



**REQUEST FOR PROPOSAL (RFP)
FOR
DESIGN, SUPPLY, INSTALLATION, CONFIGURATION, TESTING,
AND COMMISSIONING OF AN IP-BASED CLOSED-CIRCUIT
TELEVISION CAMERA (CCTV) FOR BHUBANESWAR CITY**

RFP No.: 1553

RFP Issued on: 5th September 2026

Issued by:

Bhubaneswar Smart City Limited (BSCL)

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DISCLAIMER

The information contained in this **Request for Proposal** document (the “**RFP**”) or subsequently provided to Bidder(s), whether verbally or in documentary or any other form, by or on behalf of the **Bhubaneswar Smart City Limited** (herein after referred to as “**BSCL**” or the “**Authority**”) or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this RFP document and such other terms and conditions subject to which such information is provided.

This RFP document is not an agreement and is neither an offer nor invitation by the BSCL to the prospective Bidders or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in the formulation of their bids for qualification pursuant to this RFP (the “**Bid**”). This RFP document does not purport to contain all the information that each Bidder may require. This RFP document may not be appropriate for all persons, and it is not possible for the BSCL and its employees or advisors to consider the objectives, technical expertise, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The BSCL accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The BSCL its employees and advisors make no representation or warranty and shall have no liability to any person, including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of this RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way for participation in this bid stage. BSCL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP document.

BSCL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this RFP document.

The issue of this RFP document does not imply that the BSCL is bound to select a Bidder or to appoint the Successful Bidder (Agency), as the case may be, for the Project and the BSCL reserves the right to reject all or any of the Proposals without assigning any reason whatsoever. The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the BSCL or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the BSCL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conduct or outcome of the Bidding Process.

SECTION – 1: INTRODUCTION

1.1. BACKGROUND

- 1.1.1. Government of Odisha vide Notification No. 4741 dated 23/02/2016 constituted a Special Purpose Vehicle (SPV) company named “Bhubaneswar Smart City Limited” (the “**BSCL**” or “**Authority**”) for implementation of Smart City Proposal of Bhubaneswar selected under Smart City Mission programme. Bhubaneswar Smart City Limited (BSCL) is the nodal agency to plan, implement, manage, and operate the Smart City Development Projects in the city.
- 1.1.2. BSCL under the technological project’s scope have installed CCTV cameras in various locations in Bhubaneswar city. Further, BSCL has planned for an Intelligent AI-Enabled IP-Based Public Address (PA) System for Bhubaneswar City through this RFP. In this reference, BSCL invites the Bid, through this RFP Document, from the interested eligible parties (the “**Bidders**”) for supply, installation, testing, commissioning and O&M for a period of 5 years and extension on mutually agreed terms and conditions. The detailed specifications & SLA are available in the RFP.

Project	Period	Locations & Number of CCTV Cameras	Nature of Work
Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) System for Bhubaneswar City	4 Months	300 CCTV Cameras at 100 Locations	Supply, Installation and Commissioning
Operation and Maintenance of the IP-Based Closed-Circuit Television Camera (CCTV) System for Bhubaneswar City	60 Months (Including 12 Month DLP)		Operation and Maintenance

- 1.1.3. The Selected Bidder shall enter into the Contract Agreement (the “**Contract Agreement**”) with the BSCL in the prescribed format and terms & conditions as provided by the BSCL.
- 1.1.4. With regards to the Project Site and other related components will be implemented by Successful Bidder (the “**Agency**”)
- 1.1.5. The statements and explanations contained in this RFP are intended to provide a proper understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner and obligations of the Agency set forth in the Contract Agreement or the BSCL’s rights to amend, alter, change, supplement or clarify the SoW, the Contract to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or contradictions in the Bidding Documents including this RFP are to be noted, interpreted, and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by BSCL.
- 1.1.6. BSCL shall receive Bids pursuant to this RFP in accordance with the terms set forth in this RFP and other documents to be provided by BSCL pursuant to this RFP, as modified, altered, amended and clarified from time to time by the BSCL (collectively the “**Bidding Documents**”), and all Bids shall be prepared and submitted in accordance with such terms on or before the date as specified in Clause 1.3 for submission of Bids (the “**Bid Due Date**”).

1.2. BRIEF DESCRIPTION OF BIDDING PROCESS

- 1.2.1. The BSCL has adopted a single Stage bidding process (collectively referred to as the "**Bidding Process**") for selection of the Bidder for award of the Project. The selection process involves technical qualification of interested Bidders in accordance with the provisions of the RFP document. The BSCL shall open the financial bids of the technically qualified Bidders only.
 - 1.2.2. The Bidder shall pay to the BSCL a non-refundable sum of **Rs.11,800/-** inclusive of GST as the cost of the RFP document. The remittance shall be made in the form of a Demand Draft in favor of "Bhubaneswar Smart City Limited, payable at Bhubaneswar". The RFP Document can be downloaded from the website <https://www.smartcitybhubaneswar.gov.in/> and <https://tendersodisha.gov.in/>
 - 1.2.3. The bid shall be valid for a period of not less than 180 (One Hundred and Eighty) days from the Bid Due Date.
 - 1.2.4. The Bidding Documents include the Request for Proposal (RFP) for the project. Subject to the provisions of Clause 2.9 & 2.10, any Corrigendum or Addenda issued subsequent to this RFP Document and/or the Contract Agreement, but before the Bid Due Date, will be deemed to form part of the Bidding Documents.
 - 1.2.5. An EMD of **INR 10,00,000/-** in the form of a demand draft or bank guarantee from any Nationalized/Scheduled Commercial Bank in India and drawn in favour of the "**Bhubaneswar Smart City Limited**" and payable at "**Bhubaneswar**", must be submitted along with the Proposal. The Bid shall be summarily rejected if it is not accompanied by the Bid Security.
 - 1.2.6. An Earnest Money Deposit (**EMD**) amount should be in the form of a demand draft or irrevocable, unconditional and on-demand bank guarantee drawn in favour of the Client and payable at Bhubaneswar must be submitted along with the Proposal.
 - The EMD submitted along with the Proposal will remain valid for a period of 30 days beyond validity period of the Proposal, including any extensions thereof.
 - No interest shall be payable by the Client for the sum deposited as EMD.
 - 1.2.7. The EMD of the unsuccessful Bidders will be returned within 1(One) month of signing of the Contract with the successful Bidder. The EMD of the successful Bidder will be returned upon the selected Bidder furnishing the Performance Security. A claim request needs to be submitted by the bidders along with Bank details.
- 1.3. Forfeiture of EMD:** The EMD shall be forfeited and appropriated by the Client as mutually agreed genuine pre- estimated compensation and damages payable to the Client for the time, cost and effort of the Client, without prejudice to any other right or remedy that may be available to the Client under the RFP or in law under the following conditions:
- If a Bidder withdraws or modifies its Proposal during the Proposal validity period or any extension agreed by the Bidder thereof.
 - If a Bidder is disqualified in accordance with Clause 2;
 - If the Bidder tries to influence the evaluation process or engages in corrupt, fraudulent, coercive or undesirable practice or restrictive practice as set out in Section 3.
 - If a Bidder is declared the first ranking Bidder and it:
 - i. Withdraws its Proposal during negotiations. However, failure to arrive at a consensus

between the Client and the first ranked Bidder shall not be construed as withdrawal of proposal by the first ranked Bidder;

- ii. fails to furnish the Performance Security in accordance with Clause 25 of the RFP;
- iii. fails to sign and return, as acknowledgement, the duplicate copy of the letter of award;
- iv. fails to fulfil any other condition precedent to the execution of the Contract, as specified in the letter of award; or
- v. fails to execute the Contract.

1.3.1. During, the bid stage, Bidders are invited to examine the Project in greater detail, and to carry out, at their cost, such studies as may be required for submitting their respective bid for award and implementation of the project.

1.3.2. Bids are invited for the project based on BOQ attached to this document of BSCL. The qualification assessment of the Bidder (the “**Successful Bidder**”) shall be through a Quality and Cost Based Selection (QCBS) process as defined in the RFP.

1.3.3. Any queries or request for additional information concerning this RFP shall be submitted in writing or by email on **bbsr.bscl@gmail.com** to the **General Manager (Administration), Bhubaneswar Smart City Limited**. No query violating the Schedule of Bidding Process will be responded to or entertained.

1.3.4. the Schedule of Bidding Process will be responded to or entertained.

1.4. SCHEDULE OF BIDDING PROCESS

1.	RFP Name	Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) System for Bhubaneswar City
2.	Mode of Submission	Online (https://tendersodisha.gov.in/)
3.	Tender Document Cost (Non-Refundable)	Rs. 11,800/- (Incl. GST) to be submitted in the form of Demand Draft issued by any Scheduled Commercial Bank in India in favor of “Bhubaneswar Smart City Limited” payable at Bhubaneswar
4.	Availability of Tender Document on website	From 6th September 2026 at 11:00 Hours in website https://tendersodisha.gov.in/
5.	Last date and time for submission of bid (Bid Due Date)	30th September 2026 to 17:00 Hours at the office of BSCL, Bhubaneswar
6.	Date and time of opening of Technical Bid	1st October 2026 at 15:30 Hours at the office of BSCL
7.	EMD and Tender Document Cost	The original hard copy of the DD submitted towards EMD and Tender Document Cost shall reach BSCL office on or before 1st October 1300 hrs.
7.	Date and time of opening of Financial Bids	Will be intimated to the Technically qualified bidders
8.	Validity of Bid	180 days of Bid Due Date
	Pre-Bid Meeting	11 th September 2026 at 12:30 PM in the conference hall of BSCL. Bidder shall email the queries to BBSR.BSCL@gmail.com by 10 th September 2026, 1730 hrs
9.	Issuance of Letter of Award (LOA)	Will be given on a date and time as intimated by BSCL to the successful bidder
10.	Submission of Performance Security	Within 15 days from the date of issuance of Letter of Award

11.	Signing of Contract Agreement	Within 15 days from the date of issuance of Letter of Award
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Note: If any date specified herein is a holiday, then the next working day will be the applicable date for the proposed event and the time will remain the same.

- 1) The Schedule indicated above is tentative and BSCL may change any or the entire schedule under intimation to all bidders.

SECTION – 2: INSTRUCTIONS TO BIDDERS

A. GENERAL

2.1. GENERAL TERMS OF BIDDING

- 2.1.1. No Bidder shall submit more than one Bid for the Project. A Bidder bidding individually shall not be entitled to submit another bid.
- 2.1.2. Unless the context otherwise requires, the terms not defined in this RFP but defined in the Request for Proposal document for the Project (the “RFP”) shall have the meaning assigned thereto in the RFP.
- 2.1.3. This RFP is being provided only as preliminary reference document by way of assistance to the Bidders who are expected to carry out their own surveys, investigations and other detailed examination of the project before submitting their Bids. Nothing contained in the RFP shall be binding on the BSCL nor confer any right on the Bidders, and the BSCL shall have no liability whatsoever in relation to or arising out of any or all contents of the RFP.
- 2.1.4. Notwithstanding anything to the contrary contained in this RFP, the detailed terms specified in the Contract Agreement shall have overriding effect, provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Contract Agreement.
- 2.1.5. The financial Bid should be furnished in the format at Appendix – VIII, clearly indicating the amount in both figures and words, in Indian Rupees, and signed by the Bidder’s authorized signatory. In the event of any difference between figures and words, the amount indicated in words shall be considered. The Technical proposal shall be submitted in the format at Appendix-I to VII.
- 2.1.6. The Financial Bid shall consist of the contract value to be quoted by the Bidder, which shall be payable to the BSCL as per the terms and conditions of this RFP and the provisions of the Contract Agreement.
- 2.1.7. The Bidder shall submit a Performance Security Declaration in accordance with the provisions of this RFP as per format at Appendix–V.
- 2.1.8. The Bidder should submit a Power of Attorney as per the format at Appendix–II, authorizing the signatory of the Bid to commit the Bidder.
- 2.1.9. Any condition or qualification or any other stipulation contained in the Bid shall render the Bid liable to rejection as a non-responsive Bid.
- 2.1.10. The Bid and all communications in relation to or concerning the Bidding Documents shall be in English language. Any printed literature furnished by the Bidder written in another language must be accompanied by its translation in the English language duly authenticated by the Bidder, in which case, for purposes of interpretation of the Bid, the translation shall govern.

- 2.1.11. The documents including this RFP and all attached documents, provided by the BSCL are and shall remain the property of the BSCL and are transmitted to the Bidders solely for the purpose of preparation and the submission of a Bid in accordance herewith. Bidders are to treat all information as **strictly confidential** and shall not use it for any purpose other than for preparation and submission of their Bid. The BSCL will not return to the Bidders any Bid, document or any information provided along therewith
- 2.1.12. A Bidder shall not have a conflict of interest (the “**Conflict of Interest**”) that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the BSCL shall be entitled to forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the BSCL and not by way of penalty for, inter alia, the time, cost and effort of the BSCL, including consideration of such Bidder’s proposal (the “**Damages**”), without prejudice to any other right or remedy that may be available to the BSCL under the Bidding Documents and/ or the Contract Agreement or otherwise. Without limiting the generality of the above, a Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:
- (i) a constituent of such Bidder is also a constituent of another Bidder; or
 - (ii) such Bidder, its Member or any Associate thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, its member or Associate, or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member or any Associate thereof; or
 - (iii) such Bidder has the same legal representative for purposes of this Bid as any other Bidder; or
 - (iv) such Bidder, or any Associate thereof, has a relationship with another Bidder, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other’s information about, or to influence the Bid of either or each other; or
 - (v) Such Bidder or any Associate thereof has participated as a consultant to the BSCL in the preparation of any documents, design or technical specifications of the Project.
 - (vi) such Bidder, its Member or any Associate thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, its Member or Associate, or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member or any Associate thereof; or
 - (vii) such Bidder has the same legal representative for purposes of this Bid as any other Bidder; or
 - (viii) such Bidder, or any Associate thereof, has a relationship with another Bidder, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other’s information about, or to influence the Bid of either or each other; or
 - (ix) Such Bidder or any Associate thereof has participated as a consultant to the BSCL in the preparation of any documents, design or technical specifications of the Project.

Explanation:

For purposes of this RFP, Associate means, in relation to the Bidder, a person who controls, is controlled by, or is under the common control with such Bidder (the “**Associate**”). As used in this definition, the expression “control” means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with

respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law

- 2.1.13. A Bidder shall be liable for disqualification if any legal, financial or technical adviser of the BSCL in relation to the Project is engaged by the Bidder, its Members or any Associate thereof, as the case may be, in any manner for matters related to or incidental to such Project during the Bidding Process or subsequent to the (i) issue of the LOA or (ii) execution of the Contract Agreement. In the event any such adviser is engaged by the Selected Bidder, after issue of the LOA or execution of the Contract Agreement for matters related or incidental to the Project, then notwithstanding anything to the contrary contained herein or in the LOA or the Contract Agreement and without prejudice to any other right or remedy of the BSCL, including the forfeiture and appropriation of the Performance Security, as the case may be, which the BSCL may have thereunder or otherwise, the LOA or the Contract Agreement, as the case may be, shall be liable to be terminated without the BSCL being liable in any manner whatsoever to the Selected Bidder for the same. For the avoidance of doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of RFP for the project. Nor will this disqualification apply where such adviser is engaged after a period of 1 (One) year from the date of signing of Contract Agreement.
- 2.1.14. This RFP is not transferable
- 2.1.15. Any award of agreement pursuant to this RFP shall be subject to the terms of Bidding Documents
- 2.1.16. BSCL, its employees and advisors would treat the bids and supporting information submitted by the bidders in a reciprocal confidentiality and would use it for the purpose of this bidding process alone. However, if the information/document submitted by the bidder needs to be re-produced under any statutory provision, such as Right to Information or litigations, BSCL would do so, with information to the Bidder, and any expenses related to the same would be charged to the bidder.

