------------|
| 1. | API | Application Programming Interface |
| 2. | CA | Chartered Accountant |
| 3. | EMD | Earnest Money Deposit |
| 4. | EOI | Expression of Interest |
| 5. | FY | Financial Year |
| 6. | GoI | Government of India |
| 7. | GSTN | Goods and Service Tax Number |
| 8. | TSA | Technical Support Agency |
| 9. | CC&CC | Central Command and Control Center |
| 10. | INR | Indian National Rupees |
| 11. | IPR | Intellectual Property Right |
| 12. | JV | Joint Venture |
| 13. | NO | Nodal Officer |
| 14. | O&M | Operation and Maintenance |
| 15. | PAN | Permanent Account Number |
| 16. | PBG | Performance Bank Guarantee |
| 17. | PoA | Power of Attorney |
| 18. | PSU | Public Sector Undertaking |
| 19. | RFID | Radio Frequency Identification |
| 20. | RFP | Request for Proposal |
| 21. | SLA | Service Level Agreement |
| 22. | TAT | Turn Around Time |

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1.2 Definitions

| S. No | Assamya | Definition |
|-------|---|---|
| 1. | Authority | Secretary, Excise and Prohibition, Government of Jharkhand |
| 2. | Authorized Representative | This means any person authorized by either of the Parties i.e. Bidder and Purchaser. |
| 3. | Bidder/ Applicant | An individual/company that submits an EOI, while competing with others, for providing services with respect to specific requirements as defined in this EOI Document. |
| 4. | Central/ State Government Organization | Central or State Government, Centre/State run PSUs, Statutory bodies, or co-operative societies. |
| 5. | Day | Any day including Saturday or Sunday or a public holiday (As declared by Govt. of Jharkhand). |
| 6. | Designated Authority/Tech. Evaluation Committee | Departmental Official/ Committee who will approve all the deliverables submitted by the bidder as per the criteria defined in the EOI document. |
| 7. | EOI (Expression of Interest) | This means this complete document and its annexures, and any other documents provided to assess potential bidders/ agencies who can help Purchaser with the ability, skill, and knowledge in respect to the Supply, Installation, Operation & Maintenance of establishing Central Command & Control Center, fully Smart Solution (RFID), Sensors, Cameras, Boom Barriers etc.) in the State of Jharkhand. |
| 8. | Parties | This means Purchaser and Bidder, collectively |
| 9. | Party | This means Purchaser or Bidder individually |
| 10. | Purchaser | Jharkhand State Beverages Corporation Limited Department of Excise and Prohibition, Jharkhand |
| 11. | Successful Project | Project for which work order and completion certificate of the work is available with the bidder |

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| | | |
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| 12. | Week | Designated time frame consisting of all seven days including any Public Holiday (as declared by Government of Jharkhand), Saturday and Sunday. |
|-----|------|--|

2. Disclaimer

This Expression of Interest (EOI) contains brief information about the Project and will assist Purchaser to formulate the RFP for Supply, Installation, Operation & Maintenance of establishing Central Command and Control Center, fully Smart Solution (RFID, CCTV, Sensors, Cameras, Boom Barriers etc.) for real time Excise Management and Surveillance in the State of Jharkhand. This EOI is not an agreement or an offer by the Purchaser to the Applicants/ bidders or any other person.

This EOI is one of the steps in the process of selection of an Implementing Agency/ Successful bidder for Supply, Installation, Operation & Maintenance of establishing of Central Command and Control Center, fully Smart Solution (RFID, CCTV, Sensors, Cameras, Boom Barriers etc.) for real time Excise Management and Surveillance in State of Jharkhand by utilizing appropriate methodologies/technologies. The purpose of the document is to provide the Applicants/ Bidders with information to assist them in formulation of their EOI application or response to EOI Document ("the Application").

The information provided in this EOI Document, to the Applicants is on a wide range of matters, some of which depends upon interpretation of law. The Applicants may conduct their own independent assessment, site visit, investigations and analysis and check the reliability, accuracy, and completeness of the information at their end and obtain independent advice from relevant sources as required before submission of their EOI application.

Furthermore, the information provided in this EOI Document is not intended to be an exhaustive account of statutory or commercial requirements and should not be regarded as a complete or authoritative statement of law. Purchaser along with its directors, associates, employees, affiliates, consultants make no representation or warranty and shall have no liability to any person including the Applicant under any law, statute or by any rule and/or regulation made thereunder, tort, equity, principles of

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restitution, unjust enrichment or otherwise for any loss, damage, costs or expenses which may arise from or be incurred or suffered on account of anything contained in this EOI Document or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the EOI Document any assessment, assumption, statement or information contained therein or deemed to form part of this EOI Document or arising in any way in this subject.

The purchaser or any of its employees or advisors / representatives shall incur no liability under any law, statute, rules, or regulations as to the accuracy or completeness of the EOI Document. Purchaser reserves the right to change any or all conditions/ information set in this EOI Document by way of revision, deletion, updating or annulment through issuance of appropriate addendum as the Purchaser may deem fit without assigning any reason thereof.

The purchaser will not entertain or be liable for any claim for costs and expenses in relation to the preparation of the EOI applications to be submitted in terms of this EOI Document.

The information contained in this EOI Document or subsequently provided to the prospective Applicants/ Bidders, whether verbally or in documentary or any other form by or on behalf of Purchaser or any of its employees or advisers, shall be considered confidential and is not to be reproduced/ adopted/ displayed for any purpose whatsoever.

This EOI Document is for informative purpose only and does not imply that Purchaser is bound to select or short list pre-qualified applications for the RFP stage or to appoint the Applicant/ Bidder for the Project as the case may be and Purchaser further reserves its absolute right and discretion to terminate the process at any time without assigning any reason or explanation thereof.

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3. Document Control Sheet

Expected timelines are defined in the table below:

| # | Particulars | Timeline |
|----|--|---|
| 1. | EOI inviting Authority | Jharkhand State Beverages Corporation Limited (JSBCL) |
| 2. | Document reference number | EOI/01 |
| 3. | Name of the Work | Expression of Interest (EOI) for Supply, Installation, Operation & Maintenance of establishing of Central Command and Control Center, fully Smart Solution (RFID, CCTV, Sensors, Cameras, Boom Barrier etc.) for real time Excise Management and Surveillance System. |
| 4. | Cost of EOI document and mode of payment | Rs.25,000/- (Rs. Twenty Five thousand only) + processing fee as mentioned on State e- Procurement portal http://jharkhandtenders.gov.in through online mode or offline mode. |
| 5. | Date for the uploading of EOI document on the portal https://eproc.jharkhand.gov.in/ and jsbcl.in | 10/08/2024 |
| 6. | Last date and time for submission of EOI proposal on the tendering portal https:// Jharkhandtenders.gov.in/ | 09/09/2024 04:00 PM |
| 7. | Date, Time and Venue for opening of bids and Presentation | 11/09/2024 04:30 PM Venue: Jharkhand State Beverages Corporation Ltd. Utpad Bhawan, Near Naveen Police Kendra, Kanke Road, Ranchi-834001 Note: |

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| | | |
|----|--|--|
| 9. | Website for EOI reference | https://jsbcl.in/ and http://jharkhandtenders.gov.in |
| 10 | Key Contact details/ Nodal Officer | <p>Key Contact Persons-</p> <p>Name: Designation: Contact No – Email -</p> <p>Name: Designation – Email Id: Contact no –</p> |
| 11 | Release of corrigendum (if required) on the eproc portal https://eproc.Jharkhand.gov.in/ | Any time before opening of the bids |

Introduction

3.1 Background & Objective

Department of Excise and Prohibition, Government of Jharkhand was formulated in year 2010 and thereafter vide order No. 1992 dated 07.10.2010 of the Government of Jharkhand. The main functions & activities of the department have abolished the monopoly of selected commercial organizations over the liquor business in the state of Jharkhand. This resolution aims to provide consumers with pure and quality liquor at reasonable prices according to their demand, and to increase product revenue. For this purpose, the Jharkhand State Beverages Corporation Ltd. was established to supply liquor to retail licensees. The corporation was registered under the Companies Act, 1956, on 26.11.10. The corporate identity number of the corporation is U51228 JH 2010 SGC 014519/2010-11 dated 26.11.2010.

With an aim to monitor and manage the excise activities along with curbing of the illegal manufacturing, sales to reduce illicit liquor. Purchaser invites Expression of Interests (EOIs) from prospective bidders ('Bidders') of repute meeting the eligibility criteria as defined in this document for Supply, Installation, Operation & Maintenance of establishing Central Command and Control Center, fully Smart Solution (RFID, CCTV, Sensors, Cameras, Boom Barriers etc.) for real time Excise Management and Surveillance in the State of Jharkhand. The Successful Bidder who shall be selected

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through the RFP process will conduct the scope of work in accordance with the specifications provided in a detailed Request for Proposal (RFP) document which shall be brought out by the Purchaser, subsequently.

Through this EOI, Purchaser will be in the position to define a right technology solution in the RFP which will help the State Government in end-to-end management of excise management activities, improving the service delivery, decision making and better financial models etc. which shall be the best suited for Jharkhand. Further, Purchaser shall have better Financial Projections for the entire project along with the IT devices, technology methods etc. which will be needed for standardizing the JSBCL activities and curbing the illegal excise activities.

3.2 Availability of the funding for the project

The successful Bidder will fund the Project i.e cost of Supply, Installation, Operation & Maintenance of establishing of Central Command and Control Centre, fully Smart Solution (RFID, CCTV, Sensor, Cameras, Boom Barrier etc. for real time Excise Management and Surveillance System.

3.3 Payment Terms

The payment (Service Charge) inclusive of GST shall be payable on quarterly basis after successful completion of work.

The payment of firm will be started after getting the UAT Certificate from JSBCL.

3.4 Penalty Clause

- i) In case of not getting video feed on real time basis then 1 % from service charge shall be penalized from running bill submitted quarterly.
- ii) In case of any problem in the equipment or software related issue, it has to be repaired within 48 hours otherwise 1 % extra penalty charge (Apart from S No 3.4 (i)) shall be leviable from service charge of submitted bill. The Successful bidder shall be debarred for 3 years if they don't complete the project in the time line i.e 3 months from the date of award of work.

3.5 Timelines for the project

Implementing Agency shall be given a time of 3 months for Supply, Installation, Operation & Maintenance of establishing Central Command and Control Center end to end Fully Smart Solution (RFID, CCTV, Sensors, Cameras, Boom Barrier, Software application, Dashboard etc.) for real time Excise Management and Surveillance as required executing the project. The various aspects of the existing equipment and its working can be explained by the officer in charge, Jharkhand

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State Beverages Corporation Limited, Jharkhand as per the request of the bidder on the date and time mutually decided by both the Parties.

4. Instructions to the Bidders

The purchaser invites reputed companies to submit their applications for the Project in accordance with conditions and manner prescribed in this Expression of Interest (EOI) document.

4.1 Availing EOI Documents

The EOI document can be downloaded from the website

<http://jharkhandtenders.gov.in> up to the date and time mentioned in the Document

Control Sheet of this document.

4.2 Completeness of the EOI Response

Bidders are advised to study all instructions, forms, terms, requirements, and other information in the EOI documents carefully. Submission of Interests shall be deemed to have been done after careful study and examination of the EOI document with full understanding of its implications. The response to this EOI should be full and complete in all respects. Failure to furnish all information required by the EOI document will be at that Applicant's/ Bidder's risk and may result in rejection of their Interests.

4.3 EOI Preparation

The applicant/bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of its applications, in providing any additional information required by Purchaser to facilitate the Application process. The purchaser will in no case be responsible or liable for those costs, regardless of the conduct or outcome of EOI process.

4.4 Late Proposal for EOI

EOI response not submitted on or before the last date and time mentioned in the Document Control Sheet shall not be accepted.

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4.5 Language of EOI

The responses prepared by the Applicant and all correspondence and documents relating to the EOI exchanged by the Applicant and Purchaser, shall be written in English. Any printed literature furnished by the Applicant in another language shall be accompanied by a notarized English translation, in which case, for purposes of interpretation of the EOI, the English translation shall govern.

If any supporting documents submitted are in any language other than English, translation of the same in English language is to be duly attested and notarized by the Applicant.

4.6 Amendment of EOI Document

At any time prior to the Application Due Date, Purchaser may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the EOI Document by the issuance of Addenda posted on the website: <http://jharkhandtenders.gov.in>. The Management has right to cancel the tender at any time.

To provide the Applicants a reasonable time to examine the Addendum, or for any other reason, Purchaser may, at its own discretion, extend the Application Due Date.

5. Broad Scope of Work

5.1 Description of the Project

Jharkhand State Beverages Corporation Limited (JSBCL), Government of Jharkhand intends to establish a monitoring system in the State for various revenue sources of the Department, which is essential for revenue augmentation, improving the service delivery, achieving the development goals of the Department and to stop the illegal Excise Practices as well as illegal transportation of Liquor. This initiative supports the Department in achieving a reasonable progress in parameters such as maintaining a database pertaining to Excise, registered agencies, tracking and monitoring the movement of brands, payment processes, online challan generation, recovery procedures, and so on. Currently, the processes are managed manually. As a result, monitoring & reporting is delayed and there is no end to end IT based solution which can reduce the manual intervention and thus helps in effective monitoring system.

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As a result, it becomes difficult for the Department to keep track of the actual quantity of materials transported in the State. The deliberations during various consultations with the Department personnel (several internal deliberations and consultations) led to the notion of integrated IT enabled process and technology. The need for an integrated and sound monitoring system has gained significant attention in the recent years and will be considered a necessary condition for assisting government decision makers in performing their jobs effectively, efficiently, and economically. The objectives and coverage of the IT enabled system and technology interventions are enunciated in this document.

5.2 Areas of Intervention

As the State of Jharkhand expands its network of available into all Manufacturing Units, Excise/JSBCL Godown and Retail Shops, it is imperative that checks and measures be put in place to ensure all Excise activity is undertaken within the scope of approval of Excise clearance and safeguard the interest of the state exchequer. Moreover, the balance of activity in Manufacturing Units, Godown, Excise Transportation, Retail Shops needs to be maintained by tracking the quantity, quality, and Stocking of materials by the Manufacture, Suppliers and Brand owners. Following are the areas where Technology intervention is needed:

- a. To check that online excise registered vehicles with the Department can only enter the licensee manufacturing Units and in case vehicle other than registered vehicle enters the vicinity of authorized units, immediate alerts shall be generated through suitable online services and technology.
- b. An IT based solution which keeps an eye on every movement conducted at entry and exit locations of each manufacturing unit, Excise Godown, retail shops and during transportation.
- c. Unadulterated and in-full transport of manufactured material from manufacturing Units to JSBCL Godown and delivery point.
- d. Monitoring and capturing of illegal transportation of materials on prominent locations like National Highway/State Highway/District Roads and Interstate border checkpoints.
- e. Monitoring of all such activities from integrated central command and control center which needs to be set up by the Successful Bidder along with the provision of

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the workforce. Indicative and Broad components of the CC&CC shall include at least a minimum of 40 LED Screens of at least 55 inches and above, minimum 3500 CCTV Cameras with two-way audio video to be installed at retail shops. Desktops with the latest configuration, Office furniture to be used in the CC&CC, Routers, Firewall, Blade Servers, Air conditioners, UPS with inverter and battery banks, Internet Bandwidth, Software for analytics, Operating systems, and Automatic Number Recognition etc.

- f. Automated penalty/challan generation software-based solution with provision to pay challan through different hassle-free modes.
- g. Sensors are used to detect vehicles carrying illegal materials throughout the State along with overloading of vehicles.
- h. Using IT technology, the authenticity/validity of vehicles entering from adjoining State shall be checked through online software track & trace solution.
- i. Detection of illegal material/brands in the vehicle using AI technology or any.
- j) All the hardwares / equipments used for this project must be of best quality complying Indian Standards.

5.3 Objectives of the department

IT solutions and Technology Interventions are aimed at supporting in addressing the following key priorities and objectives of the Department:

- a. Better realization of revenue from available alcoholic brands in the State.
- b. Registration of all the vehicles entering and exiting the Manufacturing Units, Excise Godown.
- c. Prevent leakage of revenue through evasion attempts, pilferage, or illegal sourcing of material.
- d. Generating timely, reliable, and accessible information to catch vehicles involved in illegal transportation of spirit and materials.

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- e. Catching vehicles carrying unauthorized materials from manufacturing Units of Jharkhand State or unauthorized vehicles entering Jharkhand State without having excise permit/ transit pass/transport permit slip of other State.
- f. Strengthening external oversight of public expenditure linked to sales performance activities in retail shops.
- g. Prevent / Control Loss of revenue due to illegal manufacturing, transportation without approval of Excise, non/short realization of penalties from manufacturing units' owners, short realization of revenue, non-levy of penalty for illegal uses of materials etc.,
- h. Monitoring of vehicles transporting materials with relevant Technology.
- i. Regular surveillance of approved manufacturing units, excise Godown, retails, and entry of only registered/authorized vehicles in such units.
- j. Night Mode Surveillance of illegal, sales, transportation of materials and activities across the manufacturing Units and retails
- k. Integration/Digitization of new initiatives with existing portal of Dept.

Note: The above-mentioned scope is indicative in nature and the bidders are free to propose any additional point/ module/ solution which can be helpful to attain the overall objective of monitoring and managing excise activities and curbing the illegal manufacturing and distribution through proper surveillance.

Once IA/ Successful Bidder is selected, it will be his responsibility to manage end to end IT hardware/ software operations for the Purchaser so that suitable decisions shall be taken to curb the illegal excise activities, and everything shall be managed and monitored in a proper way.

6. Evaluation of EOI

6.1 Pre-Qualification Criteria

Before opening and evaluation of their technical proposals, bidders are expected to meet the following pre-qualification criteria. Bidders failing to meet these criteria or not submitting requisite supporting documents / documentary evidence for supporting pre-qualification criteria are liable to be rejected summarily.

| SN | Eligibility Criteria | Supporting documents |
|----|----------------------|----------------------|
|----|----------------------|----------------------|

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Bidder should be a legal entity i.e. either of the following:

- A company registered under the Indian Companies Act. 2013/ 1956 OR,
- Joint Venture/Consortium (with minimum of Two Partner) only when one firm must be in similar nature of business and IT firm of CMMI Level III and above and lead partner must have stake of 60 %.
- Company objects to be pursued clearly mentioned on its incorporation as above scope of works.

Note: The liability of the lead Partner will be binding and cannot be changed after award of work till the contract period i.e. No exit will be allowed.

Any relevant document to prove that the bidder is a legal entity like Certificate of Incorporation, Certificate of Registration, MOA, AOA, etc.

Note: In case of a Joint Venture/Consortium, a copy of Memorandum of Understanding (MoU) executed by the JV/Consortium members along with the complete details of the members of the JV/Consortium Company, roles and responsibilities, financial division, contractual obligations, their technical expertise etc.

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| 2. | <p>The Bidder must have technical expert man force in developing Central Command and Control Systems, Trace & Track solutions, CCTV Surveillance, cashless payment systems and GPS based tracking in their payroll since last three years. Proof must be submitted in form of salary slip, EPF, ESIC return.</p> <p>The Bidder has the necessary infrastructure, including skilled personnel to execute the project effectively.</p> <p>General Features:</p> <p>The system should have minimum General Features of Monitoring, Reporting, and Analytics of ongoing Surveying / Surveillance projects.</p> <ul style="list-style-type: none"> • Workflow and process automation • Survey and Mapping/Planning/GIS functionalities. • Surveillance & reporting tools • Control & Command Center • Tracking Drone/Vehicle activities. <p>Technical Demonstration of required features in a single platform with source code.</p> | <p>Work orders/ Agreement along with the completion certificate or CA Certificate confirming receipt of at least one payment for the submitted project. Submitted documents should clearly mention the year of work order/agreement and cost of the project.</p> <p>Note: In the case of Joint Venture/ Consortium, cumulative experience of all the partners will be considered having not less than experience of 50% by any of the partner.</p> <p>OEM declaration on platform deployment Certificate and OEM implementation certificate required.</p> |
| 3. | <p>The bidder should have a minimum annual average turnover of Rs. 5 Crore in IT related business in any the last three financial years i.e., FY 2020-21, 2021-22 & 2022-23 for which bidder's accounts have been audited.</p> | <p>Audited Financial Statements OR Certificate from statutory auditors clearly certifying the turnover requirements.</p> <p>Note: In case of Joint Venture Consortium, annual turnover of a Partner shall be considered.</p> |
| 4. | <p>The bidder must have minimum CMMI level 3 maturity level of process areas.</p> <p>VA and Communication Systems OEM/ISV should have authorized presence in India either directly or through channel partner(s) for after</p> | <ul style="list-style-type: none"> • The bidder to submit/ upload self-attested copy of valid CMMI Certificate • The bidder to give declaration online and provide required ir |

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| | | |
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| | sales/service as on the date of floating the EOI | cluding organization Name, Address and Contact Details |
| 5. | <p>The bidder shall submit the undertaking that the bidder: -</p> <ol style="list-style-type: none"> a. Has not ever been under a declaration of ineligibility for corrupt or fraudulent practices and should not be blacklisted by any State Govt. / Central Govt. / Board, Corporations and Government Societies / PSU for any reason. b. Has not been ever insolvent, in receivership, bankrupt or being wound up, not have its affairs administered by court or judicial officer, not have its business activities suspended and must not be the subject of legal proceedings for any of the foregoing reasons. c. And their directors, partners and officers have not been involved of any criminal offense related to their professional conduct or the making of false statements or misrepresentations as to their qualifications within a period of three years as on date of submission of bid or not have been otherwise disqualified pursuant to debarment proceedings in present firm or any of the sister concerns. | Self-Certified letter |

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| SN | Eligibility Criteria | Supporting documents |
|----|---|--|
| 6. | The bidder should have valid GST registration certificate and PAN in the name of bidder. | Self-certified copy of relevant valid certificates. In case of JV/ Consortium, both the members to submit the same. |
| 7. | The signatory signing the bid on behalf of the bidder should be duly authorized by the Board of Directors / Partners of the bidder to sign the bid on their behalf. Further, bidders must provide the contact details of signatory signing the bid. | Authorization letter |
| 8. | The bidder should have positive net worth for any of the last three audited financial years i.e. 2020-21, 2021-22 and 2022-23. | Certificate duly signed by statutory auditor of the bidder confirming the net-worth or by CA. * In case of Joint Venture, both the partners should have the positive net worth and net worth of both partners will be considered accordingly. |

Note: i) Companies not registered in India will have to register in India under Companies Act 2013 prior to Submission of RFP.
The bidder may rely on the experience of its Associate(s)/ Parent Company or vice versa to qualify the Technical and Financial Experience requirements. A certificate shall be provided, if applicable. However, the experience as Sub- Contractor is not acceptable.

- ii) The successful bidder will be bound to open Branch Office in Ranchi Jharkhand after award of work within one month.
- iii) The Company having experience of monitoring of liquor sales through CCTV shall be given preference.

6.2 Technical Note followed by Presentation and Discussion

Interested Bidders are advised to study this EOI document carefully before submitting their "Technical Note" in response to the EOI document. Submission of the "Technical Note" in response to this EOI shall be deemed to have been done after careful study

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and examination of this document with full understanding of its terms, conditions, and implications. "Technical Note" must be uploaded not later than the last date and time for submission of EOI as defined in the Document Control Sheet of this document. "Technical Note" that is received after the deadline will not be considered in this procurement process.

In this respect interested bidders need to submit a "TECHNICAL NOTE" followed by Presentation to Purchaser covering the following aspects: The proposal should address the points as mentioned in the "Scope of work" regarding Supply, Installation, Operation & Maintenance of establishing Central Command and Control Center, fully Smart Solution (RFID, CCTV, Sensors, Cameras, Boom Barrier etc.) for real time excise management and Surveillance. Both the technical note and Presentation to be uploaded on the eProcurement portal i.e. <http://jharkhandtenders.gov.in> along with the qualification bid.