2.2. ELIGIBILITY OF BIDDERS

- A. Joint Venture (JV)/ Consortium not allowed
- B. A Bidder should not have a Conflict of Interest.
- C. For determining the eligibility of Bidders, the following shall apply:

2.2.1. Pre-Qualification Evaluation

Sl.No.	Eligibility Requirement	Supporting Documents/Action Required
1	The bidder shall be a Proprietorship/Partnership/LLP or a Pvt. Ltd. Company.	Copy of relevant registration certificate under applicable authority.
2	The Bidder should have an average annual financial turnover of INR 5 crores during the last Three (3) financial years	Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be enclosed along with CA certificate.
3	Bidder must have experience in working for any Smart City / Safe City / Police Dept/ State/Central Govt./PSU for SITC and O&M of ITMS/CCTV with Fiber Networking in the past 3 years financial years.	Work Order/ Work Completion Certificate/Proof of Payment to be enclosed.
4	Bidder should have work experience of executing similar nature of work (CCTC System) with at-least minimum order value of 4.0 Cr each during last 3 F.Y.	Work Order/Work Completion Certificate/Proof of Payment to be enclosed.
5	Bidder should have all following valid ISO certifications issued before publication of this tender a) ISO 9001 b) ISO 14001 c) ISO 27001	Copies of the valid certificates to be enclosed
6	Bidder should not debarred/ black-listed by any Central / State Government/PSU in India at the time of last date of submission of the bid.	Undertaking by the authorized signatory of Bidder

2.2.2. Technical Evaluation Process:

Sl.No.	Eligibility Requirement	Total Marks	Supporting Documents/ Action Required
1	Value of Similar Nature Of Work Orders executed during the last three financial years: (a) One order of minimum ₹4.00 crore = 10 marks (b) Two orders or more of minimum ₹4.00 crore each= 20 marks	20	Revised Clause: Work Order/Agreement/ Work Completion Certificate/Proof of Payment to be enclosed.
2	The bidder should have experience in the implementation of an outdoor, city-wide IP-based CCTV system comprising a minimum of 200 cameras in single order /100 cameras each in minimum three project for any State Government/Central Government/Public Sector Undertaking (PSU) in India during the last three (3) financial years.	20	Revised Clause: Work Order/Agreement along with the Work Completion Certificate/Go-Live Certificate/Proof of Payment to be enclosed.
3	Technical Presentation of the Complete System including operation & Maintenance Plan in presence of the Evaluation Committee.	30	Submission of Technical Presentation along with the Technical Bid.

Note: Minimum 75% Marks of 70 mark are required to qualify the technical evaluation.

2.2.3. Short-listing of Bidders: The Bidders who will score minimum 75% marks out of 70 marks will be considered technically qualified and their proposal will be shortlisted for opening and evaluation for financials.

- 2.2.4. **Evaluation of Financial Proposal** For financial evaluation, the financial quote indicated in the Financial Proposal of the technically qualified bidder shall be considered. Among the technically qualified bidders, the bidder quoting the lowest evaluated cost (L1) in the Financial Proposal shall be declared as the Successful Bidder.

The Client shall determine whether the Financial Proposals are complete, unqualified and unconditional. The cost indicated in the Financial Proposal shall be deemed as final and reflecting the total cost of works. Omissions, if any, in costing any item shall not entitle the Bidder to be compensated and the liability to fulfill its obligations as per the TOR within the total quoted price shall be that of the Bidder.

The Client will correct arithmetical errors during evaluation of Financial Proposals on the following basis:

- a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
- b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
- d) If the winning bidder does not accept the correction of errors, its proposal shall be disqualified.

- 2.2.5. The bidder quoting the lowest evaluated cost (L1), subject to technical compliance, shall be awarded the contract.

2.3. NUMBER OF BIDS AND COST THEREOF

- 2.3.1. No Bidder shall submit more than one Bid for the Project. A Bidder applying individually shall not be entitled to submit another Bid.
- 2.3.2. The Bidders shall be responsible for all of the costs associated with the preparation of their Bids and their participation in the Bidding Process. BSCL will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

2.4. SITE VISIT AND VERIFICATION OF INFORMATION

- 2.4.1. Bidders are encouraged to submit their respective Bids after visiting the Project site and ascertaining for themselves the site conditions, access to site, applicable laws and regulations, and any other matter considered relevant by them.
- 2.4.2. It shall be deemed that by submitting a Bid, the Bidder has:
 - a) made a complete and careful examination of the Bidding Documents;
 - b) received all relevant information requested from the BSCL;
 - c) accepted the risk of inadequacy, error or mistake in the information provided in the Bidding Documents or furnished by or on behalf of the BSCL relating to any of the matters referred to in Clause 2.4.1. above;
 - d) satisfied itself about all matters, things and information including matters referred to in Clause 2.4.1. hereinabove necessary and required for submitting an informed Bid, execution of the Project in accordance with the Bidding Documents and performance of all of its obligations there under;
 - e) acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the Bidding Documents or ignorance of any of the matters referred to in Clause 2.4.1 hereinabove shall not be a basis for any claim for compensation, damages, extension of time for

- performance of its obligations, loss of profits etc. from the BSCL, or a ground for termination of the Contract Agreement by the Agency;
- f) acknowledged that it does not have a Conflict of Interest; and
 - g) agreed to be bound by the undertakings provided by it under and in terms hereof.
- 2.4.3. BSCL shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to this RFP, the Bidding Documents or the Bidding Process, including any error or mistake therein or in any information or data given by the BSCL.
- 2.4.4. **VERIFICATION AND DISQUALIFICATION:** BSCL reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP or the Bidding Documents and the Bidder shall, when so required by the BSCL, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the BSCL shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the BSCL thereunder.
- 2.4.5. BSCL reserves the right to reject any Bid, if:
- a) at any time, a material misrepresentation is made or uncovered, or
 - b) the Bidder does not provide, within the time specified by the BSCL, the supplemental information sought by the BSCL for evaluation of the Bid.
- 2.4.6. In case it is found during the evaluation or at any time before signing of the Contract Agreement or after its execution and during the period of subsistence thereof, including the Contract thereby granted by the BSCL, that one or more of the pre-qualification conditions have not been met by the Bidder, or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the Agency either by issue of the LOA or entering into of the Contract Agreement, and if the Successful Bidder has already been issued the LOA or has entered into the Contract Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by the BSCL to the Successful Bidder or the Agency, as the case may be, without the BSCL being liable in any manner whatsoever to the Successful Bidder or Agency. In such an event, the BSCL shall be entitled to forfeit and appropriate the Performance Security, as the case may be, as Damages, without prejudice to any other right or remedy that may be available to the BSCL under the Bidding Documents and/ or the Contract Agreement, or otherwise.

B. DOCUMENTS

2.5. CONTENTS OF THE RFP

- 2.5.1. Please refer e-Tender guidelines of work department to understand registration & submission of bid in online portal.
- 2.5.2. This RFP comprises Disclaimer, Glossary set forth hereinafter, the contents as listed below, and will additionally include any Addenda issued in accordance with Clause 2.10.

Sections

- Section – 1: Introduction
- Section – 2: Instructions to Bidders
- Section – 3: Evaluation of Bids

- Section – 4: Fraud and Corrupt Practices
 Section – 5: Pre-bid Conference
 Section – 6: Miscellaneous
 Section – 7: Project Details and Conditions

Appendices

- I. Letter Comprising the Bid
- II. Annex – I: Details of Bidder
 Annex – II: Technical Capacity of Bidder
 Annex – III: Financial Capacity of Bidder
 Annex – IV: Statement of Legal Capacity
- III. Power of Attorney for Signing of Bid
- IV. Affidavit
- V. Undertaking from the Bidder
- VI. Bank Guarantee Form
- VII. Detailed Technical Specification
- VIII. Service Level Agreement

2.6. CLARIFICATIONS

- 2.6.1. Bidders requiring any clarification on the RFP may notify the BSCL in writing or by email. They should send in their queries before the date mentioned in the Schedule of Bidding Process specified in RFP. BSCL shall endeavor to respond to the queries within the period specified therein, but no later than 15 (fifteen) days prior to the Bid Due Date. All the clarifications will be published online on the website www.smartcitybhubaneswar.gov.in / <https://tendersodisha.gov.in/> without identifying the source of queries.
- 2.6.2. The queries must be submitted in the following format only:

RFP Name:			
Subject: Request for Clarification			
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:			
S.No.	RFP Clause No. / Page No.	Content of RFP requiring clarification	Points of clarification required
1.			
2.			
3.			

- 2.6.3. The BSCL shall endeavor to respond to the questions raised or clarifications sought by the Bidders. However, the BSCL reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this clause shall be taken or read as compelling or requiring the BSCL to respond to any question or to provide any clarification.
- 2.6.4. The BSCL may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. All clarifications and interpretations issued by the BSCL shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by the BSCL or its employees or

representatives shall not in any way or manner be binding on the BSCL.

2.7. AMENDMENT OF RFP

- 2.7.1. At any time prior to the Bid Due Date, the BSCL may, for any reason, whether at its own initiative or in response to clarifications requested by any Bidder, modify the RFP by the issuance of Addendum or a Corrigendum.
- 2.7.2. Any Addendum or a Corrigendum thus issued will be a part of the RFP and shall be published online on the BSCL website www.smartcitybhubaneswar.gov.in / <https://tendersodisha.gov.in/>. BSCL will assume no responsibility for receipt of the Addendum and Corrigendum.
- 2.7.3. In order to accord the Bidders a reasonable time for taking an Addendum or a Corrigendum into account, or for any other reason, the BSCL may, in its sole discretion, extend the Bid Due Date.

C. PREPARATION AND SUBMISSION OF BIDS

2.8. FORMAT AND SIGNING OF BID

- 2.8.1. The Bidder shall provide all the information sought under this RFP. The BSCL will evaluate only those Bids that are received online in the <https://tendersodisha.gov.in/> in the required formats and complete in all respects.
- 2.8.2. The Bid shall be typed or written in indelible ink and signed by the authorized signatory of the Bidder who shall also initial each page, in blue ink. In case of printed and published documents, only the cover shall be initialed. All the alterations, omissions, additions or any other amendments made to the Bid shall be initialed by the Authorized signatory of the bidder.
- 2.8.3. The language of the bid and related documents and correspondence shall be in English.
- 2.8.4. The currency for the purpose of the Bid shall be Indian Rupees.
- 2.8.5. While preparing the Proposals, the Bidders are expected to examine the RFP document in detail. Material deficiencies in providing the information requested may result in rejection of a proposal.
- 2.8.6. The pages of each part of the Bid shall be clearly numbered and stamped and the contents duly indexed. The Bid should not include any loose papers other than Tender Document Cost.

2.9. SEALING AND MARKING OF BID of Physical copy.

- 2.9.1. The Bidder Proposal will consist of three (3) parts:
 - a) **Envelope – 1: “Tender Document Cost” and “EMD”** of the required value and in approved format. If the Tender Document cost is found proper, then only technical, and financial proposal will be entertained.
 - b) **Envelope –2: “Technical Proposal”** shall submit in the format, together with the documents specified below:
 - i. Appendix – I: Letter comprising the bid along with Annexes and supporting documents
 - ii. Appendix – II: Power of Attorney for signing the Bid
 - iii. Appendix – III: Affidavit
 - iv. Appendix – IV: Undertaking
 - v. Appendix – V: Bank Guarantee Form
 - vi. Appendix – VI: Detailed Technical Specification
 - vii. Appendix – VII: Service Level Agreement

- 2.9.2. **Envelope – 3: “Financial Proposal” (Online)** in the format as provided.
- 2.9.3. All the three envelopes should be sealed and marked separately. If the Financial Proposal is enclosed in the envelope marked ‘Technical Proposal’, and vice versa, or is not sealed, the Proposal will be rejected.
- 2.9.4. The three envelopes containing the Tender Document Cost (Envelope 1), Technical Proposal (Envelope 2) and Financial Proposal (Envelope 3) shall be put together in an outer envelope.
- 2.9.5. This outer envelope shall be properly sealed and signed, and be clearly labeled with:
- i. Title of the Project
 - ii. RFP No.
 - iii. Deadline for Submission (Bid Due Date)
 - iv. Name and Address of the Bidder
 - v. On outer envelope containing three envelopes: ‘DO NOT OPEN EXCEPT IN THE PRESENCE OF THE EVALUATION COMMITTEE.
 - vi. On inner envelopes containing the Technical proposal: DO NOT OPEN BEFORE Date and Time and;
 - vii. On inner envelopes containing the Financial Proposal: ‘DO NOT OPEN UNTIL THE OPENING OF FINANCIAL PROPOSALS’
- 2.9.6. If the envelope is not sealed and marked as instructed above, the BSCL assumes no responsibility for the misplacement or premature opening of the contents of the Bid and consequent losses, if any, suffered by the Bidder.

2.10. BID DUE DATE

- 2.10.1. The Bids in the prescribed form as mentioned above must be delivered and received at the address mentioned below on or before the scheduled date and time of submission of bid as stated in the schedule of bidding process. Bids submitted by fax transmission /e-mail shall not be accepted.

General Manager,
Bhubaneswar Smart City Limited (BSCL)
5th Floor, ICOMC Tower Bhoi Nagar, Unit 9
Bhubaneswar – 751022, Odisha
Phone Number: - 06742540811

- 2.10.2. Proposals received without Tender Document Cost and EMD will be rejected.
- 2.10.3. BSCL may, in exceptional circumstances and its sole discretion, extend the Bid Due Date by issuing an Addendum uniformly for all bidders only on its website BSCL :: Bhubaneswar Smart City Limited (smartcitybhubaneswar.gov.in/) / <https://tendersodisha.gov.in/> .

2.11. LATE BIDS

Bids received by the BSCL after the specified time on the Bid Due Date shall not be eligible for consideration and shall be summarily rejected.

2.12. CONTENTS OF THE FINANCIAL BID

- 2.12.1. The Financial Bid shall be furnished in the format and shall consist of value to be quoted by the Bidder in the financial format.

Contract Value (Project Cost) = Capital Expenditure (CAPEX) + Operation & Maintenance (O&M) cost

- 2.12.2. The project will be awarded to the Bidder on the basis of lowest quoted price (L1).
- 2.12.3. The opening of Bids and acceptance thereof shall be substantially in accordance with this RFP.

2.13. MODIFICATIONS/ SUBSTITUTION/ WITHDRAWAL OF BID

- 2.13.1. The Bidder may modify, substitute or withdraw its Bid after submission, provided that written notice of the modification, substitution or withdrawal is received by the BSCL prior to Bid Due Date. No Bid shall be modified, substituted or withdrawn by the Bidder on or after the Bid Due Date.
- 2.13.2. Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid Due Date, unless the same has been expressly sought for by the BSCL, shall be disregarded.
- 2.13.3. The modification, substitution or withdrawal notice shall be prepared, sealed, marked, and delivered to the BSCL with the envelopes being additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL", as appropriate.

2.14. RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS

- 2.14.1. Notwithstanding anything contained in this RFP, the BSCL reserves the right to accept or reject any Bid and to annul the Bidding Process and reject all Bids, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefore. In the event that the BSCL rejects or annuls all the Bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.
- 2.14.2. BSCL reserves the right to reject any Bid and/ or Tender if:
 - a) at any time, a material misrepresentation is made or uncovered, or
 - b) the Bidder does not provide, within the time specified by the BSCL, the supplemental information sought by the BSCL for evaluation of the Bid.
- 2.14.3. In case it is found during the evaluation or at any time before signing of the Contract Agreement or after its execution and during the period of subsistence thereof, including the contract thereby granted by the BSCL, that one or more of the pre-qualification conditions have not been met by the Bidder, or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the Agency either by issue of the LOA or entering into of the Contract Agreement, and if the Bidder/SPV has already been issued the LOA or has entered into the Contract Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by the BSCL to the Bidder, without the BSCL being liable in any manner whatsoever to the Bidder and without prejudice to any other right or remedy which the BSCL may have under this RFP, the Bidding Documents, the Contract Agreement or under applicable law.
- 2.14.4. The BSCL reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP. Any such verification or lack of such verification by the BSCL shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the BSCL there under.

2.15. VALIDITY OF BIDS

The bids shall be valid for a period of **180 (One Hundred and Eighty) days** from the Bid Due Date.

In exceptional circumstances, prior to expiry of the original bid validity period, the BSCL may request the

bidders to extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing.

2.16. CONFIDENTIALITY

Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising the BSCL in relation to or matters arising out of, or concerning the Bidding Process. The BSCL will treat all information, submitted as part of the Bid, in confidence and would require all those who have access to such material to treat the same in confidence. The BSCL may not divulge any such information unless it is ordered to do so by any Statutory Entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or the BSCL.

2.17. CORRESPONDENCE WITH THE BIDDER

The BSCL shall not entertain any correspondence with any Bidder in relation to acceptance or rejection of any Bid.

2.18. ACKNOWLEDGEMENT BY THE BIDDER

2.18.1. It would be deemed that by submitting the Bid, the Bidder has:

- a) Made a complete and careful examination of the RFP document;
- b) Received all relevant information requested from the BSCL;
- c) Accepted the risk of inadequacy, error or mistake in the information provided in the RFP or furnished by or on behalf of the BSCL relating to any of the matters referred to in Clause 2.4 above;
- d) agreed to be bound by the undertakings provided by it under and in terms hereof; and
- e) Independently verified all information received from the BSCL.

2.18.2. The BSCL shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to the RFP or the Bidding Process, including any error or mistake therein or in any information or data given by the BSCL.

2.18.3. The BSCL shall not be liable for any mistake or error on the part of the Bidder in respect of the above.

2.19. INTEREST FREE SECURITY DEPOSIT

The selected bidder shall, for the performance of its obligations as defined hereunder shall prior to the date of execution of agreement, provide to BSCL, an interest free irrevocable and unconditional guarantee from a Bank for a sum equivalent to 10 percent of the contract value (the "Security Deposit / Performance Guarantee/ Performance Security") till the contract period issued in favour of Bhubaneswar Smart City Limited drawn from any Nationalized/Scheduled Banks in India.

2.19.1. The security deposit shall remain valid for period of 2 years 4 Months and beyond 6 months from the contract's expiry period.

2.19.2. The Client shall not make a claim under the Performance Security, except for amounts to which the Client is entitled under the Contract in the event of:

- i) failure by the Supplier to extend the validity of the Performance Security on extension of the validity

- of the contract, in which event the Client may claim the full amount of the Performance Security,
- ii) failure by the Supplier to pay the Client an amount due, as either agreed or determined pursuant to the dispute resolution process specified in the Contract, within forty-two (42) days after determination of the dispute;
 - iii) failure by the Supplier to pay any damages due to the Client under the Contract;
 - iv) failure by the Supplier to pay any amounts that are due to the Client on termination of the Contract;
 - v) the Supplier engaging in any corrupt, fraudulent, coercive, collusive, undesirable or restrictive practice.
- 2.19.3. If the Performance Security is or becomes invalid for any reason during the term of the Contract, the Supplier shall immediately notify the Client and provide the Client with a replacement Performance Security within five (5) days of the earlier Performance Security becoming invalid.
- 2.19.4. If the Supplier fails to extend the Performance Security, the Client shall be entitled to draw on and claim the un-drawn amount thereunder, provided that the amount so received shall be treated as a cash security and to the extent that there are no outstanding claims, shall be released upon submission of a new Performance Security acceptable to the Client.
- 2.19.5. On completion of the contractual obligations under the Contract by the Supplier, the Client shall return the Performance Security within Sixty days of the last payment made to the Supplier under the Contract.
- 2.19.6. Upon the BSCL being of the view that the selected bidder has committed any breach or default of this Agreement, BSCL shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Security Deposit as damages for such breach or default. Upon such encashment and appropriation from the Security Deposit, the selected bidder shall, within 30 (thirty) days thereof, replenish, in case of partial appropriation, to its original level the Security Deposit, and in case of appropriation of the entire Security Deposit provide a fresh Security Deposit, as the case may be, and the selected bidder shall, within the time so granted, replenish or furnish fresh Security Deposit as aforesaid failing which BSCL shall be entitled to terminate this Agreement and forfeit the remaining amounts of the Security Deposit, if any.
- 2.19.7. The said Security Deposit shall be returned by BSCL after the expiry of the Contract Period subject to fulfilment of all requirements by the selected bidder, to the satisfaction of BSCL and further subject to adjustment for all damages suffered by BSCL.

SECTION – 3: EVALUATION OF BIDS

3.1. OPENING OF BIDS

- 3.1.1. The bids as received shall be opened by the BSCL at the date and time as mentioned in Schedule of Bidding Process, in the presence of bidders who choose to be present. However, BSCL reserves the right to change the time of opening of bid in case of any exigency.
- 3.1.2. On opening of the main envelope, it will be checked if it contains the following documents:
- Tender Document Cost (Envelope 1)
 - Technical Proposal (Envelope 2)

- Financial Proposal (Envelope 3)

- 3.1.3. The Envelope 1 will be opened first and will be checked for its requisite value and format.
- 3.1.4. In case the Tender Document Cost found to be in acceptable form, then only the Qualification Proposals shall be considered and processed further.
- 3.1.5. If the Envelope 1 do not contain the Tender Document Cost, or not of required value or in acceptable form, the proposals submitted will be rejected.
- 3.1.6. All proposals containing the Envelope 1 in requisite and acceptable form, their Technical Proposals (Envelope 2) shall be opened one at a time and the following read out and recorded: the name of the Bidder; and any other details as the BSCL may consider appropriate.
- 3.1.7. Only Technical Proposals which are read out and recorded at Bid opening stage shall be considered for evaluation. No Proposal shall be rejected at the opening of Technical Proposals except for Late Bids.
- 3.1.8. A list of the Bidders or their representatives attending the opening of Bids shall be prepared and their signatures shall be obtained on the same (no signatures shall be obtained if the Bid Opening is done through Video Conferencing).
- 3.1.9. The Financial proposal shall not be opened on that day and shall be kept separately in the safe custody of the BSCL to be opened and evaluated later on as per the procedure detailed herein. The BSCL shall open Financial Bids of only those Bidders who meet the eligibility criteria specified in this RFP at such date and time as intimated by the BSCL.

3.2. TEST OF RESPONSIVENESS

- 3.2.1. Prior to evaluation of bids, BSCL shall determine whether the bid submitted by each Bidder is substantially responsive to the requirements of the RFP.
- 3.2.2. A bid shall be considered responsive only if:
 - a) The bid is received by the Bid Due Date including any extension thereof;
 - b) The bid is signed, sealed and marked;
 - c) The bid is accompanied with the Tender Document Cost;
 - d) The bid is accompanied with EMD;
 - e) It is accompanied by the valid Power of Attorney;
 - f) It contains all the information (complete in all respects) as requested in this RFP and/ or Bidding Documents (in formats same as those specified);
 - g) Each page of the Bid document submitted is signed and sealed by the authorized signatory of the Bidder.
 - h) It does not contain any condition or qualification; and
 - i) It is not non-responsive in terms hereof.
- 3.2.3. The BSCL reserves the right to reject any bid which is non-responsive and no request for alteration,

modification, substitution or withdrawal shall be entertained by the BSCL in respect of such Bid.

3.3. EVALUATION OF BIDS

3.3.1. Evaluation of Technical Proposal

- 3.3.1.1. BSCL constituted “Technical Evaluation Committee” will be responsible for evaluation and ranking of proposals received based on the responsiveness of the Bidder to the terms & conditions using the eligibility criteria and points system as specified in the RFP.
- 3.3.1.2. Each Technical Proposal will receive a technical score **(ST)**. A Proposal shall be rejected if it does not achieve the minimum technical qualification mark.
- 3.3.1.3. After the technical evaluation is completed, BSCL will notify Bidders whose Proposals did not meet the minimum qualifying technical mark or Bidders whose Technical Proposals were considered non-responsive to the RFP requirements, indicating that their Financial Proposals will be unopened after completion of the selection process.
- 3.3.1.4. BSCL will simultaneously notify the Bidders whose Technical Proposals received a minimum qualifying mark or higher, indicating the date, time, and location for opening of Financial Proposals.
- 3.3.1.5. If any information furnished by the Bidder is found to be incomplete, or contained in formats other than those specified herein, the BSCL may, in its sole discretion, seek clarifications/ information in writing from any Bidder regarding its Bid. Any clarification submitted by a Bidder with regard to its Bid that is not in response to a request by BSCL shall not be considered.
- 3.3.1.6. In the event that a Bidder claims credit for an Eligible Project, and such claim is determined by the BSCL as incorrect or erroneous, the BSCL shall reject such claim and exclude the same from evaluation. Where any information is found to be patently false or amounting to material misrepresentation, the BSCL reserves the right to reject the Bid in accordance with the provisions of RFP.
- 3.3.1.7. Bidders are advised that qualification of Bidders will be entirely at the discretion of BSCL. Bidders will be deemed to have understood and agreed that no explanation or justification on any aspect of the Bidding Process or selection will be given.
- 3.3.1.8. The BSCL reserves the right not to proceed with the Bidding Process at any time without notice or liability and to reject any Bid without assigning any reasons.

3.3.2. Evaluation of Financial Proposal

- 3.3.2.1. The Client will open Envelope-3 “**Financial Bid**” (in the presence of the Bidders’ representatives who choose to attend), for the Bidders who pass the evaluation of Technical Bid on the date and time as intimated to the qualified technical bidders.
- 3.3.2.2. Among the technically qualified bidders, the bidder quoting the lowest evaluated cost (L1) in the Financial Proposal shall be declared as the Successful Bidder.
- 3.3.2.3. The financial proposal must be complete, unqualified, and unconditional. Any omission in pricing shall not entitle the bidder to additional compensation; the bidder shall be responsible for fulfilling all obligations within the quoted price.
- 3.3.2.4. In case of arithmetic discrepancies:
 - If there is a mismatch between unit price and total price, the unit price shall prevail and the total price will be corrected.
 - If there is an error in addition/subtraction of subtotals, the subtotals shall prevail and the total will be corrected.

➤ If there is a discrepancy between words and figures, the amount in words shall prevail.

- 3.3.2.5. If the winning bidder does not accept the correction of errors, its proposal shall be disqualified.
- 3.3.2.6. The bidder quoting the lowest evaluated cost (L1), subject to technical compliance, shall be awarded the contract.
- 3.3.2.7. The bidders or their authorized representatives who are present to witness the Financial Bid opening shall sign an attendance sheet / register evidencing their attendance as a witness to the Financial Bid opening process. In the event of the specified date of Financial Bid opening being declared a holiday, the Financial Bids will be opened on the next working day at the same time and place or on any other day/time, as intimated by the BSCL.
- 3.3.3. The Bidder shall specify the value in the Financial Bid in both numeric and alphabetical manner in the format provided for such Financial Bid in this RFP. For avoidance of doubt, it is clarified that in the event of discrepancy in the quoted contract value in numeric and alphabetical manner, the contract value quoted in alphabetical manner shall be considered.

3.4. SELECTION OF BIDDER

- 3.4.1. Following completion of evaluation of Technical, the bidder quoting the lowest evaluated cost (L1) in the Financial Proposal shall be declared as the Successful Bidder.
- 3.4.2. After selection, a Letter of Award (the “**LOA**”) shall be issued by the BSCL to the Successful Bidder and the Successful Bidder shall, within 7 (seven) days of the receipt of the LOA, sign and return the duplicate copy of the LOA in acknowledgement thereof.
- 3.4.3. After acknowledgement of the LOA as aforesaid by the Successful Bidder, the Interest free Security Deposit to be submitted within 30 days from the date of issue of LOA and the Contract Agreement shall be executed between BSCL and the Successful Bidder within 45 days from the date of issue of LOA. Payment of stamp duty on agreement, if any, to be executed in pursuance of this bid shall be borne by successful bidder.
- 3.4.4. The Successful Bidder shall not be entitled to seek any deviation, modification, or amendment in the Contract Agreement.

3.5. CONTACTS DURING BID EVALUATION

Bids shall be deemed to be under consideration immediately after they are opened and until such time the BSCL makes official intimation of award/ rejection to the Bidders. While the Bids are under consideration, Bidders and/ or their representatives or other interested parties are advised to refrain from contacting by any means, the BSCL and/ or their employees/ representatives on matters related to the Bids under consideration.

SECTION – 4: FRAUD AND CORRUPT PRACTICES

- 4.1. The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process and subsequent to the issue of LOA and during the subsistence of Contract Agreement. Notwithstanding anything to the contrary contained herein, or in the LOA, or the Contract Agreement, the BSCL may reject a Bid, withdraw the LOA or terminate the Contract Agreement, as the case may be, if it determines that the Bidder or Agency, as the case may be, has directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, the BSCL shall be entitled to forfeit and appropriate the Bid Security or Performance Security, as the case may be, as Damages without prejudice to any other right or remedy that may be available to the BSCL under the Bidding

Documents and/ or the Contract Agreement, or otherwise.

- 4.2. Without prejudice to the rights of the BSCL under Clause 4.1 hereinabove and the rights and remedies which the BSCL may have under the LOA or the Contract Agreement, or otherwise if a Bidder or Agency, as the case may be, is found by the BSCL to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LOA or the execution of the Contract Agreement, such Bidder or Agency shall not be eligible to participate in any tender or RFP issued by the BSCL and/or the Authority during a period of 2 (two) years from the date such Bidder or Agency, as the case may be, is found by the BSCL to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.
- 4.3. For the purposes of this Clause 4, the following terms shall have the meaning hereinafter respectively assigned to them:
- a) **“corrupt practice”** means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the BSCL who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOA or has dealt with matters concerning the Contract Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the BSCL, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or (ii) save and except as permitted under the RFP document, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Contract Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Contract Agreement, who at any time has been or is a legal, financial or technical adviser of the BSCL in relation to any matter concerning the Project;
 - b) **“fraudulent practice”** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;
 - c) **“coercive practice”** means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Bidding Process;
 - d) **“undesirable practice”** means (i) establishing contact with any person connected with or employed or engaged by the BSCL with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and
 - e) **“restrictive practice”** means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bidding Process.
 - f) Both Parties shall comply with all applicable anti-bribery and anti-corruption laws in performance of this purchase order and in all matters relating thereto.