1. Technology options with tentative cost (Both Capital Cost and O&M Cost)
2. Hardware required for the project along with the configuration.
3. Software/ Tools required for the project along with the versions in which it will run.
4. Make and Model along with the Technology of the cameras required and why.
5. Technology innovation in the proposed Technology over other existing technologies.
6. Previous experience of the proposed technology/ Methodology /Business model and issues faced therein.
7. Process & Instrumentation diagram for the proposed system.
8. Guaranteed quality and what kind of analytics can be achieved.
9. Area of Space required for setting up the hardware on each site such as Manufacturing Unit, Excise Godown, Excise Headquarter, and Retail shops.
10. Time required for Supply, installation, and commissioning of the complete solution.
11. Methodology for Operation and maintenance of complete Maintenance of complete setup.
12. Safety Methodology
13. Conformity to environmental norms.
14. Exceptions to the input quality proposed.
15. Provisions for accommodating increased number of sites.
16. Any other points deemed necessary.
17. PPP options available and the appropriate model to implement this project.
18. Scope of revenue generation
19. Relevant case studies (Not older than seven years from the date of submission of EOI)
20. List of inputs required by the Bidder from Purchaser.
21. Understanding of the work domain.

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The selection process shall include the issue of an open RFP; This EOI is for identification/ finalization of availability of technology and methodology.

Quality Score Matrix

| No. | Factors | Maximum Marks | Parameters |
|-----|---|---------------|---|
| 1 | Solution/Platform should have been successfully implemented in India. | 30 | <p>The Proposed Platform for JSBCL in this EOI should have been implemented in any projects (completed in the last 5 years) meeting the following requirements.</p> <p>The value of the Project is at least Rs. 1.5 crore Integrate a minimum of 3 out of the following 5 systems in each contract.</p> <ol style="list-style-type: none"> 1. IoT instruments like CCTV/Controller/Grid etc. 2. Boom Barriers/ Track & Trace 3. ERP or Workflow (SoP) 4. Automation systems/Application (PLC/Actuators etc.) 5. Data Lake/ Data Warehouse <p>Documents to be provided for each contract mentioned: Declaration/Installation Certificate from OEM.</p> <p>Annexure duly verified and certified by first class magistrate or Notary Oath Commissioner which is registered in Jharkhand. All the charges for attestation and verification shall be borne by the bidder</p> |
| 2 | Bidders' Certification for Service Delivery | 20 | <p>Bidder organization's Service level Certification for Bidders</p> <p>CMMI Level 3: 15 marks CMMI Level 4 and above: 20 marks</p> <p>Documents to be provided: Provide self-attested copy of the valid certification</p> |
| 3 | Demonstration of Platform | 30 | <p>CC&CC platform capabilities and its features in line with the requirement of functionalities:</p> <p>Exception creation based on event at platform and execution, Complete end to end cycle.</p> |

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| | | | |
|---|---|------------|--|
| | | | <p>Bidders are required to demonstrate the functionality / feature mentioned above along with examples / use cases of platform deployment.</p> <p>Bidders are required to upload solution document (if any) relevant to the demonstration at the time of bidding on JSBCL procurement portal.</p> |
| 4 | Demonstration of Video analytics | 10 | <p>Video Analytics of following 5 use cases with minimum 90% accuracy using video feed (live/recorded) Intrusion Detection: Vehicle Count/Queue Management Automatic Number Plate Recognition (ANPR)</p> <p>Bidders are required to demonstrate the use cases mentioned above along with examples of solution deployment.</p> <p>Bidders are required to upload solution document (if any) relevant to the demonstration at the time of bidding on JSBCL procurement portal.</p> |
| 5 | Demonstration of Capabilities of Bidder and quality of approach | 10 | <p>Bidders are required to make presentation on 3 case studies demonstrating its capabilities of implementation of the proposed or similar platform as per criteria 1 mentioned in this section. Each case study to be evaluated.</p> <p>Bidders are required to capture the following points during their presentation: Implementation Approach Integration Approach (Type of integration) Number of systems/tags/instruments handled</p> |
| | Total | 100 | |

Demonstration:

1. The Bidder Presentation/Demo shall be conducted at a location (physical/virtual) decided by JSBCL at a later point of time. All costs including cost of travel, cost of setting up the presentation etc. shall be borne by the Bidder.
2. The bidder shall set up all required software in a cloud environment and shall show-case product demo at JSBCL premises.
3. The Bidder's responses shall be appropriately recorded and scored.
4. The decision of the JSBCL's Evaluation Committee shall be final and binding in this regard.

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Disputes & Resolutions:-

In case of any disputes during the contract period will be settled at Ranchi Court only.

Data Security:-

No feed or data will be shared with anybody without prior approval of the JSBCL. If found legal action will be taken against the firms as per IT norms and the firm will be blacklisted.

Period of Contract:-

The period of contract shall be of three years which shall be extendable upto next two years subject to satisfactory performance of the agency.

7. Annexure & References

Annexure A - Formats for submission of Expression of Interest

| | |
|---|--|
| Name of the Company | |
| Registered office | |
| Postal Address | |
| Tel./Fax/e-mail | |
| Type of Firm (Work area that the firm is involved in) | |
| Details of registration Company etc. | |
| Authorized Signatory Name: Designation: Qualification: With the company since: Line of experience/expertise: | |
| A copy of PAN should be submitted. A copy of Aadhaar should be submitted | |
| GST registration certificate should be submitted | |

Signature of Authorized Representative*

(with seal)

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Annexure B –Template for query Submission

The queries must be submitted in the following format only. Also, the same should be submitted to the email id in form of excel format only in desired format:

| Name and Address of the Organization submitting query | | Name and Position of Person submitting query | Contact Details of the Organization/Authorized Representative |
|---|----------------------------------|--|---|
| | | | Tel: Mobile: Fax: Email: |
| Sr. No | EOI Reference(s) (Section, Page) | Content of EOI requiring clarification | Suggestion with Justification |
| | | | |
| | | | |

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Annexure C – Format for Declaration

On company Letter head

Date: XX/XX/XXXX

To,

General Manager,
Jharkhand State Beverages Corporation Limited,
Utapad Bhawan, Naveen Police Line, Kanke Road,
Ranchi-834001

Subject: Self-Declaration

Dear Sir,

I/We hereby declare that as of date, (Name of the firm/company)

- a. Has not ever been under a declaration of ineligibility for corrupt or fraudulent practices and should not be blacklisted by any State Govt. / Central Govt. / Board, Corporations and Government Societies / PSU for any reason.
- b. Has not been ever insolvent, in receivership, bankrupt or being wound up, not have its affairs administered by court or judicial officer, not have its business activities suspended and must not be the subject of legal proceedings for any of the foregoing reasons.
- c. And their directors, partners and officers have not been involved of any criminal offense related to their professional conduct or the making of false statements or misrepresentations as to their qualifications within a period of three years as on date of submission of bid or not have been otherwise disqualified pursuant to debarment proceedings in present firm or any of the sister concerns.

Sincerely Yours

(Signature of Authorized Signatory)

Name:

Title:

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Annexure D- Financial Bid

On company Letter head

Date: XX/XX/XXXX

To,

**General Manager,
Jharkhand State Beverages Corporation Limited,
Utpad Bhawan, Near Naveen Police Kendra,
Kanke Road, Ranchi-834001**

Subject: Financial Bid-

Dear Sir,

We hereby submit that we (Name of the firm/company), proposed following monthly service charge for entire project which includes the supply, installation, implementation & maintenance with real time feed at desired locations as:-

| S. No | Particulars | Monthly O & M Charges inclusive pf all taxes in INR |
|-------|--|---|
| 1. | Implementation of Central Command & Control Centre which includes supply of necessary hardwares, softwares, installations, operation and Maintenance on Opex model | Numeric Value :- In Words |

Note: - JSBCL will not pay any other charges apart from the financial proposal in any incident/circumstance.

Yours Sincerely

(Signature of Authorized Signatory)

Name:

Title:

Annexure-F

A. Specifications for CCTV & CVMS

1. 2MP IP Dome Camera

2MP IP Dome Camera with Fixed Lens:

Image Sensor 1/2.7 inch Progressive Scan CMOS

Max. Resolution 1920 × 1080 25/30fps,

Min. Illumination Colour: 0.005 Lux @ (F1.6, AGC ON), B/W: 0 Lux with IR, Fixed

Lens: 2.8/4mm Lens, IR up to 40m,

WDR 120dB, BLC, 3D DNR, SNR > 50dB

Edge Analytics : Motion detection, video tampering alarm, Line crossing detection, intrusion detection.

Power : 12 VDC, PoE: 802.3af, Class 3, IP67, IK10

Certification CE, FCC, RoHS, UL/BIS

2. 2MP IP Bullet Camera

2MP IP Bullet Camera with Fixed Lens:

Image Sensor 1/2.7 inch Progressive Scan CMOS

Max. Resolution 1920 × 1080 25/30fps,

Min. Illumination Colour: 0.005 Lux @ (F1.6, AGC ON), B/W: 0 Lux with IR, Fixed Lens: 4mm

Lens , IR up to 40m,

WDR 120dB, BLC, HLC, 3D DNR, SNR > 50dB

Edge Analytics : Motion detection, video tampering alarm, Line crossing detection, intrusion detection.

Power : 12 VDC, PoE: 802.3af, Class 3, IP67.

Certification CE, FCC, RoHS, UL/BIS

3. 4 Ch. NVR

4 Ch. NVR with 1x4TB SATA Surveillance HDD:

Resolution Support upto 4MP, Decoding Format - H.265, H.264,

Incoming / Outgoing Bandwidth - 40Mbps/60Mbps,

Network Protocol TCP/IP, DHCP, DNS, DDNS, NTP, SADP, SMTP, UPnP,

2 x 2.0 USB Port, 1 SATA Port, support upto 6 TB HDD

Certification BIS

4. 5MP Dome Camera

5MP Dome Camera with Fixed Lens

Image Sensor 1/2.7" Progressive Scan CMOS, 2560 × 1920 15fps, 2560 × 1440 20fps,

Min. Illumination Color: Color: 0.01 Lux @ (F1.2, AGC ON), 0.028 Lux @ (F2.0, AGC ON)

with IR , Focal Length 2.8/4 mm,

IR up to 40 m,

WDR 120db, BLC, 3D DNR, SNR

Power 12 VDC, PoE: 802.3af, Class 3

Protection IP67, IK10,

Edge Analytics: Line crossing detection, intrusion detection, Motion Detection, Video Tampering

Certification CE, FCC, RoHS, UL/BIS

5. 5MP Bullet Camera

5MP Bullet Camera with Fixed Lens
 Image Sensor 1/2.7 Inch Progressive Scan CMOS, 2560 × 1920 at 12 fps/ 1920 x 1080 at 25fps,
 Min. Illumination Color: 0.01 Lux @ (F1.2, AGC ON), B/W: 0.028 Lux @(F2.0: AGC ON), Fo-
 cal Length 4 mm,
 IR up to 40 m,
 WDR 120db, BLC, 3D DNR,
 Power 12 VDC, PoE: 802.3af, Class 3, Protection IP67,
 Edge Analytics : Line crossing detection, intrusion detection, Motion Detection, Video Tampering
 Certification CE, FCC, RoHS, UL/BIS

6. 8 Ch NVR

8 Ch NVR with 2x4TB SATA Surveillance HDD,
 Resolution Support upto 4MP, Decoding Format - H.265, H.264,
 Incoming / Outgoing Bandwidth - 80Mbps/80Mbps,
 Network Protocol TCP/IP, DHCP, DNS, DDNS, NTP, SADP, SMTP, UPnP,
 2 x 2.0 USB Port, 2 SATA Port, support upto 8 TB HDD
 Certification BIS

7. Video Wall

| | |
|---------------------------------|--|
| 4K Video Wall Display | 55" 4K, HDMI × 1, DVI × 1, VGA × 1, DP× 1, USB × 1 input, HDMI × 1 output. view angle : Horizontal 178°, Vertical 178° |
| Stand mount- Frame: | Frame for 55" LCD Display Video wall |
| Stand mount- Pedestal: | Pedestal/Base for 55" LCD Display Video wall |
| Wall Mount - | Modular Wall Mount Bracket, suitable for all Video Wall Panels |
| Decoder for Video Wall Function | Decoder, support output: 16*HDMI/8*BNC, Input: VGA/DVI/RJ45, HDMI support 3840*2160@30Hz, decoding 128ch 1080p, 36 division. |
| 7MTR HDMI Cable | HDMI Cable |