SECTION – 5: PRE-BID CONFERENCE

- 5.1. Pre-Bid conference of the Bidders shall be convened at the designated date & time as mentioned in the Schedule of Bidding Process either through online mode through Video Conference or physically. The address for physical holding of Pre-bid Conference is as follows: **Bhubaneswar Smart City Limited**, A maximum of two representatives of each Bidder shall be allowed to participate on production of authority letter from the Bidder.
- 5.2. During the course of Pre-Bid conference, the Bidders will be free to seek clarifications and make suggestions for consideration of the BSCL. BSCL shall endeavor to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.

SECTION – 6: MISCELLANEOUS

- 6.1. The Bidding Process shall be governed by, and construed in accordance with, the laws of India and the Courts at Bhubaneswar, Odisha shall have exclusive jurisdiction over all disputes arising under, pursuant to and / or in connection with the Bidding Process.
- 6.2. The BSCL, in its discretion and without incurring any or liability, reserves the right, at any time, to:
 - a) suspend and/ or cancel the Bidding Process and/ or amend and/ or supplement the Bidding Process or modify the dates other terms conditions relating thereto;
 - b) consult with any Bidder in order to receive clarification or further information;
 - c) retain any information and/ or evidence submitted to the BSCL by, on behalf of, and / or in relation to any Bidder; and / or
 - d) Independently verify, disqualify, reject and/ or accept any and all submissions or other information and/ or evidence submitted by or on behalf of any Bidder.
 - e) Neither party (BSCL or the successful bidder) shall be liable for any consequential or indirect damages, and the aggregate liability of both parties shall in no case exceed the work order amount.
- 6.3. It shall be deemed that by submitting the Bid, the Bidder agrees and releases the BSCL, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/ or performance of any obligations hereunder, pursuant hereto and/ or in connection with the Bidding process and waives any and all rights and/ or claims it may have in this respect, whether actual or contingent, whether present or in future.

SECTION – 7: PROJECT DETAILS AND CONDITIONS

7.1. RIGHT TO SUB-CONTRACT

The selected bidder shall have no right to sub-contract the work to any other third party.

7.2. DURATION OF CONTRACT PERIOD

- 7.2.1. The duration of the contract period as prescribed in this RFP will be for the period of 28 Months for supply, installation, testing and commissioning and O&M from the date of signing of Contract Agreement with

an extension based on mutually agreed terms and conditions.

- 7.2.2. Till the signing of the Contract Agreement, the LOA shall form a binding contractual agreement between BSCL and the Successful Bidder as per terms of this RFP.

7.3. PROJECT DELIVERABLE, MILESTONES AND TIMELINES

- T0 = Date of Signing of Agreement
- T1 = After Go-Live & Final Acceptance Testing

Sl. No.	Milestone	Deliverables (Phase 1)	Timelines (in days)
1	Project Initiation	Project Team deployment, Detailed Survey Report including infrastructure AS-IS and TO BE assessment, phase wise location distribution. Design Built Report (DBR) containing the High-Level Design, Low Level Design, BOQ Detailed Project deployment plan including Operations Management, Contract Management, Risk Management, Information Security and Business Continuity, Capacity Building Plan	T0+15
2a	Supply of Materials for ICOMC and 100% Field Locations	Material Delivery, Inspection Reports (Component-wise)	T0+45
2b	Installation of Materials at ICOMC and 50 % Field Locations.	Installation of Materials at ICOMC and 50 % Field Locations. (Component Wise)	T0+60
2c	Commissioning of Materials at ICOM and 50 % Field Locations	Commissioning of Materials at ICOMC and 50 % Field Locations (Component Wise)	T0+75
2d	UAT(User Acceptance Test)	Overall System functional test	T0+90
3a	Installation of Materials at 50 % Field Locations.	Installation of Materials at 50 % Field Locations. (Component Wise)	T0+75
3b	Commissioning of Materials at 50 % Field Locations	Commissioning of Materials at 50 % Field Locations (Component Wise)	T0+90
4	Final Go Live and UAT	Overall System Go Live and UAT	T0+120 (T1)
5	Operation and Maintenance phase (O&M) - After Final Acceptance Testing & Go- Live of entire solutions	Monthly SLA Compliance Report	T1 + 24 Months

7.4. Scope of Contractor

- The Contractor has to supply the materials as per the BOQ strictly complying with the technical specification of the tender.
- Contractor has to adhere the project milestone, any delay due to non-availability of the site clearance or any reasonable challenges have to be informed by the contractor to the department in writing.
- Contractor has to submit the network diagram and other operation manuals of the major items.
- Contractor has to provide minimum 05 days training to at least 05 authorized officials of the department on the operation of the entire system.

7.5. Scope of the Purchaser/Department

- Additional Items apart from the BOQ will be either provided by the Department or procured from the

- contract at the mutually agreed cost.
- The required core of the OFC from the existing network will be made available to the contractor by the department as per the requirement.

SECTION – 8: PAYMENT SCHEDULE

8.1. Payment Schedule – Implementation Phase

Based on findings of the site survey activity done by the SI, the SI may propose a change in the number of sites or individual units to be deployed for the entire project as well as overall scope of work and a consequent change in phasing. BSCL also retains the right to Suo-Moto change the number of sites or individual units to be deployed for each components of the Project. The final decision on change in phasing and related change in payment schedules shall be at the discretion of BSCL.

It should be noted that SI has to take prior approval from BSCL on a request order before supplying the project components for phase wise implementation of the project.

SI should complete all the activities within the defined timelines as indicated in Timeline of this project. The timeline will be reviewed regularly during implementation phase and may be extended in case BSCL feels that extension in a particular Request Order/Integration or any track is imperative, for the reason beyond the control of the bidder. In all such cases BSCL's decision shall be final and binding. The SI will be eligible for the payment based on the completion of activities and approval of the relevant deliverables.

- The request for payment shall be made to the Authority in writing, accompanied by invoices describing, as appropriate, the services performed, and by the required documents -Pre- Acceptance Testing, Test Results, Audit Reports etc.
- All payments shall be made after Verification of documentation by the BSCL or any person authorized by BSCL.
- Due payments shall be made promptly by the Authority, generally within Thirty (30) days after submission of an invoice or request for payment by SI.
- The currency in which payments shall be made to the SI under this Contract shall be Indian Rupees (INR) only.
- In case of disputed items, the disputed amount shall be withheld and shall be paid only after settlement of the dispute.
- Any penalties/ liquidated damages, as applicable, for delay and non-performance, as mentioned in this RFP document, shall be deducted from the due payments of the respective milestones.
- Taxes and duties, as applicable, shall be deducted / paid, as per the prevalent rules and regulations as on date of the invoice. Any change in rates of Taxes and duties during the project shall adjusted upwards or downwards as per the latest regulations.
- All payments shall be made on pro-rata basis on actual supplies or services provided.

8.2. The payments shall be made as per the following schedule:

- 1) 35% of the Project cost shall be released on Supply of material on pro-rata basis and as per the

- approved supply plan by BSCL.
- 2) 30% of the Project cost shall be released on Installation on pro-rata basis and as per the approved supply plan by BSCL.
 - 3) 15% of the Project cost shall be released on Commissioning on prorata basis and as per the approved supply plan by BSCL.
 - 4) 10% of the Project cost shall be released on overall Go Live of the complete project.
 - 5) 2% of the Project cost shall be released on successful completion of DLP period of 1 year from Go-Live date or Operational Acceptance certificate date issued by the authority
 - 6) 08% (2% per year) of the Project cost shall be released on quarterly basis (0.5% per Quarter) from successful completion of DLP period of 1 year (i.e, from 2nd Year).

8.1.1. **Payment Schedule – Operation & Maintenance Phase**

The Operations and maintenance phase will start after completion of 1-year DLP. The SI will be required to adhere to the SLA and provide post implementations support of DLP and O&M for the remaining project period after implementation, and Go Live. Payment towards Operation & Maintenance shall be made subject to fulfillment of SLAs.

- 9.2.1. Agency shall indemnify BSCL from/ against any claims made or damages suffered by BSCL by reason of any default on the part of the bidder in the due observance and performance of the provisions of any law which may be related to the purpose of the contract agreement and to the area in which premises are located.
- 9.2.2. Agency shall operate the implementation work without disturbing the natural surroundings and ensuring that the local flora and fauna are not disturbed.
- 9.2.3. Agency shall not be allowed to implement the work in a manner that violates the regulatory and policy framework encompassing in India comprises a number of statutes, rules, regulations, guidelines, etc. laid down by the Government of India. If it is found that the Agency is violating the same, then the contract agreement shall stand cancelled without further reference to the arbitrator.
- 9.2.4. BSCL will not be responsible for any accident / theft etc. involving any personnel / asset while on work throughout the Contract period. The Agency itself would be responsible for such accident / incident and for any kind of compensation to any worker/employee for such accident. The Agency is advised to have its personnel and assets insured under suitable insurance schemes at its own cost.
- 9.2.5. Performance Bank guarantee 10% (EPBG) of the total project cost should be submitted Within 15 Days Prior to Signing of SLA after receiving of LOA.
- 9.2.6. Any type of statutory taxes applicable on services under this RFP and contract agreement (either in force at present or may be applicable in future by a competent order/notification) will be borne by the Agency and the BSCL would not make any payment on this account. In case, the Agency fails to comply with any statutory/ taxation liability under appropriate law, and as a result thereof the BSCL is put to any loss/obligation, monetary or otherwise, the BSCL will deduct the same from the Security Deposit of the Agency, to the extent of the loss or obligation in monetary terms.

APPENDIX - I: LETTER COMPRISING THE BID

(On the letterhead of the Bidder)

Ref.:

Dated:

To

General Manager (Administration)

5th Floor, ICOMC Tower Bhoi Nagar, Unit 9

Bhubaneswar – 751022, Odisha Phone Number: - 06742540811

Sub: RFP for Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) for Bhubaneswar City.

Dear Sir,

With reference to your RFP document dated _____, I/we, having examined the RFP document and understood its contents, hereby submit my/our Bid for Qualification for the aforesaid project. The Bid is unconditional and unqualified.

2. I/ We acknowledge that the BSCL will be relying on the information provided in the Bid and the documents accompanying the Bid for selection of the Bidders for the aforesaid project, and we certify that all information provided therein is true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying such Bid are true copies of their respective originals.
3. This statement is made for the express purpose of qualifying as a Bidder for the aforesaid Project.
4. I/We shall make available to the BSCL any additional information it may find necessary or require supplementing or authenticate the Bid.
5. I/ We acknowledge the right of the BSCL to reject our Bid without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.
6. I/We declare that:
 - a) I/We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the BSCL; and
 - b) I/We do not have any conflict of interest;
 - c) I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in Section - 4 of the RFP documents, in respect of any tender or request for proposal issued by or any agreement entered into with the BSCL or any other public sector enterprise or any government, Central or State;
 - d) I/We hereby certify that we have taken steps to ensure that in conformity with the provisions of Section

- 4 of the RFP documents, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice; and
- e) The undertakings given by us along with the application in response to the RFP are true and correct as on the Bid Due Date and I/We shall continue to abide by them.
7. I/We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any Bid that you may receive nor to invite the Bidders to Bid for the Project, without incurring any liability to the Bidders, in accordance with the RFP document.
 8. I/We believe that we satisfy the Turnover criteria and meet all the requirements as specified in the RFP document.
 9. I/We declare that we are applying individually for this tender.
 10. I/ We certify that in regard to matters other than security and integrity of the country, we have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the Project or which relates to a grave offence that outrages the moral sense of the community.
 11. I/ We further certify that in regard to matters relating to security and integrity of the country, we have not been charge-sheeted by any agency of the Government or convicted by a Court of Law.
 12. I/We undertake that in case due to any change in facts or circumstances during the Bidding Process, we are attracted by the provisions of disqualification in terms of the provisions of this RFP, we shall intimate the BSCL of the same immediately.
 13. The Statement of Legal Capacity as per format provided at Annex-IV in Appendix-I of the RFP document, and duly signed, is enclosed. The power of attorney for signing of Bid as per format provided at Appendix II is also enclosed.
 14. I/We, hereby irrevocably waive any right or remedy which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by the BSCL in connection with the selection of Bidders, or in connection with the Bidding Process itself, in respect of the above- mentioned Project and the terms and implementation thereof.
 15. In the event of our being declared as the Selected Bidder, I/we agree to enter into a Contract Agreement in accordance with the form which shall be provided by BSCL. We agree not to seek any changes in the aforesaid form and agree to abide by the same.
 16. I/ We have studied all the Bidding Documents carefully and also surveyed the project site. We understand that except to the extent as expressly set forth in the Contract Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by BSCL or in respect of any matter arising out of or relating to the Bidding Process including the award of Contract.
 17. I/ We agree and understand that the Bid is subject to the provisions of the Bidding Documents. In no case, I/we shall have any claim or right of whatsoever nature if the Project is not awarded to me/us or our Bid is not opened or rejected.
 18. I/ We agree to pay any applicable taxes to the respective authorities thereon, in accordance with the terms of the Bidding Documents.

19. I/ We shall keep this offer valid for 180 (one hundred and eighty) days from the Bid Due Date specified in the RFP.

20. I/we agree and undertake to abide by all the terms and conditions of the RFP document.

In witness thereof, I/We submit this Bid under and in accordance with the terms of the RFP Document.

Yours faithfully,

Date:

(Signature, Name and designation of the Authorized Signatory)

Place:

Name and seal of the Bidder/ Lead Member

APPENDIX - I

ANNEX - I: DETAILS OF BIDDER

1.	Name of the Bidder Firm:	
2.	Registered Office Address of the Bidder Firm:	
3.	Legal status (Company / Partnership Firm / Proprietary Firm, etc.)	
4.	Country & Year of Incorporation:	
5.	Principle place of business:	
6.	Brief description of the bidder including details of its main lines of business and proposed role and responsibility in this Project:	
7.	Name, designation and Mobile Phone No. of the Authorized Representative of the Bidder to whom all references shall be made:	
8.	PAN Card No.	
9.	GST No.	

Note: Relevant supporting documents to be enclosed.

(Signature, name and designation of the authorized signatory)

For and on behalf of

ANNEX – II: TECHNICAL CAPACITY OF THE BIDDER

II A: Abstract of Bidder Experience (eligible project details indicating broad scope)

SN	Name of Project	Name of Client with Address and Contact No.	Date of Award of Contract / Assignment	Date of Completion of Assignment	Estimated Value of Contract (in Crore)	Attachments (Contract Agreement/ Work Order / Completion Certificates)
(1)	(2)	(3)	(4)	(5)	(6)	(7)

II B: Abstract of Bidder Experience (work experience of executing similar nature of work with number of CCTV cameras)

SN	Name of Project	Name of Client with Address and Contact No.	Date of Award of Contract / Assignment	Date of Completion of Assignment	Number of CCTV Cameras Installed	Attachments (Contract Agreement/ Work Order)
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Note:

- (i) The bidder should provide details of only those projects that have been undertaken by it under its own name.
- (ii) The names and chronology of Eligible projects included here should conform to project-wise details submitted in form II B.
- (iii) The bidder may attach separate sheets to provide brief particulars of other relevant experience of the bidder.

(Signature, name and designation of the authorized signatory)
For and on behalf of

II B: Details of Bidder Experience (Eligible similar Projects)

[The following information should be provided in the format below for each reference assignment for which your firm was legally contracted by the Client stated below for each assignment]

Assignment name:	Estimated Value of Contract (in Rs. Crore):
Name & Address of Client:	
Country:	Location within country:
Period of Contract:	Details of services undertaken:
Start date (month/year):	Approx. value of the services provided by your firm under the contract (in Rs):
Completion date (month/year):	
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed:	
Narrative description of Project:	

****(Certificate from Client regarding experience should be furnished)***

(Signature, name and designation of the authorized signatory)

For and on behalf of

APPENDIX - I

ANNEX – III: FINANCIAL CAPACITY OF THE BIDDER

Name of the Bidder:.....

1. Net Worth (2022-23, 2023-24, 2024-25)

Financial Year	Net Worth (In Rs Crore)

2. Annual Turnover

S.No.	Financial Year	Annual Turnover (In Rs Crore)
1	2022-23	
2	2023-24	
3	2024-25	

3. Name and Address of the Bidder's Bankers

(Signature, name and designation of the authorized signatory)

For and on behalf of _____

Signature & Stamp of Statutory Auditor/ Chartered Accountant

Membership No.

Regn. No. of the Statutory Auditor/ CA's firm:

Instructions:

1. Along with the above format in a separate sheet on the letterhead of the Statutory Auditor/ Chartered Accountant's Firm, duly signed Certified copies of ITR, Balance sheet and Profit & Loss Account statements are to be enclosed.

APPENDIX - I

ANNEX – IV: STATEMENT OF LEGAL CAPACITY (On the Letter head of the Bidder)

Ref

Date:

To

The **General Manager**

5th Floor, ICOMC Tower, Bhoi Nagar, Unit 9

Bhubaneswar – 751022, Odisha, Phone Number: - 06742540811

Sub: RFP for RFP for Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) for Bhubaneswar City.

Sir,

We hereby confirm that we satisfy the terms and conditions laid out in the RFP document.

We have agreed that (insert individual's name) will act as our representative and has been duly authorized to submit the RFP. Further, the authorized signatory is vested with requisite powers to furnish such letter and authenticate the same.

Yours faithfully,

(Signature, name and designation of the authorized signatory) For
and on behalf of.....

APPENDIX – II: POWER OF ATTORNEY FOR SIGNING OF BID

(On Rs 100/- Stamp Paper duly notarized)

Know all men by these presents, We, (name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr. / Ms(Name), son/ daughter /wife of and presently residing at(Address), who is presently employed with us and holding the position of , as our true and lawful attorney (hereinafter referred to as the “**Attorney**”),

to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our bid for the project “RFP for Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) for Bhubaneswar City.” (the “**Project**”) proposed or being developed by the Bhubaneswar Smart City Limited (the “**BSCL**”) including but not limited to signing and submission of all applications, bids and other documents and writings, participate in pre-bids and other conferences and providing information / responses to BSCL, representing us in all matters before the BSCL, signing and execution of all contracts including the Contract Agreement and undertakings consequent to acceptance of our bid, and generally dealing with BSCL in all matters in connection with or relating to or arising out of our bid for the said Project and/or upon award thereof to us and/or till entering into the Contract Agreement with the BSCL.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, THE ABOVE-NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF, 20...

For.....

(Signature)

(Name, Designation and Address)

Witness:

- 1.
- 2.

(Notarized)

Accepted

.....

(Signature)

(Name, designation and address of the Attorney)

Notes:

The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.

- *Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favor of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*
- *For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention, 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.*

APPENDIX – III: AFFIDAVIT

(On Rs 100/- Stamp Paper duly notarized)

I,, S/o, resident of, the(insert designation) of the(insert name of the bidder), do solemnly affirm and state as follows :

1. That I am the authorized signatory of(insert name of company) (hereinafter referred to as “Bidder”) and I am duly authorized by the Board of Directors of the Bidder to swear and depose this Affidavit on behalf of the Bidder.
2. That I have submitted information with respect to our eligibility for Bhubaneswar Smart City Limited (hereinafter referred to as “BSCL”) for RFP for Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) for Bhubaneswar City) (hereinafter referred to as “Project”), after going through the Request For Proposal (‘RFP’) document and I further state that all the said information submitted by us are accurate, true and correct and is based on our records available with us.
3. That I hereby affirm to furnish any information, which may be requested and as may be deemed necessary by BSCL to verify our credentials/information provided by us under this tender.
4. That if at any point of time including the Agreement Period, BSCL requests any further/additional information regarding our financial and/or technical capabilities, or any other relevant information, I shall promptly and immediately make available such information accurately and correctly to the satisfaction of BSCL.
5. That I fully acknowledge and understand that furnishing of any false or misleading information by us in our RFP shall entitle us to be disqualified from the bidding process for the Project. The costs and risks for such disqualification shall be entirely borne by us.
6. I state that all the terms and conditions of the Request for Proposal (RFP) Document have been duly complied with.

DEPONENT VERIFICATION: -

I, the above-named deponent, do verify that the contents of paragraphs 1 to 6 of this affidavit are true and correct to my knowledge. No part of it is false and nothing material has been concealed. Verified

at, on this day of.....2026

DEPONENT

APPENDIX – IV: UNDERTAKING FROM THE BIDDER

(On the letter head of the Bidder)

To,

General Manager

5th Floor, ICOMC Tower, Bhoi Nagar, Unit 9

Bhubaneswar – 751022, Odisha, Phone Number: - 06742540811

Sub: RFP for Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) for Bhubaneswar City.

Dear Sir,

We do hereby undertake that our company is not blacklisted/ debarred by any of the Central & State Governments or Public Sector Undertakings or other Government Authorities or Local Body in India as on the date of the submission of the RFP.

Also, none of the work has been rescinded / terminated by any Central or State Govt. Department / Public Sector Undertaking / Other Govt. entity or local body after award of contract to us due to our non-performance.

We further confirm that we are aware that our Proposal for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered regarding the requirements of this RFP at any stage of the Bidding Process or thereafter during the agreement period.

Dated thisDay of, 20_

(Signature, name and designation of the authorized signatory) For and on behalf of.....

APPENDIX - V: FORM OF PERFORMANCE SECURITY

(On letter head of the Bidder)

[On Appropriate Stamp Paper]

Bank Guarantee No. []

To,

General Manager

5th Floor, ICOMC Tower, Bhoi Nagar, Unit 9

Bhubaneswar – 751022, Odisha, Phone Number: - 06742540811

WHEREAS (supplier), a company incorporated under the Company Act,..... with its principal office at (hereinafter called “the supplier”) has undertaken, in pursuance of contract no. dated RFP for Design, Supply, Installation, Configuration, Testing, and Commissioning of an IP-Based Closed-Circuit Television Camera (CCTV) for Bhubaneswar City as a part of the pan-city smart solutions, which involve the use of technology, information and data to improve the traffic infrastructure and services within the city of Bhubaneswar (the Project), as a part of the implementation of Smart Cities Mission in Bhubaneswar (herein after called “the contract”).

AND WHEREAS it has been stipulated by you in the said contract that the Supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the Supplier Firm, up to a total of Rs. /- (INR.....only), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of Rs...../(INR only) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed thereunder or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until the day of

Our _____ branch _____*(Name & Address of the _____*branch) is liable to pay the guaranteed amount depending on the filing of claim and any part thereof under this Bank Guarantee only and only if you serve upon us at our _____* branch a written claim or demand and received by us at our _____* branch on or before Dt..... otherwise bank shall

be discharged of all liabilities under this guarantee thereafter.

.....

(Signature of the authorized officer of the Bank)

.....Name and designation of

the officer

.....

..... Seal, name & address of
the Bank and address of the Branch

*Preferably at the headquarters of the authority competent to sanction the expenditure for purchase of goods
/ service

Service Level Agreement and Packages
COMPREHENSIVE ANNUAL MAINTENANCE SERVICE CAMC OF CCTV SYSTEM AT AIR CARGO
COMPLEX, BAGDOGRA AIRPORT FOR 03 YEARS.

1. PREAMBLE:

The **AMC service** placed through tender shall be governed by following set of Terms and Conditions:

1. General terms and conditions for Goods and Services;
2. Service Specific STC of AMC Services – as defined in Service Catalogue which includes SLA for the Service for a product.
3. The above set of conditions along with Scope of service including price as enumerated in the Contract Document shall be construed to be part of the contract.

2. AGREEMENT OVERVIEW:

This Agreement represents a Special Terms and Condition and also includes the specific Service Level Agreement (“SLA”) between the Buyer and the Annual Comprehensive Maintenance Service Provider Agency. This Agreement outlines the Scope of Work, Stakeholder’s Obligation and General Terms and Conditions of Services covered as they are mutually understood by the stakeholders.

3. OBJECTIVE AND GOALS:

The objective of this agreement is to ensure that the proper elements and commitments are in place to provide consistent delivery of installation and maintenance service to buyer by service provider. The goals of this Agreement are to:

- a- Provide clear reference to service ownership, accountability, roles and/or responsibilities.
- b- Present a clear, concise and measurable description of service provision to the customer.
- c- Depict Terms and Conditions of the service for all the involved stakeholders. To ensure that all stakeholders understand the consequences in case of termination of services due to any of the stated reasons, violations of service level agreement. to comply the same. The agreement will act as a reference document that both the parties have understood the mentioned terms and conditions and have agreed

4. STAKEHOLDERS

Following are the stakeholders associated with this agreement:

- Buyer / Consignee.
- Service Provider or Annual Maintenance Contract Service Provider.

The responsibilities and obligations of the stakeholders have been outlined in this document. The document also encompasses payment terms and penalties in case of non-adherence to the defined terms and conditions. It is assumed that all stakeholders would have read and understood the same.

5. SCOPE

The scope of the comprehensive annual maintenance (CAMC) service covers the trouble free and smooth working of the CCTV system, including CCTV Cameras and related other assets covered under the contract as per package, all the time during the currency of the contract. Detailed scope of work is attached as Scope of CAMC Work.

6. ITEMS QUANTITY AND LOCATION OFFERED UNDER SERVICES:

The purpose of these CCTV System is to have overall surveillance of the assets available/ owned by the buyer organization. These CCTV systems generally comprise of various types of cameras (i.e Fixed indoor camera/ dome cameras, PTZ Camera, Bullet camera, wall mount cameras etc), Video recorders (NAS/Server etc), Storage System, display Monitors (LED/LCD etc) and LAN/ connecting networks (like cables, I/O Ports, Switches, Routers etc.) and similar other assets covered under the scope of the contract. Detail scope of items with quantity and location are given in **Scope of CAMC Work**.

7. BUYER OBLIGATIONS:

1. Buyer should provide the details regarding the equipment/assets/network / cabling/ mountings etc to be covered under the AMC contract and specific local environmental/ demographical/ socio economic conditions requiring any specific precaution to be able to provide satisfactory AMC service. Details regarding (description, make, model, location (Indoor/Outdoor) and quantity etc) of various assets, to be covered under the AMC, such as Bullet Cameres/ PTZ Camera/fixed camera, NVR, Hard disk, DVR, DISPLAY TV, Network switch with /without PoE, UPS, Battery, monitor, PCs etc,) shall be uploaded at the time of bidding for information to the prospective service provider.
2. Buyer shall nominate a Nodal officer from its organization to coordinate with Service Provider to facilitate proper co-ordination.
3. Buyer Department shall ensure that the Service Provider or its authorized personnel gets the required access to location/areas/rooms for providing the services as per contract.
4. Buyer should also indicate details of any previous break downs and repairs made on the equipment at start of the CAMC services to the successful service provider.
5. Buyer should provide electrical connection at control room and different locations of

8. SERVICE PROVIDER OBLIGATIONS

1. The work herein specified shall be performed by competent workmen in a thorough professional manner. All materials furnished by the contractor shall conform to original equipment manufacturer's standards and guidelines.
2. Least inconvenience to staff working in the offices must be ensured while carrying out the work. The preventive maintenance is to be carried out independently during the lean period without affecting the BMC operations.
3. Contractor will remove all the debris caused due to the work and clear the site.
4. All required repairs, patchwork, etc. to restore any damages caused to BMC property during the execution of work shall be carried out by the contractor.
5. Provision of necessary Test equipment, tools, cleaning material, etc. at site shall be the responsibility of the contractor.
6. The contractor is fully responsible for safety precautions, and any accident that may take place to his labour during the execution of the work and all expenses for his medical treatment is to be borne by the contractor.
7. The contractor shall take care of labour regulations and is required to follow all the guidelines prescribed by concerned authorities i.e. Regional Labour Commissioner/ Central Advisory Contract Labour Board, etc.
8. On completion of the contract period (expiry of contract/termination of contract), the CCTV System at each site shall be handed over to BMC in fully serviceable condition. It shall be liability of the contractor to repair the system & its accessories for any defects, observed during handing over and make them fully serviceable. The rectification/ repairing of these systems or their accessories shall be carried out by the contractor within 30 days of receipt of such notice from the officer-in- Charge, the officer-in-Charge reserves the right to get the repair work executed at the risk and cost of contractor.

9. The Contractor shall not be entitled for any extra payment whatsoever on account of the conditions of Comprehensive Annual Maintenance Contract.
10. Bidder/ Contractors shall not out source any part of the contract to any other vendor/ third party contractor.
11. At the time of commencement of CAMC all CCTV/ systems installed will be working condition given to contractor and there is an inventory made by contractor for whole items given for CAMC.
12. Contactor have no objection for Addition/Modification in CCTV system as per BMC requirement.
13. Service provider should maintain register indicating details of equipment/Equipment being maintained and details of location/rooms/place where they are installed. In case any equipment shifted during tenure of the contract with in same location the change details are also to be kept on record/registers Such shifting within the same location shall be done under supervision of the CAMC service provider and buyer department should ensure that information is given to service provider and they are also associated.
14. Service Provider should depute trained and technically competent service engineer / engineers as and when required at users' premises to ensure proper upkeep of equipment and quick resolution of fault during the CAMC period.
15. Service Provider should ensure availability of suitable instruments / tools / software/ hardware for their service engineer to examine and repair the equipment. Any cleaning solution or chemical required also to be made available to service engineer.
16. The preventive maintenance service (PMS) should be carried out on quarterly basis and cover the details given below:
 -
 - Cleaning the UPS externally with a soft cloth.
 - Check the UPS battery Terminals for leakage and clean if necessary.
 - External cleaning of all cameras with a soft muslin cloth & Colin.
 - Cleaning of all LAN switches installed in the field with a blower.
 - Check for virus on Workstations installed at CCTV control room. Positions with Antivirus software and update virus definitions, if necessary remove the detected viruses in all consoles using suitable anti-virus software
 - Dressing of loose cables, if required, in the CCTV control room and any camera points.
 - Check functioning of all CCTV cameras, Server, networking equipment like LAN switches etc. and take corrective action, if necessary.
 - Check UPS voltage (Both input and output) and verify if within permissible limits.
 - Check serviceability status of Client work stations installed at Buyer Premises/ Server room
 - Check for video clarity of all cameras and take necessary corrective action if the video is not proper/hazy.
 - Check the recording quality of all cameras and the back-up period of recordings.
 - Any other activities as specified by the buyer at the time of bidding/contract.

(Note: Above preventive maintenance Services (PMS) shall be carry out on specified periodicity as specified in contract/ bid document).

17. Periodic preventive maintenance service (PMS) report shall be submitted by the service provider to the buyer organization nodal officer.
18. Service provider shall maintain the confidentiality of any information related to the equipment under AMC. Service provider will be required to take appropriate actions in respect of personnel engaged to ensure the obligations of non-use and non-disclosure of confidential information.
19. Service provider shall ensure strict compliance of scope of services as per package offered by them and specified in the order.
20. Replacement of CCTV camera, NVR, hard disks, Cables and other parts covered under the contract shall be under responsibility of service provider as specified in relevant package. The replacements are to be affected as per requirements specified in OEM Manual.
21. It shall be the responsibility of the service provider to ensure that as soon as a break down occurs immediately service engineers are deputed for carrying out the repairs and make the equipment/ systems covered under contract, in working conditions.