8. Video Wall Server

| Item | Minimum specification |
|----------------------|---|
| Make & model | |
| Form factor | Tower |
| Processor | Intel® Xeon® E-2224 (4C, 3.40 GHz, 8MB, 71 W) or better |
| Memory / total slots | 16 GB, total 4 DIMM slots or higher |
| RAID Controller | Hardware RAID controller 1 supported or above |
| Disks configured | 1TB SSD / SATA |
| Disk bays | 4 disk bays supporting |
| I/O slots | 3 Nos. PCIe 3.0 slots and M.2 slots or better |
| Ethernet ports | 2 x 1G baseT ports |

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| Item | Minimum specification |
|-------------------|--|
| Certification | Windows |
| Management | 1 X RJ 45 management LAN port. |
| Server security | IPM Header and TPM 2.0 module (LPC Interface) |
| Power supply | 500W (80Plus Bronze) Fixed or better |
| Accessories | 23.8" IPS Monitor, Keyboard & Mouse. |
| Operating Systems | Windows Server 64 Bit latest edition |
| Warranty | 3 years comprehensive OEM warranty. |
| OEM ISOs | ISO9001, ISO20001, ISO50001, ISO14001 & ISO27001 |
| Operating System | Window Server 2022 Std. |

9. **Workstation for VideoWall**

| Technical Specification | Items | Descriptions |
|-------------------------|---------------------------|--|
| Processor | Processor Model | Intel Core i7-13700 or higher |
| | No. of Core per Processor | 16 core and higher with minimum 24 Thread |
| | Processor Frequency | Minimum 2.1 Ghz |
| Memory | Chipset | Compatible Intel W Series with vPro. or higher |
| | Memory | 32 GB (minimum 2 DIMM slot Should be Open) |
| | Memory Type | DDR5 Memory with expandibility 128 GB or Higher |
| | Memory Speed | Speed should be 4800MHz or better |
| Storage | Storage | 1TB HDD (7200 RPM or Above) or higher and 512GB SSD NVMe with RAID level |
| | Graphic card | Dedicated Enterprize level graphic card |
| Graphic | Graphic Memory Size | NVIDIA T1000 8GB DDR6 or higher |
| | Operating System Model | Windows 11 Professional |
| Monitor/ Display | Display Size | Min 21.5" or higher |
| Screen | Display Type | FHD with IPS Or higher with resolution 1920x1080 Or higher |
| Features | Speakers | Inbuilt Integrated speakers with the Monitor |
| | Audio in | Integrated Audio |
| | Optical Drive | Yes |
| | Keyboard & Mouse | Yes |
| Connectivity Ports | Wireless | Yes, 802. 11ac wireless |
| | Communications | Yes, 1 Gb/s (10/100/1000) BASE-T LAN Port, support Intel vPro®) & 2.5 Gb/s (10/100/1000) BASE-T LAN Port |
| | USB 3.0 / 3.1 gen 2 | Total 12 Port and above - Minimum 4 Number of USB Version 3 point 2, Gen 1 Ports, 1 USB 3.2 Gen2 Type-C (10Gbps) Port and 1 USB 3.2 Gen2x2 Type-C (20Gbps) Port. |
| | HDMI | 1 HDMI 2.1 Port |
| | Display Port | Minimum 2 DP 1.4 Ports |

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|--------------------------|--|--|
| | VGA | Yes |
| Expansion slots | PCIe / PCI | Minimum 4 Nos. Or more |
| Security | Management & Security | Integrated TPM v2.0 (Hardware) |
| Raid | Drive Controllers | Integrated SATA3 controller with minimum 4 x 6Gbps ports & SATA Controller should support RAID 0, 1, 5, 10 for Windows only. |
| Communication | Audio | 5.1 CH HD Audio |
| Bays/Slot | Internal / External | With Minimum 4 Bay (one for SSD only) and Minimum 2 M.2 2280 PCI-E 4.0 slots (For SSD) & 1 M.2 2230 PCI-E 3.0, E Key for Wi-Fi & Bluetooth |
| OS | Details with features | Genuine Win 11 Pro 64 . All drivers required for proper integration of components should be supplied by the vendor. |
| Form Factor | Form Factor with Tool free design | Tower |
| Power Spully | Power Supply, Efficiency and certification | Min 500W wide-ranging, 80PLUS® Gold Power Supply or Higher |
| Warranty | Spare , support and Services | 3 years onsite parts and labour warranty for system |
| Vendor Status | Vendor should have ISO certifications. | ISO 9001,14001,20001,27001 and ISO50001 for OEM |
| Certification | Category | Window OS Certification, EPEAT Registred , Energy Star 8.0, ROHS Compliant, FCC, CE, CB and Adobe/SOLID Works Certified. |
| Presense & Market leader | Global | OEM should have global presense and should have registered office in India. |

10. Video Management Software

| Sr. No. | General Parameters |
|---------|--|
| 1 | The IP Video Management Software should allow Live Viewing, Recording and Management solution of Network Video surveillance systems & shall not have any Limit on the Number of Cameras to be Connected & shall be Scalable to Unlimited IP Cameras in Future by Augmentation of Camera channel Licenses & server Hardware Components. |
| 2 | The Open Platform Video Management Software (VMS) Application, should be Brand Agnostic, should not be from the same Camera OEM & should support various third Party ONVIF IP Cameras, this is Compulsorily required so that the Same VMS Applications can be scaled up in future by just Adding third Party IP Cameras & Additional Software Licenses. |
| 3 | The Video Management Software shall be Client-Server based IP Video security solution that shall provide seamless management of Digital Video, Audio and data across an IP network. The video management Software shall provide full virtual matrix switching and control capability. Video from sites shall be possible to view from single or numerous |

| Sr. No. | General Parameters |
|---------|--|
| | workstations simultaneously at any time. Cameras, recorders, and viewing stations may be placed across the terminal in the IP network. |
| 4 | The Offered VMS Software should be ONVIF S, G, T & M Profile Compliant. The Profile Conformant Details shall be available on ONVIF Official Website www.onvif.org from last 2 years. |
| 5 | Video Management Software should have been deployed Min. 25000 VMS license in the government Project within India in last 3 years. Make in India Product shall be preferred. |
| 6 | The IP Video Management Software shall be Licensed & Perpetual Licenses to be Provided, such that they are Valid for Lifetime. |
| 7 | The VMS shall be Windows based. |
| 8 | The VMS shall support iPad, Android and iPhone devices & shall also support web clients. |
| 9 | The Video Management System shall be a fully distributed solution, designed for limitless multi-site and multiple server installations requiring 24/7 surveillance with support for devices from different vendors. The Video Management System shall offer centralized management of all devices, servers and users and must empower a flexible rule-based system driven by schedules and events. |
| 10 | The VMS system shall be a scalable client – server architecture built using well known operating systems |
| 11 | The VMS management server shall be able to intelligently scan an IP network for new devices (cameras or servers) along with automatic model detection. |
| 12 | The VMS system shall provide an integrated secure, scalable and easily accessible software-based solution for the management of the existing & future physical security infrastructure |
| 13 | The VMS system shall provide a powerful and efficient management interface for all the security systems across all monitored sites. |
| 14 | The Video Management System shall contain recording servers used for recording video feeds and for communicating with cameras and other devices. The recording servers shall process the recordings and playback the video streams. |
| 15 | The management server shall allow access to a system manager in the form of Configuration Client from where the administrator can configure and manage all servers, cameras and users. |
| 16 | The Video Management System shall allow an unlimited number of cameras to be connected to each recording server and an unlimited number of recording servers to be connected to each management server across multiple sites, if required. |
| 17 | The Management Services of the VMS software MUST come as one unit and not multiple loadable units on Multiple Individually Configurable Servers, the Management Server shall be loaded on a Single Machine, from which all the Cameras, Additional Recording Servers, & Viewing Clients, shall be managed Centrally. |
| 18 | The video management system shall be capable of managing multiple recording manager systems. |
| 19 | It shall be possible to assign encoders and IP cameras to recording manager/Server |
| 20 | The VMS shall be based on a true open architecture that shall allow the use of non-proprietary workstation and server hardware, non-proprietary network infrastructure and non-proprietary storage. |
| 21 | Recording Parameters |

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| Sr. No. | General Parameters |
|---------|---|
| 22 | Should record H.265+, H265, H.264, MPEG4 or MJPEG in at minimum 5 fps to 30 FPS at minimum CIF to Full HD (1080p) and 4K resolution. |
| 23 | Supports RTP over UDP, RTP over TCP and http streaming |
| 24 | Should support multiple brand IP cameras and encoders. |
| 25 | Should support dual streaming, with Streaming and recording at different qualities of videos. (Min. different Streams should be available in the Cameras.) |
| 26 | Option to do recordings on NAS, SAN, Cloud Storage, iSCSi, DAS, local or network drive. Defining different drive for each individual camera. |
| 27 | Should have ability record audio along with video in same recording file. |
| 28 | Option to define multiple recording paths |
| 29 | Pre-buffer and Post buffer recordings up to 10 minutes. |
| 30 | Calculate storage size based on number of cameras, days and drives available in the system |
| 31 | Option to record at low frame(I-frame) and high frame rate on Motion |
| 32 | Export the desired portion of video in mp4, avi and asf formats in DVD/USB or any external device. Viewing of this recording must be playable on authorized player which shall be provided by software manufacturer or in media player on OS Windows, Linux/Unix or Apple Mac. |
| 33 | Export recording possible in client and remote PC also with proper authentication. |
| 34 | Option for Window-Pop up, Email, Sound alarm, Whatsapp, SMS on recording/ video loss or any event. |
| 35 | Storage and Bandwidth calculation: Recoding size estimation for each hard disk attached to the server. Option to check disk size of individual camera. |
| 36 | Image Enhancement on recorded videos. The image enhancement should be able enhance videos of fog, rain and low light conditions. |
| 37 | VMS software should have option for email and SMS/Whatsapp Gateway integration |
| 38 | Automatic archiving after set number of days and automatic recording deletion after disk full. |
| 39 | Edge Recording Synchronization: VMS Server and Camera should sync recordings in case of network or other communication failure between camera and VMS, through ONVIF G Profile |
| 40 | Encryption: Ability to encrypt video while exporting. Options of 56 bit, 128 bit and 256 bit encryption |
| 41 | Export of videos Synopsis based on events in a particular time period |
| 42 | Export of Signed video using public/private key |
| 43 | The Proposed VMS Solution Shall support native Fail over with in the application with no dependency on any external application for both hardware and application redundancy. Solutions with external clustering like Windows Clustering, Microsoft SQL Clustering and VMware or Hyper-V etc. should not be proposed. The native failover architecture must be for both management and recording servers. |
| 44 | The Fail over and Fall-back management and recording Server shall be on hot standby, ready to take over during the primary management server fails. No manual action from the user shall be required. The fail over time should not be beyond 30 Seconds. |
| 45 | Live, Playback & PTZ Control Parameters |
| 46 | Live View possible for minimum 100+ cameras simultaneously on 1 screen or multiple monitors using software video wall. |

| Sr. No. | General Parameters |
|---------|--|
| 47 | Configurable Matrix views with size and number of cameras. Pre-defined views from full screen, 1x1 to 8x8. |
| 48 | View sequencing with user driven time interval. |
| 49 | Dual Streaming and Automatic Switching from Low to High Quality on Full screen mode. |
| 50 | Option to change Live View directly from cameras or from VMS server using RTSP and HTTP options |
| 51 | It should support live view and Playback from minimum 10 clients- Both local and remote |
| 52 | It should support event based playback. |
| 53 | Client System shall have a inbuilt Alarm/Incident Management Dashboard to view all Edge Analytics and ANPR applications events |
| 54 | Ability to search based on Date/Time/Camera, Name, ID and Location for more than one camera simultaneously. |
| 55 | Customized camera views based on: User input number of cameras. User chosen shape and size. |
| 56 | Digital Zoom: Both complete live picture and Zoomed picture should be visible simultaneously while zooming. Should be available On Live and Playback Videos. Zoom available on snapshots too. |
| 57 | PTZ PTZ option available through mouse and joystick Gaming joystick as well as PTZ joystick options available On screen PTZ control with Click and Zoom facility PTZ Presets and tours setting |
| 58 | Software should allow creation of multiple camera sequences. It should be possible to set the dwell time for the cameras within the sequence. |
| 59 | Software should allow sequences control (pause/play, skip forwards, skip backwards). |
| 60 | Live view and Playback available at the same time with Playback window running side by side with live view window. |
| 61 | Event window with specific snapshot of that event should be shown simultaneously in Live view screen. Clicking on the event should play recording of that event time. |
| 62 | Image Enhancement available in Playback. Option to sharpen the video image through scrollbar. |
| 63 | Playback Navigation Tree View with Recording server, camera list, year/months list and the date wise play list. |
| 64 | Playback option for frame-by-frame |
| 65 | Playback should have Video lock feature. |
| 66 | Option of Common Timeline for syncing of multiple cameras while playback. |
| 67 | Ability to make bookmark of any portion of video and view list of all bookmarks |
| 68 | Instant Playback and Quick Search of event based recordings. |
| 69 | Event based search: Event based Time line to quickly show coloured dots in Timeline and view recorded videos at the event time. |
| 70 | Playlist with files listed for each date. User can click on a date to play recordings. |