9. SPECIAL TERMS AND CONDITIONS

1. Service provider shall have experience in installation, repair and maintenance services of similar CCTV systems.
2. On award of contract the user Departments may provide details of Equipment Quantity, Location, Electric Connection, Invoice Date/ vintage, Brief Problems of systems (if any), to enable the service provider to prepare the maintenance works.
3. Service Provider, as per need and requirement of the contract fulfilment, shall ensure appropriate deployment of the manpower.
4. Service provider to give guarantee for the replaced/repair part as per OEM warranty or at least 6 months if not covered in OEM warranty. Service provider is to ensure that only original part of same model/brand is used for replacement. In case of replacement of parts are not covered as per the package applicable service provider shall ensure that rate charged are not more than OEM rates
5. The new parts when to be fitted is to be verified before installation/fitting to equipment. The removed part is to be handed over to user department. In case service provider notice any part is missing same to be brought to notice of buyer department or otherwise responsibility shall be of service provider Service provider shall ensure that only original parts of same make/brand are used for replacement.
6. Escalation matrix and name of persons coordinating AMC jobs to be submitted to buyer after AMC is awarded, before the commencement of contract.
7. Service provider shall make sure that CCTV system covered under AMC is in working conditions. The service provider shall provide service support as and when required during the AMC period without any extra cost.
8. Service provider shall make sure that CCTV system covered under AMC is in working conditions. The service provider shall provide service support as and when required during the AMC period without any extra cost.
9. Immediately on award of the service contract, the service provider would give a report regarding taking over of the CCTV system. It shall be the responsibility of the service provider to make the CCTV camera system work satisfactorily throughout the contract period, also to hand over the equipment to the department in working condition on expiry of the contract.
10. All the consumable articles / parts such as material required for cleaning repairs and maintenance will be provided by the service provider at no extra charge to the buyer. The spares and accessories shall be of standard quality. The spares and accessories shall be compatible with CCTV camera system and according to specification provided by the manufacturer and with best quality.

10. BREACH OF CONTRACT AND TERMINATION:

11. The Agreement shall be come to an end either on completion of the Contract Period or shall be terminated for the following reasons by either party:
12. Mutual consent: The contract may be terminated based on mutual consent in case the services are no longer required by the Buyer by providing reasonable notice period as per the term of the contract or minimum of 30 days. Termination based on mutual consent will not attract any penalties or shall not be liable for any extra payments other than payment of invoices raised till the time of termination including notice period.
13. Breach of contractual obligations: Any incidents considered as the breach of contract will result in immediate termination of services. The Buyer shall have the right to terminate the Contract effective immediately by giving written notice to the Service Provider if, the Service Provider breaches a material provision of this Contract where that breach is not capable of remedy; or if the Service Provider breaches any provision of this Contract and fails to remedy the breach within 14 days after receiving notice requiring it to do so. The Service Provider shall have the right to terminate the contract without any liability to the Buyer if the Buyer fails to make payments to the Service Provider for two consecutive payments as per the payment scheduled agreed in the Contract.
14. Breach of SLAs: The Service Provider shall be responsible for faithful compliance of the terms and conditions of this agreement. In case of non-compliance of Service obligations, penalty per default will be imposed as per SLA. Non-delivery of service in time, not starting work in time, violation of existing laws and statutory requirements, committing fraud etc will be considered as a major default and the contract will be cancelled immediately without giving any further notice.
15. Penalty to be imposed if the resolution /maintenance involving part replacement is delayed above 48 Hrs.
16. If the service providers are not able to complete or turn up for the calls, then users can avail the services from any other local service provider / local technician and the amount so spent can be deducted from the bill of Service Provider / from his due amount.
17. Penalty will be imposed in case of failure to meet the Specified Uptime
18. The cumulative penalty cannot exceed 10% of the contract value for that period. The contract may be terminated by the Buyer once this limit is breached without any prejudice to other contractual remedy.

PENALTY CLAUSE

Sl.No	Component	Security Level	Requirement	Falls by/ Increase by	Penalty (INR)	Calculation (Currency in INR)
1	Fixed CCTV/ CCTV PTZ	Moderate	99.5%	0.50%	1000	For every decrease of 0.50% in availability of each device & its associated component in a quarter, a penalty of 10000 shall be imposed
3	NVR	High	99.5%	0.50%	15000	For every decrease of 0.50% in availability of each device & its associated component in a quarter, a penalty of 15000 shall be imposed

4	Delay in carrying out Preventive maintenance and repair work as per schedule	High	99.5%	0.50%		0.5 % of quarterly billed amount for every day Delay.
Penalty as per clause 1 to 3 above shall be in addition to the pro-rata payment deduction of AMC amount per day i.e. no payment of AMC amount shall be made for the period in which entire CCTV system is unserviceable or for the quarter in which the quarterly preventive maintenance for the CCTV is not carried out as per schedule						
The total penalty within the scope of the contract shall not exceed 5% of the total contract value.						
The contractor is required to carry out the preventive maintenance at least once in 3 months (quarterly)						
In case of any damage, cost of the same and its associated accessories will be recovered from vendor as decided by the buyer organization/authority.						

OEM Eligibility Criteria's

1	The OEM must have its own in-house, government-registered R&D facility in India, and should not outsource any development, design or research activities, submit the undertaking on OEM Letterhead. Also, R&D registration certificate issued by a government body must be attached as proof. R&D should be ISO 9001, 27001 and 20000 Certified.
2	The MAC addresses of Cameras and Server must be genuine, registered in the name of the OEM manufacturing the Cameras, and should originate from India.
3	OEM company for Camera & Server should have its own company registered in India since last 10 year. Any representation through a Dealer/ Distributor/ Joint Venture/ Subsidiary/ consortium shall not be treated as OEM. This has to be supported by necessary statutory documents. OEM should be a registered business entity in India with their own office in India. Submit Certificate of Incorporation under the provisions of companies Act, 1956.
4	The CCTV OEM should have Manufacturing unit registered in India in their Own name, 3rd Party Manufacturing or Joint Venture Manufacturing is not Allowed.
5	The CCTV OEM should have below ISO Certifications for Quality, Environment, Security management and Health & Safety Management system for manufacturing of all types of Cameras & NVR. All the CCTV Components (Camera, NVR, etc.) should be from same OEM for seamless integration and ease of operation. The Bidders shall attach the copy of the OEM's ISO Certificate along with the bid ISO 9001:2015, ISO 27032:2023, ISO 14001:2015, ISO 27001:2013, ISO 20000:2018 and ISO 45001:2018, CMMI Level 3 or above certification
6	The Intellectual Property Rights on design of the product of all manufactured final product and source code of all software including firmware should not reside in countries sharing land borders with India, until unless specifically allowed by the Government of India and is registered with the Competent Authority of Government of India. Proof of IPR & source code residing in which country and requisite permission & registration with Competent Authority of Govt. of India, as applicable to comply with the above, shall be provided by the OEMs.
7	CCTV cameras must comply with the MEITY guidelines "Public Procurement (Preference to Make in India) Order 2017-Notifying CCTV/Video Surveillance dated 6th March 2024, Essential Requirements (ERs) for security, to ensure the security of CCTV systems. The OEM must submit a security testing report issued by an STQC lab.
8	Cameras OEM should have valid EPR from Central Pollution Control Board for Electronic Waste. Certificate should be attached
9	OEM should not be blacklisted by any Central/State Govt. Organization, PSU, Public Listed Company or Indian Army
10	With reference to Order (Public Procurement No. 1) issued vide No. F.No.6/18/2019-PPD dated 23rd July, 2020, OEM and Bidder should not be from such a country that shares Land Border with us. OEM and Bidder should submit the declaration against this clause.
11	The CCTV products should qualify under CLASS- I LOCAL SUPPLIER as per Preferential Market Access (PMA) and Public Procurement Policy (PPP) Make In India (MII) scheme of the Govt. of India dated. 04.06.2020 with 50% or latest applicable local content as per the Govt. norms.
12	OEM to confirm that the CCTV Cameras are not installed with standards like -GB28181, GB/T28181-2011, GB/T 28181-2011, GBT 28181- 2011, GBT28181- 2011,GB/T28181-2016, etc., protocols/standards which allow certain organizations to bypass all security parameters and look into the devices directly.
13	Valid Tender/ Bid Specific OEM Authorization with name, Phone No. and email of OEM in original ink signed MAF in OEM Letterhead for all products of CCTV Camera, VMS, Temperature Control Outdoor JB, Recoding Server, Failover Server, HDD, Field Switches, SPD, UPS, Active & Passive Network components
14	Service Centre in Odisha (proof of Address may be submitted) or Undertaking for establishment of Service Centre within one month of award of the contract.(CCTV & Active Items)
15	The Server OEM should be CLASS- I LOCAL SUPPLIER as per Preferential Market Access (PMA) and Public Procurement Policy (PPP) Make In India (MII) scheme of the Govt. of India and BIS, CE, FCC certificate
16	The Offered Video Management Software (VMS) OEM have Valid Application Audit Certificate from STQC, to Mitigate Cyber Security Attacks and OEM should have Minimum CMMI Level 3 certified.

APPENDIX - VI: DETAILED TECHNICAL SPECIFICATIONS

I. Specifications of 8MP Bullet Camera

Sl.No.	Parameters	Specifications	Compliance Yes /No
1	Image Sensor	8MP Bullet camera 1/1.8" Progressive Scan, CMOS Sensor or Better	
2	Supported resolutions	3840 × 2160, 3200 x 1800, 2592 x 1944, 2592 x 1520, 2048 x 1536, 1920 x 1080, 720p, D1, 2CIF, VGA, CIF	
3	Video Compression	H.264, H.265, MJPEG or Higher	
4	Video Standard	PAL/NTSC	
5	Number of Streaming profiles support	Profile 1: H.265, H.264 with Max Res 4k@30Fps Profile 2: H.265, H.264 with Max Res D1@30Fps Profile 3: H.264, H.265 with Max Res D1@10Fps Profile 4: H.264, H.265, MJPEG with Max Res 2MP@15Fps	
6	Bitrate	128kbps-16Mbps or Better	
7	Adaptive streaming	Should Support	
8	Unicasting / Multicasting	Support of Unicasting and Multicasting shall be provided	
9	Shutter speed	1/15s-1/8000s or Better	
10	Minimum Illumination	Colour - 0.01 Lux @(F1.2 AGC ON) Black & white - 0 Lux or Better	
11	Signal to Noise Ratio (SNR)	70dB or better	
12	Lens focal length	5 to 10 mm motorized, or better	
13	Built In IR irradiance up-to	Min 50_mtrs or better	
14	Day / Night Camera Switching	Should Support	
15	Network Failure recording	In case of Network failure, the Camera shall start recording on NAS or SD Card, which can be retrieved back when the network connectivity restores (ANR)	
16	Edge Storage	512 GB SD Card Supported or better	
17	Network Connectivity	10Base-T/100BaseTX Ethernet (RJ-45)	
18	Supported Network Protocols	TCP/IP, UDP, HTTP, HTTPS, DHCP, DNS, DynDNS, DDNS, RTP, RTCP, RTSP, PPPOE, SMTP, NTP, SNMP, FTP, TLS/SSL, SFTP, ICMP, IGMPv2 & v3, ARP, 802.1x, IPv4, IPv6, QoS Layer 3, DSCP, CIFS, SSH, UPnP, Bonjour	
19	Data Encryption	All data, including sensitive data, is encrypted with AES and RSA	
20	IP Address Filtering	Should Support	
21	HTTPs Streaming	Should Support	
22	Edge Data Encryption	Should Support	
23	Network Authentication	802.1x Network authentication	
24	Video Content Analytics (VCA)	Detection: Motion Detection, View Tamper Detection, Trip/No Trip Detection, Object	

		Intrusion/ Zone Intrusion, Loitering, IP Conflict, Network Disconnect, Storage Full, Alarm In Alert: IP conflict, Network disconnect, storage full, time triggered, Manual Trigger.	
25	Back light Compensation (BLC)	Should Support	
26	Wide Dynamic Range	120 dB or Better	
27	Image Enhancement	Saturation, Contrast, Sharpness, Brightness, Auto Exposure, Gamma, White balance, Intelligent Defog	
28	Noise Reduction	2 DNR, 3 DNR or better	
29	Power	POE (802.3af/at), 12 V 2A or Better	
30	Operating Temperature	~30°C- +60°C or better	
31	Operating Humidity	95% or less	
32	Ingress Protection	IP67	
33	Impact protection	IK10	
34	Housing	OEM must provide high performance electrical enclosure certificate with Test Report, that provides protection against Water Damage & Deterioration & Oxidation.	
35	MAC Address	The MAC address of the camera shall be registered in the name of the OEM, and it must be registered in India.	
36	MTBF (Mean Time Between Failures)	>100,000 Hours or better	
37	ONVIF Compliance	S,G & T, The IP Camera make and model shall appear on the ONVIF Conformant products List	
38	Regulatory Approvals/ Certifications To be attach	FCC, BIS, CE , RoHs, NDAA, STQC- ER Certified as per MEITY guidelines	
39	MII	CLASS- 1 LOCAL SUPPLIER as per Preferential Market Access (PMA) and Public Procurement Policy (PPP) Make In India (MII) scheme of the Govt. of India	

II. Specifications of 5MP Bullet Camera

Sr.No.	Parameters	Specifications	Compliance Yes /No
1	Image Sensor	5 MP Bullet camera 1/2.8" Progressive Scan, CMOS Sensor or Better	
2	Supported resolutions	2592 X 1944, 2592 X 1520, 2048 X 1536, 1920 X 1080, 720p, D1, 2CIF, CIF, VGA	
3	Video Compression	H.265/ H.265+ , H.264 / H.264+	
4	Video Standard	PAL/NTSC	
5	Number of Streaming profiles support	4 Stream Support with min 3 Stream @ 30FPS or Better	
6	Bitrate	128kbps-16Mbps or Better	
7	Adaptive streaming	Should Support	

8	Unicasting/ Multicasting	Support of Unicasting and Multicasting shall be provided	
9	Shutter speed	1/25s-1/50000s or Better	
10	Minimum Illumination	Colour - 0.01 Lux @(F1.2 AGC ON) Black & white - 0 Lux or Better	
11	Signal to Noise Ratio (SNR)	55-70dB or better	
12	Lens focal length	2.5-3 MM to 10-13.5mm motorized, HFOV- 105-35°, VFOV- 70-25° minimum	
13	Built In IR irradiance upto	Min 50-60mtrs	
14	Day/Night Camera Switching	Should Support	
15	Network Failure recording	In case of Network failure, the Camera shall start recording on SD Card, which can be retrieved back when the network connectivity restores (ANR)	
16	Edge Storage	512 GB Edge storage or better	
17	Network Connectivity	10Base-T/100BaseTX Ethernet (RJ-45)	
18	Supported Network Protocols	TCP/IP, UDP, HTTP, HTTPS, DHCP, DNS, DynDNS, DDNS, RTP, RTCP, RTSP, PPPOE, SMTP, NTP, SNMP, FTP, TLS/SSL, SFTP, ICMP, IGMPv2 & v3, ARP, 802.1x, IPv4, IPv6, QoS Layer 3, DSCP, CIFS, SSH, UPnP, Bonjour	
19	Data Encryption	All data, including sensitive data, is encrypted with AES and RSA	
20	Network & Data Security	IP Address Filtering, HTTPs Streaming, Edge Data Encryption, Network Authentication	
21	Video Content Analytics (VCA)	Motion Detection, Tamper Detection, Trip Detection, Object Intrusion, Loitering, IP Conflict, Network Disconnect, Storage Full, Alarm In	
22	Back light Compensation (BLC)	Should Support	
23	Wide Dynamic Range	120 dB or Better	
24	Noise Reduction	2 DNR, 3 DNR	
25	Operating Temperature	~30°C- +60°C or better	
26	Operating Humidity	95% or less	
27	Ingress Protection	IP67 , IK10	
28	Housing	OEM must provide high performance electrical enclosure certificate with Test Report, that provides protection against Water Damage, Deterioration & Oxidation.	
29	MAC Address	The MAC address of the camera shall be registered in the name of the OEM, and it must be registered in India.	