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| Sr. No. | General Parameters |
|---------|---|
| 71 | E-map client should show icon blink and voice alert of the event. Should be able to take snapshots from Google Map if connected to internet. It should be possible to click on icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera. |
| 72 | Two-way audio communication between camera and VMS. Option to send/broadcast Audio to multiple cameras |
| 73 | Mobile Surveillance & Remote Viewing Parameters |
| 74 | Ability to view live video on iOS and Android phones or devices with or without installing proprietary Apps. |
| 75 | PTZ Control on Mobile App and Remote Locations |
| 76 | VMS and Mobile App support for multiple sites spread across WAN to be controlled and viewed from central location. |
| 77 | Remote Administration over internet. |
| 78 | Ability to make a SMS, Whatsapp notification on any alert or alarm |
| 79 | The Mobile App must also Support for Audio Streaming along with Video Streaming. |
| 80 | Streaming Parameters |
| 81 | Option for RTSP, HTTP, RTSP over HTTP streaming or both simultaneously at individual camera level. |
| 82 | Authentication parameters (username, password) for streaming to remote clients. |
| 83 | Administration & Failover Parameters |
| 84 | Automatic discovery of devices using UPnP and/or ONVIF |
| 85 | No software limit on number of cameras supported in single recording server (Any increase in the number of cameras should be possible by augmentation of hardware and license components) |
| 86 | Add all cameras with single click. Apply settings to multiple cameras of same model with single click. |
| 87 | Generate logs & reports in Graphical & Tabular form and export in pdf, excel or more format |
| 88 | Failover- Automatic switch of user selected cameras to back-up server in case of failure. |
| 89 | Automatic Health check-up and activation of optimization modules once CPU reached more than 85%. |
| 90 | Add multiple recording servers under same management server. |
| 91 | User role based cameras and feature access. Define users with passwords and access to only specific cameras |
| 92 | Complete server logs including login access, system settings change, archiving events, video or recording loss and all activity done by administrator or any other user in the system. |
| 93 | VMS control of cameras and monitoring on client workstations shall be done through the administrator interface. |
| 94 | System watchdog feature be available to alert in case of failure of cameras and servers. |
| 95 | Camera Support Parameters |
| 96 | Should support multiple brand IP cameras, encoders, NVR's and DVRs. No restriction on camera hardware. |
| 97 | Should support ONVIF protocol including Profile-S, G, T & M. |
| 98 | Alarm Centre Parameters |
| 99 | Option to view cameras only on alarm. Matrix grid size should change automatically if alarms are generated from multiple cameras simultaneously |

Signature

| Sr. No. | General Parameters |
|---------|---|
| 100 | Automatic or manual reset & close option of video panel |
| 101 | Advance Features |
| 102 | Failover: System should support N: 1 or N: N failover. Failover time should not be more than 30 seconds. |
| 103 | Option to do failover of selected cameras in case of recording server failover. |
| 104 | Option to add multiple recording servers under single Management Server. |
| 105 | The VMS licensing shall require MAC Id of Server/ Recorder only, not of camera devices. |
| 106 | Supports up to minimum 50 clients simultaneously. Separate licensing required |
| 107 | Option to configure video analytics in same client as VMS |
| 108 | External Storage Connectivity & it's Resiliency |
| 109 | The VMS must support for Connecting Multiple External Storage Devices in the form of Primary & Secondary Storage Drive. |
| 110 | It must also have the Option of Storage Drive Redundancy, wherein if the Primary Drive is Unavailable then the VMS Application/Recording Server must Automatically Start Recording in the Secondary Configured Drive. |
| 111 | In Case of Recording has been done in Secondary Storage Drive, during the Failure of Primary Drives then after the Primary is restored the Recording that took place in the Secondary Drive shall be Synchronized in the Primary Drive. |
| 112 | VMS Web Client |
| 113 | The VMS Web Client shall have Dash boarding Capabilities, such that the Dashboard should Support for Drawings/Maps GIS Layer, OSM Layer, AutoCAD Dwg. File .JPEG file format, .PDF file format, Customized Video Grid for Live & Playback of Video & Events Table |
| 114 | The VMS Web Client shall show the Camera details with Key Performance Indicators like, Total Cameras connected, Total Cameras Disconnected, Status Visualization in the form of Pie Chart |
| 115 | The VMS Web Client shall have a Reporting functionality in the form Camera Uptime, Downtime. |
| 116 | The VMS Web Client shall also show the Recording server status Report, Storage Space Available status & Reports. |
| 117 | The VMS Web Client must support for H.265 Codec Live & Playback Streaming. |
| 118 | The VMS Web Client shall support comprehensive data filtering for most reports based on entity type, event type, event timestamp, custom fields, and more. |
| 119 | The VMS Web Client shall support the following actions on a report: print report, export report to a PDF/Microsoft Excel/CSV file, and automatically email a report based on a schedule and a list of one or more recipients. |
| 120 | Video Management Software Pre-Qualification Criteria |
| 121 | The Video Management Software (VMS) Application should be an Open Platform Application & should not be from the Same Camera OEM. |
| 122 | The Video Management Software (VMS) Application shall support Integration with 3rd Party Devices like Physical Perimeter Intrusion Detection Systems (PIDS), Radars, IoT Sensors/Modules & Various 3rd Party Applications. |
| 123 | The VMS OEM should have CMMI v2.0 Maturity Level - 3 and ISO 9001:2015, ISO 27001:2013, ISO 14001:2015, ISO 45001:2018. All certificates should be available online for cross verifications. |

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| Sr. No. | General Parameters |
| 124 | The VMS, Software OEM shall have a direct Registered Office in India without any Collaboration, Joint Venture, Distributor, Parent Company & should be in Operational for the Last 10 Years as on the Last Date of Bid Submission. |
| 125 | The VMS Software OEM shall also have a Dedicated Support, Research & Development (R&D) Centre in India since the Last 10 Years as on Last Day of Bid Submission. |
| 126 | <p>The Intellectual Property Rights & Source Code of Offered Video Management Software (VMS) must not reside in a Country that is sharing Land Border with India.</p> <p>The Video Management Software (VMS) Offered should not be Developed/manufactured by an entity in which the majority shareholding of the entity is from a Country sharing a Land Border with India.</p> <p>OEM shall provide a Declaration about the intellectual property rights & Source Code as a Documentary Evidence & Copyrights Certificate.</p> <p>The OEM who is Claiming to be Make in India OEM with Local Content greater than 50%, then their Intellectual Property Rights (IPR) & Source Code must Reside in India only. Documentary Evidence to be Provided.</p> <p>Any False Declaration can lead to Bid Rejection.</p> |
| 127 | Cyber Security Features |
| 128 | <p>The Offered Video Management Software (VMS) Application should have undergone Audit as per OWASP Top 10 Vulnerabilities & must Possess a Valid Application Audit Certificate from a CERT-IN Empanelled Government Agency/Auditor for the VMS Application, to Mitigate Cyber Security Attacks.</p> <p>The Application must have already undergone Audit Certification/Auditing on or before the Bid Publishing Date.</p> <p>The Audit Certificate must be Submitted as a Documentary Evidence/Proof.</p> |
| 129 | The Video Management Software should support RTSPS or SRTP or RTSP over TLS Encrypted Live Streaming from cameras (If Supported by Cameras) to VMS as well as support streaming of RTSPS or SRTP or RTSP over TLS Encrypted Live Streaming from VMS servers to clients. |
| 130 | FIPS 140-2 compliant mode: The VMS software offered must be cyber security certified with FIPS-140-2 encryption from Indian Government body for mitigating cyber security risk. A Valid Certificate for FIPS 140-2 for the VMS Application to be Submitted as a Proof. The FIPS 140-2 Certification should be done on or before the Bid Publishing Date. |

11. Video Management Server

| Sr. No. | Parameter | Minimum Specification |
|----------------|------------------|---|
| 1 | Processor | 64 bit processor(s) with 2x 24 number of Cores / 48 threads. Processor speed should be minimum 2.80 GHz and 2 processors each |

| | | |
|----|-------------------------------|--|
| | | physical server from day 1. |
| 2 | Memory | Min. 384 GB DDR4 RDIMM, 3200MT/s, Single Rank or better |
| 3 | DIMM Slots | Server should support minimum 32 DIMMS DDR4 memory slots and sclable upto 4TB or higher |
| 4 | Chassis | Minmum available slots 24 x 2.5" SAS/SATA hot-swappable bays for HDD/SSD and 2 X 2.5 SATA/SAS swappable HDD/SSD bays |
| 5 | Hard Disk | Min. 2x2.5" 960GB SATA SSD Drives in RAID 1 |
| 6 | RAID Controller | Hardware RAID controller, should support Raid 0/1/5/6/10/50/60 and have at least 2 GB Cache |
| 7 | PCIe Slots | Minimum 8 slots out of which min 3 should be PCIe X 16 |
| 8 | Ports | Minimum 2 X 1G (RJ-45) on board, 4 X 10G baseT ports & 1 X 1G (RJ-45) dedicated Management port and 4 x USB 3.0 ports, 1 x VGA port. |
| 9 | Keyboard and mouse | OEM keyboard and mouse |
| 10 | Remote Management | Vendor should provide embedded features that helps to manage Servers in physical, local and remote ; Power Management ; Should be able to monitor all systems components |
| 11 | Redundant Power Supply | Redundant, hot-swappable Power Supply 1200W or more from Day 1. |
| 12 | Hypervisor/Software/OS | Should support heterogeneous OS platforms (Microsoft, RHEL Linux, VMWare etc.). Should have Microsoft Windows Server 2022 Standard Edtion or latest OS |
| 13 | Security and service features | Administrator/user password , Power-on password, Setup password |
| 14 | Certifications | CE , FCC , MET, BIS , OEM to have ISO 9000, ISO 14000, ISO50001, ISO 20000 & ISO 27000 |
| 15 | Form Factor | Rack Mount 2U or less |
| 16 | Rails | Must be supplied with sliding rack rails |
| 17 | Warranty | Product should have 3 years on-site comprehensive warranty. |
| 18 | Operating System | Window Server 2022 Std. |

12. Video Recording Server

| Sr. No. | Parameter | Minimum Specification |
|---------|-----------------|---|
| 1 | Processor | 64 bit processor(s) with 2x 24 number of Cores / 48 threads. Processor speed should be minimum 2.80 GHz and 2 processors each physical server from day 1. |
| 2 | Memory | Min. 384GB DDR4 RDIMM, 3200MT/s, Single Rank or better |
| 3 | DIMM Slots | Server should support minimum 32 DIMMS DDR4 memory slots and sclable upto 4TB or higher |
| 4 | Chassis | Minmum available slots 24 x 2.5" SAS/SATA hot-swappable bays for HDD/SSD and 2 X 2.5 SATA/SAS swappable HDD/SSD bays |
| 5 | Hard Disk | Min. 2x2.5" 960GB SATA SSD Drives in RAID 1 |
| 6 | RAID Controller | Hardware RAID controller, should support Raid 0/1/5/6/10/50/60 and have at least 2 GB Cache |
| 7 | PCIe Slots | Minimum 8 slots out of which min 3 should be PCIe X 16 |

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| Sr. No. | Parameter | Minimum Specification |
|---------|-------------------------------|--|
| 8 | Ports | Minimum 2 X 1G (RJ-45) on board, 4 X 10G baseT ports & 1 X 1G (RJ-45) dedicated Management port and 4 x USB 3.0 ports, 1 x VGA port. |
| 9 | Keyboard and mouse | OEM keyboard and mouse |
| 10 | Remote Management | Vendor should provide embedded features that helps to manage Servers in physical, local and remote ; Power Management ; Should be able to monitor all systems components |
| 11 | Redundant Power Supply | Redundant, hot-swappable Power Supply 1200W or more from Day 1. |
| 12 | Hypervisor/Software/OS | Should support heterogeneous OS platforms (Microsoft, RHEL Linux, VMWare etc.). Should have Microsoft Windows Server 2022 Standard Edition or latest OS |
| 13 | Security and service features | Administrator/user password , Power-on password, Setup password |
| 14 | Certifications | CE , FCC , MET, BIS , OEM to have ISO 9000, ISO 14000, ISO50001, ISO 20000 & ISO 27000 |
| 15 | Form Factor | Rack Mount 2U or less |
| 16 | Rails | Must be supplied with sliding rack rails |
| 17 | Warranty | Product should have 3 years on-site comprehensive warranty. |
| 18 | Operating System | Window Server 2022 Std. |

13. Video Recording Storage

| Feature | Description |
|-------------------------------|---|
| Storage Quality Certification | The Storage OEM should be established in the Gartner Leader Quadrant |
| Storage Controller | The Storage Solution should be based on multiple controllers with Data Assurance in active-active mode configured in a NSPOF and End-to-End Data Protection. |
| Cache required | The system should have minimum 64 GB cache memory across the two controllers with an ability to protect data on cache if there is a controller failure or power outage. The cache on the storage should have 72hrs or more battery backup (OR) should have destaging capability to either flash/disk. The system should also offer extended cache based on SSD. |
| Drive Support | The system must support intermixing of dual ported 12 Gbps SSD, SAS and NL-SAS drives to meet the capacity and performance requirements of the applications. |
| Protocols | The storage should be configured with FCP & iSCSI protocols. Any hardware/software required for this functionality shall be supplied along with it in No Single Point Of Failure mode. System should also support SAS, protocol & connectivity. |
| RAID configuration | Should support various RAID levels 0, 1, 5, 6. |
| Storage Capacity | 900 TB usable storage capacity with NLSAS drives on RAID6 |
| Drive Support | The system must support intermixing of dual ported 12 Gbps SSD, SAS and NL-SAS dual ported drives to meet the capacity and per- |

| Feature | Description |
|--|--|
| | formance requirements of the applications. The system must support a minimum of a 140 disks per two controllers for scalability purpose and must use every drive, up the supported count of drives per pool, spreading out all volumes across all drives and also decrease the drive rebuild time. |
| Front-End and Backend connectivity | The proposed storage system should have minimum 4 numbers of 12Gbs or higher backend SAS ports. Should support 10 GbE iSCSI. |
| Rack Mountable | The storage should be supplied with rack mount kit. All the necessary patch cords (Ethernet and Fiber) shall be provided and installed by the vendor. |
| | The storage shall have the ability to expand LUNS/Volumes on the storage online and instantly. |
| | The storage shall have the ability to create logical volumes without physical capacity being available or in other words system should allow over-provisioning of the capacity. The license required for the same shall be supplied for the maximum supported capacity of the offered storage model. |
| | The proposed storage system should be configured to provide data protection against two simultaneous drive failures. |
| | The required number hard disks for parity & spares, should be provided exclusively of the usable capacity mentioned after consider RAID and Filesystem overhead. |
| | Storage system should support RAID level distributing data across multiple Disk to ensure faster rebuild time. |
| | Storage system should allow changing of cache block size non-disruptively for defined RAID group levels to meet various kind of workload. |
| Storage functionality and Availability | Storage shall have capability to integrate with Object Storage for taking image or file based backup. |
| | System should have redundant hot swappable components like controllers, disks, power supplies, fans etc. |
| | The Storage System should support T10-PI standard to detects and corrects data integrity issues received from the recording server/host server or due to hardware failures on the drives. |
| | System should support asynchronous replication and license should be offered from day one. |
| | System Management software should have capability to monitor performance for IOPs, MB/s, latency and should be able to drill down to the capabilities of monitoring controllers, disk pools, volumes, drives. |
| | System GUI manager should be able to manage multiple arrays together. Should support Role-based access control and audit log, support for Multi-factor Authentication |
| | Storage system should support SSD cache. |
| | Storage should have Energy star rated Platinum power supplies. |
| | The proposed system should support 99.999% reliability. |
| Point-in-times images | The storage should have the requisite licenses to create point-in-time |

Review

| Feature | Description |
|----------------|--|
| | snapshots. The storage should support minimum 512 snapshots per system. The license proposed should be for the complete supported capacity of the system. |
| | Offered storage array shall have capability to take snapshot. Must use latest stable technology platform, with support available for next 7 years. |
| | The system should support instant creation of clones of active data. |
| Management | Easy to use GUI based administration interface for configuration, storage management and performance analysis tools. The proposed storage should provide Proactive monitoring of the health of the system and configurable automated delivery of replacement drives when failures occur. |
| OS support | Support for industry-leading Operating System platforms including: LINUX , Microsoft Windows, HP-UX, SUN Solaris, IBM-AIX, etc. It shall support connecting hosts over iSCSI or FC and shall be supplied with any Multi pathing software, if required, with the solution. |
| Warranty & SLA | The Hardware and software quoted should have 3 years support alongwith upgrade and updates. |

14. Client Workstation

| Items | Descriptions |
|---------------------------|--|
| Processor Model | Intel Core i7-13700 or higher |
| No. of Core per Processor | 16 core and higher with minimum 24 Thread |
| Processor Frequency | Minimum 2.1 Ghz |
| Chipset | Compatiable Intel W Series with vPro. or higher |
| Memory | 32 GB (minimum 2 DIMM slot Should be Open) |
| Memory Type | DDR5 Memory with expandibility 128 GB or Higher |
| Memory Speed | Speed should be 4800MHz or better |
| Storage | 1TB HDD (7200 RPM or Above) or higher and 512GB SSD NVMe with RAID level |
| Graphic card | Dedicated Enterprize level graphic card |
| Graphic Memory Size | NVIDIA RTX A2000 12GB or higher |
| Operating System Model | Windows 11 Professional (Factory Pre-loaded) |
| Audio in | Integrated Audio |
| Optical Drive | Yes |
| Keyboard & Mouse | Yes |
| Wireless | Yes, 802. 11ax wireless |
| Communications | Yes, 1 Gb/s (10/100/1000) BASE-T LAN Port, support Intel vPro®) & 2.5 Gb/s (10/100/1000) BASE-T LAN Port |
| USB 3.0 / 3.1 gen 2 | Total 12 Port and above - Minimum 4 Number of USB Version 3 point 2, Gen 1 Ports, 1 USB 3.2 Gen2 Type-C (10Gbps) Port and 1 USB 3.2 Gen2x2 Type-C (20Gbps) Port. |
| HDMI | 1 HDMI 2.1 Port |
| Display Port | Minimum 2 DP 1.4 Ports |

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| Items | Descriptions |
|--|--|
| VGA | Yes |
| PCIe / PCI | Minimum 4 Nos. Or more |
| Management & Security | Integrated TPM v2.0 (Hardware) |
| Drive Controllers | Integrated SATA3 controller with minimum 4 x 6Gbps ports & SATA Controller should support RAID 0, 1, 5, 10 for Windows only. |
| Audio | 5.1 CH HD Audio |
| Internal / External | With Minimum 4 Bay (one for SSD only) and Minimum 2 M.2 2280 PCI-E 4.0 slots (For SSD) & 1 M.2 2230 PCI-E 3.0, E Key for Wi-Fi & Bluetooth |
| Details with features | Genuine Win 11 Pro 64 . All drivers required for proper integration of components should be supplied by the vendor. |
| Form Factor with Tool free design | Tower |
| Power Supply, Efficiency and certification | Min 500W wide-ranging, 80PLUS® Gold Power Supply or Higher |
| Spare , support and Services | 3 years onsite parts and labour warranty for system |
| Vendor should have ISO certifications. | ISO 9001,14001,20001,27001 and ISO50001 for OEM |
| Category | Window OS Certification, EPEAT Registered , Energy Star 8.0, ROHS Compliant, FCC, CE, CB and Adobe/SOLID Works Certified. |
| Global | OEM should have global presense and should have registered office in India. |

15. 8-port 10/100/1000 Base-T PoE Smart managed switch

| S.No. | Technical Specifications | |
|-------|---------------------------------------|--|
| 1 | Physical Interface | 8 # 10/100/1000 Mbps Base-T auto-sensing PoE ports |
| | | 2 # 1000 Base-x SFP uplink ports |
| 2 | Network Protocol and Standards | IEEE 802.3i 10BASE-T |
| | | IEEE 802.3u 100BASE-TX |
| | | IEEE 802.3ab 1000BASE-T |
| | | IEEE 802.3z 1000BASE-X |
| | | IEEE 802.3x full-duplex flow control |
| | | IEEE 802.3af (DTE Power Via MDI) |
| | | IEEE 802.3ad Link Aggregation (manual or LACP) |
| | | IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) |
| | | IEEE 802.1s Multiple Spanning Trees Protocol (MSTP) |
| | | IEEE 802.1ab Link Layer Discovery Protocol (LLDP) |
| 3 | Performance | Forwarding modes: Store-and-forward |
| | | Bandwidth: 20 Gbps full duplex |
| | | Buffer memory: 512 KB embedded memory per unit |
| | | Address database size: 8K media access control (MAC) |

Review the table

| S.No. | Technical Specifications | |
|-------|-------------------------------------|--|
| | | Mean time between failures (MTBF): 1,200,041 hours |
| | | Acoustic noise level (@ 25°C : 0 dBA |
| 4 | Other Requirements | IEEE 802.1Q static VLAN (64 groups, static) |
| | | Protected ports |
| | | Port-based QoS |
| | | prioritization on power |
| | | Dynamic Power allocation |
| | | DSCP-based QoS |
| | | PoE timer |
| | | DiffServ |
| | | LLDP-MED |
| | | SNMP v1, v2c, v3 |
| | | RFC 1213 MIB II |
| | | RFC 1643 Ethernet Interface MIB |
| | | RFC 1493 Bridge MIB |
| | | RMON group 1, 2, 3, 9 |
| | | Auto voice VLAN |
| | | DHCP Filtering |
| | | Auto denial-of-service (DoS) protection |
| | | HTTP and HTTPS |
| | | Ping and traceroute |
| | | Power saving when link down |
| | | RFC 2131 DHCP client |
| | | DHCP filtering |
| | | IEEE 802.1x with Guest VLAN |
| | | Jumbo frame support |
| | | Port-based security by locked MAC addresses |
| | | MAC and IP-based ACL |
| | | Storm control for broadcast, multicast and unknown unicast packets |
| | | IGMP snooping v1/v2 |
| | | Port-based egress rate limiting |
| | | SNTP |
| | | Port mirroring support (many-to-one) |
| | | Web-based configuration |
| | | Centralised Cloud Management |
| | | Configuration backup/restore |
| | | Password access control |
| | | TACACS+ and RADIUS support |
| | | Syslog |
| | | Firmware upgradeable |
| 5 | Power Specifications | PoE (55 Watts of power budget) |
| | | Power consumption: 69.5W maximum |
| | | 12V, 1.0A external power adapter |
| 6 | Environmental Specifications | Operating temperature: 32° to 122° F (0° to 50° C) |

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| S.No. | Technical Specifications | |
|-------|-----------------------------|---|
| | | Storage temperature: -4° to 158° F (-20° to 70° C) |
| | | Operating humidity: 90% maximum relative humidity, non-condensing |
| | | Storage humidity: 95% maximum relative humidity, non-condensing |
| 7 | Certifications | CE mark, commercial |
| | | FCC Part 15 Class B |
| | | VCCI Class B |
| | | C-Tick |
| | | EN 55024 |
| | | cUL IEC 950/EN 60950 |
| | | CB |
| 8 | Status LEDs | Per RJ45 port: Link/activity, speed, PoE status |
| | | Per SFP port: Link/speed |
| | | Per device: Power, PoE Max |
| 9 | Warranty and Support | Limited Lifetime hardware replacement warranty |
| | | Lifetime Chat and e-mail Technical Support |
| | | Lifetime free latest firmware support |
| | | 90 Day's Remote configuration support. |