30	MTBF (Mean Time Between Failures)	>100,000 Hours	
31	ONVIF Compliance	S,G & T, The IP Camera make and model shall appear on the ONVIF Conformant products List	
32	Regulatory Approvals/ Certifications To be attach	FCC, BIS, CE , RoHs, NDAA, STQC Certified as per MEITY guidelines, Corrosion-Resistant	
33	MII	CLASS- I LOCAL SUPPLIER as per Preferential Market Access (PMA) and Public Procurement Policy (PPP) Make In India (MII) scheme of the Govt. of India	

III. Specifications of 5MP PTZ Camera

Sl. No.	Parameters	Specifications	Compliance Yes /No
1	Resolution	5 MP (2592 x 1942) or better	
2	Sensor Type and Size	1/2.8" - CMOS 5MP Progressive Scan, Back Illuminated Image sensor	
3	Minimum Illumination	Color: 0.5Lux B/W: 0.05Lux	
4	Focal Length	4-6mm - 165-170 mm	
5	Focus Range	3m to infinity	
6	Field of View (FOV)	HFOV – 43° (w) - 2° (t), VFOV – 53° (w) - 2° (t) DFOV – 33°(w)- 2° (t)	
7	Focus	Motorized Varifocal	
8	Aperture (F#)	F 1.6 - F 4.9	
9	IR Range	250 mtr or better	
10	IR Switching	Auto/ Manual	
11	Pan Range	360°	
12	Pan Speed	1°/s to 240°/sec	
13	Tilt Range	-15° to 90° (auto-flip)	
14	Tilt Speed	1°/s to 200°/s	
15	Presets	500	
16	Patrol	8 patrols, up to 32 presets for each patrol	
17	Pattern	4 pattern scans, record time over 10 minutes for each scan	
18	Power Off Memory	Yes	
19	Audio IN & Audio Out	.1/1	
20	Audio Streaming	Two way Audio	
21	Audio Compression	G.726 ,G.711 a-law and u-law	
22	Alarm In & Alarm Out	.2/2	
23	SD Card	Up to 512GB or better	
24	No of Stream Profiles	4	
25	Stream Profiles	4 Stream Support with min 3 Stream @ 30FPS	
26	Available Resolutions	2592 x 1944p/ 2592 x 1520/ 2048 x 1536/ 1920 x 1080/ 720P/ D1/ 2CIF/ VGA/ CIF/ QCIF	
27	Bitrate	128kbps-16Mbps	
28	Bitrate Type	CBR, VBR	

29	Video Compression	H.265/ H.265+ , H.264 / H.264+	
30	Frame Rate	1-30fps	
31	Shutter Speed	1/25s -1/50000s	
32	Optical Zoom	35-40x	
33	Digital Zoom	16x	
34	Adaptive Streaming	Yes	
35	ONVIF Profiles	S, G, T	
36	Alarm Recording	Pre and Post	
37	Motion Recording	Yes	
38	Time Triggered	Yes	
39	Video Parameters	Snapshot, BLC,HLC, AWB, AGC, Day/Night Settings, Dynamic FPS	
40	Privacy Masks	8	
41	WDR	True WDR (120dB)	
42	SNR	55-70dB or better	
43	DNR	2D &3D	
44	Video Analytics	Motion Detection, View Tamper Detection, Trip Detection, Object Intrusion, Loitering, Missing/Object Counting, Abounded Object, Audio Exception, Alarm In.	
45	Notifications	E-mail, SMS, TCP	
46	Supported protocols	TCP/IP, UDP, HTTP, HTTPS, DHCP, DNS, DynDNS, DDNS, RTP, RTCP, RTSP, PPPOE, SMTP, NTP, SNMP, FTP, TLS/SSL, SFTP, ICMP, IGMPv2 & v3, ARP, 802.1x, IPv4, IPv6, QoS Layer 3, DSCP, CIFS, SSH, UPnP, Bonjour	
47	Network & Data Security	IP Address Filtering, HTTPs Streaming, Edge Data Encryption, Network Authentication, Secure boot Signed firmware, Anti-roll back firmware	
48	Operating Humidity	Less than 90%	
49	Operating Temperature	-30°C to 60°C	
	Housing	OEM must provide high performance electrical enclosure certificate with Test Report, that provides protection against Water Damage, Deterioration & Oxidation.	
50	Communication interface	1x 10Base-T/100BaseTX Ethernet (RJ-45)	
51	Certifications	BIS, CE, FCC, ONVIF S, G,T, IP67, IK10, NDAA, STQC Certified as per MEITY guidelines	
52	MII	CLASS- 1 LOCAL SUPPLIER as per Preferential Market Access (PMA) and Public Procurement Policy (PPP) Make In India (MII) scheme of the Govt. of India	

IV. Enterprise Grade Management & Failover Server

Sr No	Parameter	Details	Compliance Yes/No
1	Processor	Intel Xeon Processor E-2356G - 6Core @ 3.2 GHz	
2	Memory	32 GB DDR4. Or better	
3	OS Drive	Enterprise-grade M.2 SSD 240GB. Or better	
4	SATA Port	8 SATA 3.0 HDD (3.5" / 2.5"), SSD or	
5	Storage Capacity	Up to 140 TB or Better	
6	PCIe Type	2 PCIe3.0 x8, 1 PCIe4.0 x8, 1 PCIe4.0 x16	
7	Video Display	1x HDMI1.4 on board	
8	Graphics Card	Aspeed AST2600 with 64MB VRAM or better	
9	RAID Controller (inbuilt)	Broadcom up to 12G SAS per port 1GB (Hardware RAID)	
10	RAID Support	Hardware RAID supporting RAID 0/1/5/6/10/50/60.	
11	Network Ports	2x 10GbE RJ45	
12	USB	4x USB3.2, 2x USB3.0 or better	
13	Input Voltage	100/240 VAC, 10-5A at 50/60 Hz - Dual Input	
14	Power Supply	1+1 800W Hot swap RPS	
15	Operating Temperature	10°C ~ 35°C; Max Ambient Temp: 50°C; Relative Humidity: 20% ~ 90% (Non-condensing).	
16	Certifications	BIS, CE, FCC	
17	MII	CLASS- 1 LOCAL SUPPLIER as per Preferential Market Access (PMA) and Public Procurement Policy (PPP) Make In India (MII) scheme of the Govt. of India	

V. Enterprise Grade Recording Server

Sr No	Parameter	Details	Compliance Yes/No
1	Processor	Intel Xeon CPU Silver 4314.	
2	Memory	64GB DDR4. or better	
3	OS Drive	Enterprise-grade M.2 SSD 240GB.	
4	SATA Port	16 SATA HDD/ SSD 3.5" /2.5"	
5	Storage Capacity	Up to 280 TB or better	
6	PCIe Type	4 PCIe4.0 x16, 3 PCIe4.0 x8	
7	Video Display	1 VGA, 1x DP, 1x HDMI2.0b, 1x DVI	
8	Graphics Card	GPU GTX1650 with DP, HDMI, and DVI support.	
9	RAID Controller	Broadcom upto 12G SAS per Port 1GB	
10	RAID Support	Hardware RAID supporting RAID 0/1/5/6/10/50/60.	
11	Network Ports	2x 10GbE Ports and 2x 1GbE Ports.	
12	USB	4x USB3.2, 2x USB2.0	
13	Input Voltage	100-240VAC, 10-8A (Dual Input).	
14	Power Supply	1+1 875W Hot Swap Redundant.	
15	Operating Temperature	10°C ~ 35°C; Max Ambient Temp: 50°C; Relative Humidity: 20% ~ 90% (Non-condensing).	
16	Certifications	BIS, CE, FCC	

17	MII	CLASS- 1 LOCAL SUPPLIER as per Preferential Market Access (PMA) and Public Procurement Policy (PPP) Make In India (MII) scheme of the Govt. of India	
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VI. VIDEO MANAGEMENT SOFTWARE

Sl. No	Technical Specifications	Compliance (Y/N)
	Architecture	
1	The system must be an open platform, ONVIF Supported cameras can be add of 3rd party OEM's.	
2	It should have a fully distributed architecture.	
4	The system should not have a single point of failure; it should continue to function even if all other servers go offline and only a single server is active.	
6	The system should use advanced algorithms to utilize multiple resolution streams supported by the cameras for automated system optimization and minimum resource utilization.	
7	It should be optimized for multi-core processors.	
8	The system should have a scalable and expandable architecture, allowing cameras, servers, and clients to be added without affecting the existing functional system.	
9	It should support fully backward-compatible software upgrades.	
10	VMS OEM should have ISO latest certificates: ISO 9001:2015, ISO- 27001, ISO 14001:2015, ISO/IEC 20000-1:2018, ISO/IEC 27001:2022, ISO 45001:2018	
11	VMS OEM should have Minimum CMMI Level 3 certified.	
12	The Proposed VMS should be Minimum ONVIF S, G compliant and should listed on onvif website www.onvif.org	
13	The Offered Video Management Software (VMS) have Valid Application Audit Certificate from STQC, to Mitigate Cyber Security Attacks.	
	Simultaneous Functioning	
1	The system must provide recording capabilities.	
2	It should be able to handle alarms.	
3	The system should handle client software requests.	
4	It should provide live view functionality.	
5	The system should allow for camera control.	
6	It should include a map view feature.	
7	The system should support video analytics.	
8	It should provide playback functionality.	
9	The system should allow for configuration.	
10	It should include report generation capabilities.	
11	It should support redundant recording.	
	Video Input	
1	It should be capable of capturing video from a wide range of IP video sources, including video cameras, video encoders, and video servers.	
2	It must support video sources compliant with ONVIF specifications.	
3	It should support video formats including H.265, H.264, MJPEG.	
4	The system should be able to handle mega-pixel cameras (up to 10 megapixels), IR Cameras, fixed cameras, PTZ cameras.	

5	It should have built-in video capture algorithms to minimize bandwidth usage.	
6	The system should allow independent settings for FPS, resolution, and bit rate for display stream, recording stream, and video analytic stream.	
7	It should allow adding linked cameras from a single video source with a single button click.	
8	The system should provide recommended settings guidance for each type of video source when adding cameras.	
9	It should capture and record audio streams.	
10	The system should allow user-configurable 'Channel name' for every camera.	
11	The system should automatically restore video connection.	
12	It should have a flexible architecture to quickly integrate any new cameras.	
Multi-stream Cameras		
1	The system must include advanced algorithms for optimized handling of multiple streams from cameras.	
2	It should offer flexible stream selection options to assist in designing the solution exactly as per the project requirements.	
3	It should allow for the selection of the recording stream for every camera.	
4	The system should allow for the selection of the stream for motion detection and video analytics processing for every camera.	
5	It should allow for the selection of the stream for live video display on mobile clients	
Video Sequences		
1	The system must support the definition of a video sequence, which includes a list of cameras and dwell time for each camera.	
2	During the display of a video sequence, the list of cameras should be iterated cyclically, with each camera being displayed for the specified dwell time.	
3	Local video sequences should be definable in the client software.	
External Devices		
1	It should support TCP/IP communication.	
2	The system should allow for the association of primary and secondary videos with external devices.	
3	It should provide video evidence for alerts and logs generated by external devices.	
4	The system should be able to capture alarms from connected external devices.	
5	It should offer full alarm handling configuration for alarms captured from connected external devices, similar to internal alarms generated from the software	
6	The system should have a flexible architecture to quickly integrate any new external device.	
Audio Devices		
1	The system must have the ability to add independent audio devices.	
2	Audio data captured from audio devices should be recorded independently.	
3	Recorded audio data should be able to be played back and synchronized in time with video devices and audio streams associated with video sources.	
Type of Alarms		
1	The system must support detection and handling of network loss.	
2	It should also support network recovery.	
3	The system must be capable of detecting video loss.	
4	It should support video recovery.	
5	The system should provide alerts for low disk space.	
6	It should support disk space recovery.	
7	The system must provide alerts for recording failure.	
8	It should support restoration of recording.	

9	The system should detect motion and provide alerts accordingly.	
10	It should also provide alerts for no motion.	
11	The system must support camera tampering detection.	
12	It should provide alerts for video analytics alarms.	
13	The system must be able to handle alerts generated by cameras and video servers.	
14	The system must support external digital alarm input.	
15	It should handle alarms from relay devices.	
Alarms Management		
1	The system must allow for user-configurable alarm handling for each type of alarm.	
2	It should support alarm handling rules to configure alarm handling for specific types of alarms generated from each device independently. This provides complete flexibility to configure alarm	
3	handling for each type of alarm and to customize alarm handling for alarms generated by specific devices.	
4	The system should support alarms stacking/queuing.	
5	It should have alarm categories such as Logs, Warnings, and Alerts.	
6	It should have an advanced alarm acknowledgement screen displaying the active alarms queue, with live video and alarm videos associated with each alarm in the queue. It should provide quick access to multi-channel playback and video export associated with search results.	
7	The system should have a dedicated recent alarms screen, with support for alarm video view with navigation controls. It should also provide quick access to multi-channel playback and video export associated with search results.	
8	The system should offer a wide range of alarm handling options configurable for each type of alarm from individual sources.	
9	It should have a video overlay indicator for alarms.	
10	The system should provide a pop-up alarm acknowledge window.	
11	It should support manual alarm acknowledgement.	
12	The system must support time threshold-based automatic alarm acknowledgement.	
13	An alarm should be acknowledged from any computer displaying the alarm acknowledgement for that alarm, and the acknowledged alarm should be removed from the active alarms list of all computers.	
14	The system should be able to play sound/audio for alarms.	
15	It should provide indicators on the map, such as blinking icons or alarm indication on videos embedded in the map.	
16	The system should be able to start multi-channel recording for alarms.	
17	It should have the ability to move one or more PTZ cameras to pre-defined presets for alarms.	
18	The system should be able to start pre-defined Preset for one or more PTZ cameras for alarms.	
19	It should be able to send a digital output signal for alarms.	
20	The system should provide a pop-up live video screen for alarms.	
21	The system should provide audio notification for each time of alarm.	
22	It should be able to send an email through a standard SMTP server or Microsoft Exchange Server for alarms.	
23	The system should be able to save an image for alarms.	
24	It should be able to execute user-defined macros for alarms.	
25	The system should be able to send to FTP for alarms.	
26	It should be able to send SMS through a 'Phone network gateway' application for alarms.	