16. 24-port 1G Base-T Layer-3 Stackable Managed Switch.

| S.No. | Technical Specifications | |
|-------|----------------------------|--|
| 1 | Physical Interfaces | 24 # 10/100/1000 Base-T Copper Ports |
| | | 02 # 1/10G Base-T Copper Ports |
| | | 02 # 1/10G Base-X Fiber SFP+. |
| | | Ethernet: Out-of-band 1G port (Front) |
| | | Console: RJ45 RS232 (Front) |
| | | Console: Mini-USB (Front) |
| | | Storage: USB (Front) |
| | | Full-width 1-unit 1U rack mount |
| 2 | CPU/ Memory | CPU: 800 MHz |
| | | RAM: 1 GB |
| | | Packet buffer memory: 16 MB |
| | | Flash: 256 MB |
| 3 | Performance | Stack height: 8 switches |
| | | Switching fabric: 128 Gbps Line-Rate (non-blocking fabric) |
| | | Throughput: 95.2 Mpps |
| | | Forwarding mode: Store-and-forward |
| | | Address database size: 16,000 MAC addresses (48-bit MAC address) |
| | | Number of VLANs: 4,093 (IEEE 802.1Q) simultaneously |
| | | Number of multicast groups= 2K IPv4 |
| | | Number of multicast groups= 2K IPv6 |

Signature

| S.No. | Technical Specifications | |
|-------|--------------------------|---|
| | | ARP/NDP= 2K |
| | | Number of LAGs (802.3ad): 128 LAGs with up to 8 ports per group |
| | | Number of hardware queues for QoS: 8 (Standalone) |
| | | Number of routes: 512 IPv4 Unicast routes |
| | | Number of routes: 256 IPv6 Unicast routes |
| | | Jumbo frame support: up to 9K packet size |
| | | Mean time between failures (MTBF): 1,328,968 hours (~151.7 years) |
| | | sFlow=416 samplers, 416 pollers, 8 receivers |
| 4 | L2 Services | Protocol based VLAN |
| | | IP Subnet |
| | | IPX |
| | | ARP |
| | | Subnet based VLAN |
| | | MAC based VLAN |
| | | Voice VLAN |
| | | Private Edge VLAN |
| | | Private VLAN |
| | | Guest VLAN |
| | | Double VLAN Tagging (QoQ) |
| | | GARP with GVRP/GMRP |
| | | MVR (Multicast VLAN Registration) |
| | | Multiple Registration Protocol (MRP) |
| | | Multicast VLAN Registration Protocol (MVRP) |
| | | LAG Hashing |
| | | LAG Member Port Flaps Tracking |
| | | UDLD support |
| | | Distributed Link Aggregation |
| | | Storm Control |
| | | Link Dependency |
| | | Spanning Tree Protocol |
| | | Per VLAN STP (PVSTP) with FastUplink and FastBackbone |
| | | Per VLAN Rapid STP (PVRSTP) |
| | | STP Loop Guard |
| | | STP Root Guard |
| | | BPDU Guard |
| | | STP BPDU Filtering |
| | | STP BPDU Flooding |
| | | IGMP v2/v3 Snooping support |
| | | MLD v1/v2 Snooping support |
| | | Expedited Leave Function |
| | | Static L2 Multicast Filtering |
| | | MLDv1/2 Snooping Support |
| | | IGMPv2/3 Snooping Support |
| 5 | L3 Services | IGMP Proxy |
| | | MLD Proxy |

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| S.No. | Technical Specifications |
|-------|--|
| | Any Source Multicast (ASM) |
| | Source Specific Multicast (SSM) |
| | Multicast streams routing between subnets, VLANs |
| | Multicast Static Routes (IPv4, IPv6) |
| | DVMRP |
| | Neighbor discovery (IPv4, IPv6) |
| | PIM-DM (IPv4, IPv6) |
| | PIM-SM (IPv4, IPv6) |
| | PIM multi-hop RP support |
| | IPMC replication (hardware support) |
| | DHCP Client (IPv4, IPv6) |
| | DHCP Server (IPv4, IPv6) |
| | DHCP Snooping (IPv4, IPv6) |
| | DHCP/ BootP Relay (IPv4, IPv6) |
| | DHCP options 66, 67, 150, and 55, 125 |
| | Static Routing (IPv4, IPv6) |
| | Port based Routing |
| | ECMP Static Routing |
| | Port Based Routing |
| | VLAN Routing |
| | RIP v1 and v2 |
| | OSPF v2 and v3 |
| | OSPF Flood Blocking |
| | Route Redistribution |
| | VRRP |
| | VRRP Route/Interface Tracking |
| | Loopback Interfaces |
| | Tunnel interfaces |
| | Router Discovery |
| | IP Helper |
| | IP Source Guard |
| | IP Event Dampening |
| | ECMP |
| | Proxy ARP |
| | Multinetting |
| | ICMP v4 and v6 |
| | IPv4/IPv6 |
| | DNS v4 and v6 |
| | IPv6 Routing |
| | Configured v6-over-v4 tunnels |
| | Automatic (6to4) tunnels |
| 6 | QoS |
| | IEEE 802.1p CoS |
| | DiffServ QoS |
| | WRED (Weighted Deficit Round Robin) |
| | Single Rate Policing |
| | Strict Priority queue technology |
| | Auto-VoIP |

Row 6 v6

| S.No. | Technical Specifications | |
|-------|-------------------------------|---|
| | | iSCSI Flow Acceleration |
| | | IP DSCP |
| | | IP Precedence |
| | | IP TOS |
| | | L3 IPv6 Flow Label |
| | | Interface Traffic Shaping |
| | | PHB Support |
| | | Minimum Bandwidth per-interface |
| 7 | Security | Broadcast, Multicast and Unicast Network Storm Protection |
| | | CPU Protection |
| | | DoS attack protection |
| | | ICMP throttling |
| | | Management ACL |
| | | Radius accounting |
| | | TACACS+ |
| | | L2/L3/L4 Access Control List (ACL) |
| | | MAC, IPv4, IPv6, TCP, UDP ACL |
| | | Protocol based ACL |
| | | ACL over VLAN |
| | | Dynamic ACL |
| | | IEEE 802.1x Radius Port Access Authentication |
| | | 802.1x MAC Address Authentication Bypass (MAB) |
| | | Port Security |
| | | Dynamic ARP Inspection |
| | | MAC Filtering |
| | | Port MAC Locking |
| 8 | IEEE Network Protocols | IEEE 802.3 10Base-T |
| | | IEEE 802.3 Ethernet |
| | | IEEE 802.3i 10BASE-T |
| | | IEEE 802.3u 100BASE-T |
| | | IEEE 802.3ab 1000BASE-T |
| | | IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX |
| | | IEEE 802.3ae 10-Gigabit Ethernet |
| | | IEEE 802.3ad Trunking (LACP) |
| | | IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED) |
| | | IEEE 802.1D Spanning Tree (STP) |
| | | IEEE 802.1s Multiple Spanning Tree (MSTP) |
| | | IEEE 802.1w Rapid Spanning Tree (RSTP) |
| | | IEEE 802.1p Quality of Service |
| | | IEEE 802.1Q VLAN tagging |
| | | IEEE 802.1v protocol-based VLAN |
| | | IEEE 802.1X Radius Network Access Control |
| | | IEEE 802.3x flow control |
| | | GMRP — Dynamic L2 multicast registration |
| | | GVRP — Dynamic VLAN registration |
| | | GARP -Generic Attribute Registration Protocol |

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| S.No. | Technical Specifications | |
|--------------------------|--------------------------|---|
| 9 | Management | ISDP (Industry Standard Discovery Protocol) |
| | | Out of band Management |
| | | 802.1ab LLDP and LLDP-MED |
| | | SNMP v1, v2 and v3 |
| | | RMON 1, 2, 3, 9 |
| | | sFlow |
| | | Command Line Interface (CLI) |
| | | Web-based graphical user interface (GUI) |
| | | Admin access control via Radius and TACACS+ |
| | | Telnet |
| | | IPv6 Management |
| | | Dual Software (Firmware) images |
| | | Dual Configuration file (Text-based) |
| | | Radius accounting |
| | | Malicious Code Detection |
| | | SNTP |
| | | XMODEM |
| | | Port Mirroring |
| | | Cable Test Utility |
| | | SSH v1/v2 |
| | | SSL/HTTPS and TLS v1.0 for web-based access |
| | | File Transfer (uploads, downloads) through TFTP/HTTP |
| | | SCP/ SFTP/ HTTPS |
| | | Syslog |
| | | Non disruptive Config Management |
| | | Remote Port Mirroring (RSPAN) |
| | | OpenFlow 1.3 |
| Persistent log supported | | |
| 10 | Network Traffic | Access Control Lists (ACLs) L2 / L3 / L4 |
| | | Time-based ACLs |
| | | ACL over VLANs |
| | | IPv6 RA Guard Stateless Mode |
| | | Network Authentication Successive Tiering |
| | | 802.1x MAC Address Authentication Bypass (MAB) |
| 11 | LEDs | Per port: Speed, link, activity |
| | | Power, Fan, Stack Master, Stack ID |
| 12 | Environmental | Operating Temperature: 32° to 122°F (0° to 50°C) |
| | | Operating Humidity: 90% maximum relative humidity, non-condensing |
| | | Storage Temperature: - 4° to 158°F (-20° to 70°C) |
| | | Storage Humidity: 95% maximum relative humidity, non-condensing |
| 13 | Certifications | CE mark, commercial |
| | | FCC Part 15 Class A, VCCI Class A |
| | | Class A EN 55022 (CISPR 22) Class A |
| | | Class A C-Tick |
| | | EN 50082-1 |

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| S.No. | Technical Specifications | |
|-------|--------------------------|--|
| | | EN 55024 |
| | | CSA certified (CSA 22.2 #950) |
| | | UL listed (UL 1950)/cUL IEC 950/EN 60950 |
| 14 | Warranty | True Lifetime Hardware Replacement Warranty |
| | | Lifetime free latest firmware support |
| | | 1 year On Call Technical Support |
| | | Replacement with New Product Only No refurbished Products. |

17. 4U Wall Mount Rack

| |
|--|
| Racks Manufactured Out of steel sheet punched, formed, welded and Powder coated & manufactured in owned facility |
| Rack should be from ISO 14001, 27000, 45000 Certified Company & product should be UL Certified |
| Standard for Racks configuration will be welded frame Cable entry provision on top cover |
| Rack should have Front tinted Glass door with lock & key. |
| Rack should be 4U (1U = 44.45 mm) in Height. |
| It should be minimum 550MM Wide & 500MM Deep |
| Rack should Conform to DIN 41494 or Equivalent EIA/ISO/EN/CEA Standard |
| Rack should have Adjustable mounting depth, |
| Rack 4 No Adjustable, 19"verticals with Punched 10mm Square Hole and Universal 12.7mm-15.875mm-15.875mm alternating hole pattern offers greater mounting flexibility, maximizes usable mounting space. |
| Rack should have Numbered U positions, |
| Rack should have 100% assured compatibility with all equipment conforming to DIN 41494 (General industrial standard for equipment) |
| Powder coated finish with seven Tanks pre-treatment process meeting IS |
| Rack should have one Hoz. Cable Manager. |
| Rack should have one shelf. |
| Rack should have Fan module Mount Provision on top Cover with minimum 1 no. 90 CFM Fan |
| Server /IT Rack mount power distribution unit, 1Ph, 230V, 5A, 50/60Hz, 1 U standard with 4 X Indian Round Pin, 5A, Inlet Plug type 6A Indian Round Pin, 5A Fuse - PDU Rating 1.2KVA |
| Rack should have minimum 1 Packet of mounting hardware, Pack of 10. |

18. 42U Server Rack with Accessories

| Sl. No. | Parameters | Specification |
|---------|-------------|--|
| 1. | Feature | Floor Standing Server Rack |
| 2. | Dimensions | 42U 600*1000 with front Toughened Glass & rear perforated door, powder coated meeting 7 tank ASTM standard, removable side panel with Slam Latch, Lock & Key |
| 3. | | Tray 19" |
| 4. | | PDU (Vertical 12*5/15 with 32A MCB) |
| 5. | Accessories | Cable Manager - 1 No. |
| 6. | | Fan with Tray |

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| | | |
|----|----------------|---|
| 7. | | Castor Wheels |
| 8 | | Keyboard Tray |
| 9 | | Earthing Kit |
| 10 | Load Capacity | 1200Kgs Max |
| 11 | Mounting Rails | EIA-310-E compliant equipment mounting rails |
| 12 | OEM Criteria | Rack should be from ISO 14001 ,27000 Certified Company & UL Listed. Manufacturer should have their own Rack manufacturing unit in India |

19. 10 KVA ONLINE UPS Systems with 30 Mins Backup

| SI No | Technical Parameters | Minimum Specification |
|-------|----------------------------------|---|
| 1 | UPS Capacity | 10 kVA UPS System (1Ph Input /1Ph Output) |
| 2 | Topology | True On-line Double Coverstion UPS |
| 3 | Output power capacity | 8 KW |
| 4 | Input | |
| 4.1 | Voltage Range | 110 - 300 VAC based on the load percentage |
| 4.2 | Frequency | 50 Hz |
| | Frequency Range | 45 to 55 Hz |
| 4.3 | Power Factor | ≥ 0.99 at full load and nominal input Voltage |
| 4.5 | Current THD | < 5% |
| 5 | Output | |
| 5.1 | Voltage | 230 VAC |
| 5.2 | Voltage Regulation | + / - 1% |
| 5.3 | Frequency (Free Running Mode) | 50 Hz ± 0.1 Hz |
| 5.4 | Frequency (Synchronisation Mode) | 45 to 55 Hz |
| 5.5 | Harmonic Distortion (THD) | < 2% (linear load) < 5% (non-linear load) |
| 5.6 | Output Waveform | Sine wave |
| 5.7 | Crest Factor | 3:1 |
| 5.8 | Inverter Efficiency | ≥ 90% |
| 5.9 | Power Factor | 0.8 Lagging |
| 5.10 | Overload | 101% - 109% for 5 minutes 110% - 129% for 1 minute 130%-150% for 10 Sec |
| 5.11 | System DC Voltage | >240 VDC |
| 6 | Battery | 42AH x 12 V x 20 Nos |
| 6.1 | Battery Type | 12 V Sealed Lead Acid Maintenance Free |
| 6.2 | Battery make | Exide/ Quanta |
| 6.3 | Battery charging | Constant Current & Constant Voltage |
| 6.5 | Charger | Built-in solid state float-cum-equalizing charger with automatic boost / trickle charge modes with current limiting features. |
| 6.6 | VAH Required | ≥ 10080 |
| 7 | Efficiency | |
| | AC/AC (overall efficiency) | ≥ 85% (at full Load) |

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| Sl No | Technical Parameters | Minimum Specification |
|-------|--------------------------------|---|
| 8 | Features | |
| 8.1 | Eco mode | Available |
| 8.2 | Overload capacity | Available |
| 8.3 | Converter mode | Available |
| 8.4 | Bypass parameters configurable | Available |
| 8.5 | Display | LCD Display |
| 9 | Mechanical | |
| | Ingress protection | IP 20 |
| 10.6 | Bypass | Static Bypass |
| 10.7 | Maintenance Bypass | Available |
| 12 | Certifications | |
| 12.1 | ISO 9001 : 2015 | |
| 12.3 | ISO 14001 : 2015 | |
| 12.4 | ISO 45001 : 2018 | |
| 12.5 | BIS Certificate | |
| 12.6 | PEP Certificate | |
| 13 | Warranty | 3 Years on UPS & 3 Years on Battery from date of supply. |
| 14 | Service purpose | UPS OEM should have toll free number facilities for all type service call logging support. |
| | | UPS OEM should have at least 11 own Service Centers (Where Spare & Parts stock available and UPS will repair instant) and own payroll 40 Service engineers in West Bengal for Service support. At least 25 Service Engineers PF details & 11 own service centers address should be shared along with technical bid. |
| 15 | Criteria | UPS OEM should have single PO Copy & supplied 10000 Units in West Bengal Govt.project through System Integrator during last 2 (two) years. PO should be shared along with technical bid. |
| | | UPS OEM should have 500 CR turnover consecutive last 3 financial Years |
| | | UPS OEM should have own Factory premises in India |

20. 1000 VA Line Interactive UPS

| S.NO | DESCRIPTION | SPECIFICATION |
|------|---------------------|-------------------------------|
| 1 | Rating(VA/Watts) | 1000VA / 600Watts |
| 2 | INPUT | 1 Phase, 230 VAC |
| | Input Voltage Range | 140V - 300 VAC |
| | Input Frequency | 50Hz |
| 3 | OUTPUT | 1 Phase, 230 VAC |
| | Output Volts Range | 195V - 255V AC (Mains Mode) |
| | | 230V±10% (Battery Mode) |
| | Transfer Time | 4ms - 10ms typical |

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| S.NO | DESCRIPTION | SPECIFICATION |
|------|------------------------------------|---|
| | Output Frequency | 50Hz +/-1 Hz (Battery Mode) |
| | Output Wave form | Stepped Sinewave |
| | Inverter Efficiency | > 60 % |
| 4 | BATTERY | |
| | Battery | 12 V SMF 9 AH - 2 Nos (inbuilt) |
| | System Voltage | 24 V DC |
| | Recharge time | 8 hrs for 90% charging |
| 5 | INDICATION & PROTECTION | |
| | Front Display | LED |
| | Indication | AC Mode - Green Light |
| | | Backup Mode - Yellow flashing |
| | | Fault - Red lighting |
| | Alarm | Battery Mode - Every 10 Second |
| | | Low Battery - Every Second |
| | | Over load - Every 0.5 Second |
| | | Fault - Continuously sounding |
| | Night guard protection | Required |
| | Protection Features | Mains Ac Input Low / High, Battery mode Input Low / High, Short circuit trip - Mains / Battery, Over load Trip - Mains / Battery mode |
| | Input Protection | Resettable Circuit Breaker |
| 6 | CONNECTION | |
| | Input Type | 1.5 meter Power Chord |
| | Output Type | 4 Nos - 5 Pin Indian Socket |
| 7 | PHYSICAL | |
| | Dimension(W X D X H) mm | 140x368x180 |
| | Weight | 14 |
| 8 | ENVIRONMENTAL | |
| | Relative Humidity | 0-95% without condensation |
| | Operating Temperature | 0 - 40 degC |
| | Noise Level | < 40 dB at 1 meter distance |
| 9 | FEATURES | |
| | | Microprocessor based design for High reliability |
| | | Auto Restart Facility |
| | | Generator Compatibility |
| | | Cold Soft |
| | | Double Boost & Single Buck AVR |
| 10 | STANDARDS | |
| | IS 16242 (PART 1) : 2014 | Required |
| | Performance Test Report | Required from NTH (National Test House) |
| 11 | Warranty | 3Years on UPS & 3Years on Battery from date of supply. |
| 11 | Service Support | UPS OEM should have toll free number facilities for all type service call logging support. |

| S.NO | DESCRIPTION | SPECIFICATION |
|------|----------------------|---|
| 12 | Eligibility Criteria | UPS OEM should have own Service Centers at Jharkhand district level.(Minimum 7/8 Nos) |
| | | UPS OEM should have 500 CR turnover consecutive last 3 financial Years |
| | | UPS OEM should have own Factory premises in India |
| | | ISO 9001, ISO 14001, ISO 45001: 2018, BIS Certificate. |
| | | Product Catalogue should be available on OEM website |

21. Central Video Wall system software and hardware:

Intelligent Video Wall

- Tiles having 55" 3.5mm Bezel width Screen along with structure and accessories
- Video Management Servers: Quantity to be assessed by the agency
- Other Servers & its Accessories – Specifications and Quantity to be decided by the supplier
- Storage: As per requirement to store data upto maximum 1 Month
- Archive Storage : As per requirement having storage capacity upto 3 Months

1.CCTV camera system for Wine Shop

| Sr. No | Description |
|--------|--|
| 1 | 2 MP Network Dome Camera - 3.6mm Lens, DWDR, IR 30 Mtr. IP 67. |
| 2 | 2 MP Network Bullet Camera - 3.6mm Lens, DWDR, IR 30 Mtr. IP 67. |
| 3 | 4 Ch. Network Video Recorder with 4TB Storage |
| 4 | 8 Port Gigabit PoE Switch |
| 5 | 21.5" LED Display |
| 6 | 1 KVA Line Interactive UPS with 15 Min. Battery backup |
| 7 | Installation and Networking |

2.CCTV camera system for Manufacturing unit and warehouses:

| Sr. No | Description |
|--------|---|
| 1 | 5 MP Network IR Camera - 3.6mm Lens, DWDR, IR 30 Mtr. IP 67. |
| 2 | 5 MP Network IR Bullet Camera - 3.6mm Lens, DWDR, IR 30 Mtr. IP 67. |
| 3 | 8 Ch. Network Video Recorder with 8TB Storage |
| 4 | 8 Port Gigabit PoE Switch |
| 5 | 1 KVA Line Interactive UPS with 15 Min. Battery backup |
| 6 | 27" LED Display |
| 7 | Installation and Networking |

Power

3. Air conditioner 2.0 Ton for Central Monitoring Cell

5 Star Wi-Fi Twin-Cool Inverter Split Air Conditioner (Copper, Auto Convertible, Shield Blu Anti-Corrosion Technology, 2022 Model, White) (For Control Room) Including 5KVA Stabilizer.

4. Services (Optional)

1. AMC Cost of Hardware post warranty
2. AMC cost of software post warranty

Table 1 – Architectural Questions

| Table 1 – Architectural Questions | | Bidder Response |
|-----------------------------------|--|-----------------|
| JSBCL Question | | |
| 1. | Describe the architecture of your solution including description of solution platform, storage, database management system, high availability, and redundancy features. | |
| 2. | Please specify any “ceilings” to growth within your solution. For example, maximum number of users, concurrent feeds, maximum number of CCTV recording devices. | |
| 3. | What infrastructure resource impacts should an organization be aware of when deploying your solution (e.g., processing, bandwidth, storage, etc.)? | |
| 4. | How much data (in GB) can your solution capture and store on a daily basis if it were used to collect and correlate events from existing disparate security devices and information systems (video, access control, sensors, boom barrier, analytics, VTS, networks, building systems, etc.) from JSBCL sites? | |
| 5. | Does your solution pull data from physical security devices or is there an expectation that data needs to be pushed? | |

Table 2 – Support Questions

| Question | Bidder Response |
|--|-----------------|
| What training packages (e.g., on-line manuals, support, help, methods, and procedures) does your solution provide? | |
| Do you offer standard and customized training courses? | |
| Do you provide hands-on training? If yes, do you offer a virtual training environment for clients to use or is the client expected to set-up their training environment? Please specify. | |
| Describe the activities and the type/level of expertise required in order to maintain the solution on an on-going ba- | |

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|---|--|
| sis. | |
| Describe your maintenance and support offerings (i.e., pre-deployment, post- deployment, consulting after-hours support, 7/24 on-call support, etc.) and how you will provide them. | |
| Describe your release horizon including updates, major and minor enhancements of your solution. How often do you release software updates? | |

Table 3 – Licensing Questions

| JSBCL Question | Bidder Response |
|---|------------------------|
| What are the options for licensing your solution? Please describe each option. | |
| Are all future versions of the solution free? Please describe. | |
| How many individual licenses would need to be purchased in order to trigger the licenses to become an enterprise-wide license? | |
| Are there limitations to the number of users/user licenses? Is there a cost for user licenses? | |
| Deployed CVMS system should have technical support team based in India with relevant troubleshooting, debugging and training experience | |

| JSBCL Question | Bidder Response |
|--|------------------------|
| Describe the reporting capabilities of your solution and identify all out-of-the-box reports provided. Does your solution provide capability to create and save customized reports? | |
| Provide two examples where your solution was implemented for more than 100 sites. These examples must have been implemented in an architecture similar to the one proposed for JSBCL. | |
| Does the CVMS software support multiple formats of online/offline GIS maps or JPEG Images, PDFs to be used as map? | |
| Pre-requisite for implementing the proposed solution(Indicate the list of items for site preparedness | |