27	The system should be able to generate test alarms for quick tests of alarm handling configurations.	
Recording		
1	The system must allow for user-configurable video resolution, frame-rate, and bit-rate settings for each channel independent of other channels.	
2	It should have the ability to configure recording settings for a video channel group with a single button click.	
3	The system should support multiple recording modes, including continuous, scheduled, alarm-based, and combined 'scheduled and alarm based'.	
4	Scheduled recording should include weekly schedule configuration with the ability to select or de-select any hour within a week for recording.	
5	Scheduled recording should also include day-specific overrides for up to 5 dates, with the original weekly schedule remaining unchanged to eliminate the risk of accidental changes and maintenance activities.	
6	The system should support operator-activated recording.	
7	It should support audio stream recording.	
8	The system should include video overlay text capabilities.	
9	It should provide indicators for available disk space and expected recording time.	
10	The system should include a recording history timeline.	
11	It should support watermarking on recorded video.	
12	The system should have recorded data tampering detection capabilities.	
13	The system should support network time server synchronization.	
14	It should allow for multiple drives selection for recording, with all selected drives used simultaneously to distribute the load, with each drive processed independently.	
15	The system should intelligently allocate video channels to recording drives to distribute the load and maximize recording duration for all cameras.	
16	There should be a manual override for recording drive selection for any camera.	
17	The system should allow for re-assigning recording drives for all cameras at any stage.	
18	It should support recording on local hard disks, USB storages, Direct-attached Storage (DAS), Network-attached storage (NAS), and Storage Area Networks (SAN).	
19	It should support network shared drives.	
20	The system should support RAID-configured storage devices.	
21	It should include fail-over recording with fully automatic data synchronization.	
22	The system should support redundant recording.	
Video Search		
1	The system must provide a recorded data report for a specified camera.	
2	It should allow for the selection of any camera from a drop-down menu.	
3	The system should include a calendar displaying the recorded data availability state for each day, indicating whether full data is available, no data is available, or partial data is available.	
4	It should include a recording history timeline indicator.	
5	The system should have a 24-hour video history timeline indicating time periods for which recorded data is available.	
6	It should include a video timeline focus indicator with the option to select a focus duration interval and quick access buttons for the next interval and previous interval.	
7	The system should have a video timeline with 1-second intervals indicating recorded video availability for each second.	
8	Video playback should be synchronized with timeline indicators.	

9	There should be an option to use the original aspect ratio for video display.	
10	Users should be able to click on the recording history timeline to view associated video, with video navigation controls such as play, pause, rewind, fast forward, slow rewind, and slow forward.	
11	The timelines should indicate the currently displayed video time.	
12	The system should provide quick access to multi-channel playback and video export.	
13	It should create an automated recording history cache for fast access to recording history information.	
14	There should be an option to manually re-create the recording history cache for a specified camera for a specified duration.	
Playback		
1	The system must support synchronized playback of multiple video channels, up to 64 video channels.	
2	It should support synchronized audio playback with the ability to enable/disable audio playback associated with every video channel being played back.	
3	The system should provide video navigation controls including play, pause, up to 16X fast forward, and up to 16X rewind.	
4	It should support slow-speed playback, both fast forward and rewind, up to 0.25X speed.	
5	The system should support alarm-based playback.	
6	It should include a 'go-to' specified video time feature.	
7	The system should provide frame-by-frame playback controls for previous frame and next frame.	
8	It should include a non-synchronized playback screen where each video can be played for independent video times.	
Video View Screens		
1	The system must have separate live video screens and playback video screens.	
2	It should include a tree view of video channels, sequences, and external devices.	
3	The system should automatically link video channels from the same video source.	
4	It should allow for a single-click operation to switch to any of the linked channels.	
5	The system should support device groups.	
6	It should provide indicators for the state of cameras and devices, such as online/offline status.	
7	Indicators should differentiate between static cameras and PTZ cameras.	
8	The system should indicate the recording status of every channel, including recording on, recording off, and recording error.	
9	It should support drag-and-drop camera selection for viewing.	
10	Double-clicking on a tree control item should allow for viewing the video.	
11	The system should offer camera selection modes - locked and unlocked. In unlocked mode, the first empty video container is selected for displaying the video	
12	It should support virtual matrix operations.	
13	The system should have a patrolling mode.	
14	It should provide several screen layout options, such as 1X1, 2X2, 3X3, etc.	
15	Page navigation within a layout should be possible.	
16	It should support independent layout settings for each video screen.	
17	The system should be able to view up to 64 live videos and up to 64 playback videos in a single video screen.	
18	There should be an option to maintain the aspect ratio of the video stream during display.	
19	The system should have a 'hide user interface' / 'view videos only' mode.	

20	It should support instant replay with user-configurable instant replay time.	
21	The system should include a compact layout button.	
22	Time indication, including current time and video time, should be provided.	
23	The system should have a quick access toolbar for each video window.	
24	The system should use advanced algorithms to use multiple video resolution streams from video sources for minimum resource utilization.	
25	Double-clicking should allow for viewing high-resolution video.	
26	There should be an option to initialize the high-resolution video window with the currently displayed video stream until the high-resolution video stream is available from the server/camera.	
27	The high-resolution video window should have size control options - full screen or user-defined size.	
28	Right-clicking on each video should provide a menu for quick access to various features.	
29	The system should allow for image snapshot from live video and playback video.	
30	It should provide the option to copy the image to the clipboard.	
31	Users should be able to add video bookmarks.	
32	There should be a single-click video export option.	
33	A single-click video export for all videos displayed in the video screen should be available.	
34	The system should have Y-flip video control for every video.	
35	Quick switch to linked channels should be possible.	
36	There should be a single-click 'close all videos' option.	
37	The system should include a camera PTZ control window that can be moved to any desired location on the monitor.	
38	A recording history calendar with access to the video search screen should be provided.	
39	Quick access to video source information, digital operation configuration, and camera PTZ, preset, and tours control should be available.	
40	The system should support multiple monitors.	
41	There should be an option to select hardware acceleration for video display operations.	
Video Screen Layout Profiles		
1	The system must support layout profiles to configure different layouts on a single screen.	
2	Layout profiles should include the layout grid selection and camera selection for every video container.	
3	The system should allow for single-click switching between layout profiles.	
4	There should be no limit on the number of layout profiles that can be defined.	
5	The system should support layout profile sequences to change the layout profile automatically after a 'dwell time'.	
6	The layout profile sequence should support cyclic operation.	
7	The system should allow for pausing the layout profile sequence.	
8	It should provide options to move to the next layout profile in the sequence and move to the previous layout profile in the sequence.	
9	There should be no limit on the number of layout profile sequences that can be defined.	
Camera Control		
1	The system must support camera pan-tilt-zoom (PTZ) control.	
2	It should allow for camera PTZ speed control.	
3	The system should have the ability to move a PTZ camera to the home position.	

4	It should support on-screen camera PTZ control using the mouse.	
5	The system should include a camera PTZ control window that can be moved to any desired location on the monitor.	
6	It should allow for camera PTZ mode selection - manual or automatic, for cameras which support camera PTZ mode selection feature.	
7	The system should include iris control.	
8	It should include focus control.	
9	The system should provide control over image parameters such as color/black and white video, brightness, saturation, contrast, sharpness, and hue.	
10	It should allow for managing presets - add, remove, go-to.	
11	The system should support preset image capture and display for better indication of camera position in that preset.	
12	It should support tours - add, modify, start, stop.	
13	Tour configuration should be possible by specifying presets and dwell time.	
14	There should be no limit on the number of presets that can be added to a tour.	
15	The system should allow for configuring video stream parameters for every video channel independently.	
16	It should allow for configuring video stream parameters for a video channel group, with a single button click.	
17	The system should allow for configuring on-screen display parameters for a video channel group, with a single button click.	
18	It should allow for configuring camera time for a video channel group, with a single button click.	
19	The system should support importing camera names defined inside video sources to VMS for a video channel group, with a single button click.	
20	It should support exporting camera names defined inside VMS to individual video sources for a video channel group, with a single button click.	
Users and Privileges		
1	The system must support multiple user levels and privileges.	
2	It should have built-in standard privileges.	
3	The system should allow for defining custom privileges.	
4	It should allow for enabling or disabling features for every custom privilege.	
5	The system should allow for enabling or disabling device group access for every custom privilege.	
6	It should have built-in standard user roles.	
7	The system should allow for defining custom user roles.	
8	There should be no limit on the number of users that can be added.	
9	The system should allow for associating or changing privileges for any user.	
10	There should be no limit on the number of users that can be associated with a privilege.	
11	The system should allow for disabling a user and deleting a user.	
12	Administrator control should be available to change the password for any user.	
13	The system should allow for user information registration such as name, address, phone number, etc.	
14	It should support Active Directory integration.	
Video Bookmarks		
1	Operators must be able to quickly bookmark video from any camera, for a specific timestamp, along with a comment.	
2	The system should support searching video bookmarks to generate reports.	
3	Video bookmarks should be searchable based on bookmark source, bookmark creator user, bookmark comment (with wildcard search), and time duration.	

4	Video bookmark search should include bookmark video display with video navigation controls for play, pause, fast forward, rewind, slow play, and slow rewind.	
Video Export		
1	Quick export mode: The system must support quick export mode, which starts video export for a selected camera and continues until the user ends the playback. Default video export parameters	
2	should be used for quick export mode.	
3	Advanced export mode: The system should include an advanced export mode with all export parameters available for user configuration.	
4	Video export based on time duration or alarm: The system should allow for exporting video based on either a specified time duration or an alarm trigger.	
5	Export video for multiple cameras simultaneously: The system should support exporting video from multiple cameras simultaneously.	
6	Watermarking: The system should provide the option for watermarking on exported video, including custom text, camera name, timestamp, with an option to set watermark text color.	
7	File naming: The system should allow the user to specify the file name for exported video.	
8	Standard format video export: Exported video should be in a standard format that can be played in any standard media player like Windows Media Player.	
9	Video quality selection: The system should allow the user to select the quality of video exported in standard format, with options for high quality and standard quality. This should also allow for controlling the file size of the exported video file.	
10	Native format video export: The system should support native format video export along with a player application.	
11	Password protection: The system should include an option to add password protection for native video export. The exported native video should only be accessible after providing the correct password.	
Reports and Logs		
1	Current session logs view: The system should provide a view for viewing current session logs.	
2	Current session alarms view: The system should provide a view for viewing current session alarms.	
3	Detailed user logs, activity reports, system logs: The system should provide detailed user logs, activity reports, and system logs.	
4	Search user logs to generate reports: The system should allow searching user logs to generate reports.	
5	User logs search based on user and time duration: The system should allow searching user logs based on user and time duration.	
6	Report details: Reports should include details like activity description, along with the IP address of the computer which initiated the activity.	
7	Alarms search to generate alarm reports: The system should allow searching alarms to generate alarm reports.	
8	Alarm search criteria: Alarms can be searched based on alarm type, alarm source, alarm name (with wildcard search), and time duration.	
9	Alarm search features: Alarm search should include alarm video display with video navigation controls and quick access to multi-channel playback and video export associated with search results.	
10	Export video for all alarms: The system should allow exporting video for all alarms in the search result with a single button click.	
11	Print logs and reports: The system should allow printing logs and reports.	

12	Save logs and reports: Logs and reports should be savable in TXT, CSV, or PDF formats.	
13	PDF format reports: PDF format reports should include associated images embedded inside the PDF file.	
14	Automated daily reports creation and save: The system should support automated daily reports creation and saving.	
15	Automated daily reports e-mailing: The system should support automated daily reports emailing.	
Interactive Maps		
1	Multiple map view screens: The system should support multiple map view screens.	
2	Multi-level maps: The system should support multi-level maps with hyperlinks for quick navigation between levels.	
3	Static image maps: The system should support industry-standard image formats like BMP and JPEG for static image maps.	
4	Multiple image support: The system should support multiple images for maps.	
6	Tree view of cameras and devices: The system should provide a tree view of cameras and devices.	
7	Drag and drop selection: The system should allow for drag and drop selection of cameras, devices, and video sequences.	
8	Camera and device indicators: The system should display indicators for cameras and devices on the map.	
9	Alarm indication: The system should indicate alarms on the map.	
11	High-resolution video view: The system should provide an option for high-resolution video view for any camera.	
12	Predefined video screen: The system should allow sending camera video to a predefined video screen, which can be resized and positioned anywhere.	
13	Field of view configuration: The system should allow configuring the field of view for each camera, including direction, angle, and range.	
User Interface		
1	Multiple monitors and video walls support: The system should support multiple monitors and video walls.	
2	Virtual matrix operations: The system should support virtual matrix operations.	
3	Video thumbnail display: The system should support video thumbnail display to identify the specified camera.	
4	Full-screen view: The system should support full-screen view of any video channel.	
5	Quick setup wizard: The system should have a quick setup wizard for easy initial configuration.	
6	Customizable screen sizes: All screens in the system should be resizable to custom sizes.	
7	'Fit to screen size' support: The system should support a single click 'Fit to screen size' option for all screens.	
8	Simultaneous functioning: All features of the system should be able to function simultaneously.	
9	View options: The system should allow viewing video channels as a list or as thumbnails.	
10	'Reconnect to all cameras' button: The system should have a 'Reconnect to all cameras' button for easy reconnection.	
11	'Save report' option: The system should have a 'Save report' option for all lists displayed in the software, useful for offline custom analysis.	
12	'Lock server': The system should have a 'Lock server' feature to restrict unauthorized changes to server configuration.	

13	Proposed VMS and Video Analytics solution should be from the same OEM for seamless integration & better compatibility of the product to avoid any hassles while deploying the setup.	
14	Device state indication: The tree control in the system should display a list of devices and indicate the device state (online/offline, recording ok/recording error, PTZ camera/fixed camera) with different images for each state	
Data Management		
1	Archiving or deleting older recorded data: The system should support archiving or deleting older recorded data.	
2	Manual data clean up: The system should support manual data clean up.	
3	Scheduled data clean up: The system should support scheduled data clean up, with options for daily, weekly, or monthly schedules, and the ability to clean up data older than a specified number of days.	
4	Scheduled data archiving: The system should support scheduled data archiving, with options for daily, weekly, or monthly schedules, and the ability to archive data older than a specified number of days.	
5	Video player application: The system should provide a video player application along with the archived data for accessing archived data.	
6	Automatic storage space recycling: The system should support automatic storage space recycling, with user configuration options for finer control over the recycling process.	
Network Configuration		
1	Support for configuring three types of networks as completely independent networks: input network, output network, and storage network, to allow for a fully flexible network design.	
2	Input network: This network connects cameras and the server computer.	
3	Output network: This network connects the server computer and the client computer(s).	
4	Storage network: This network connects the server computer and the storage device(s).	
5	Allows keeping the input network completely free of network bandwidth utilization fluctuations due to client connections, ensuring reliable video capture from cameras.	
6	Allows keeping the storage network completely free of network bandwidth utilization fluctuations due to client connections, ensuring reliable data storage.	
7	User-configurable IP address selection for the input network and output network.	
8	If an IP address is not available or valid when the server software is executed, it automatically switches to the available IP address and provides notification.	
Fail-safe Operation		
1	Automatic saving of all settings, including user interface settings, screen sizes, and screen locations across multiple monitors.	
2	Automatic full system restores after unexpected events such as power loss.	
3	Fully distributed architecture with no single-point failure.	
4	Automatic optimization to lower resource usage after the settings are done.	
5	One-click import and export of all settings for backup or for replicating the same setup on another computer.	
6	Redundant recording server.	
7	Designed to work 24x7 without requiring human inputs.	
Client Applications		
1	Standard Server-Client Architecture: The system will be based on a standard server client architecture.	

2	Encrypted Data Communication: Data communication between the server and clients will be encrypted to ensure security.	
3	User Configurable Site Name: Users will be able to configure a unique site name to easily identify each site or server.	
4	Automatic Time Synchronization: The system will automatically synchronize its time with the server computer.	
5	Windows PC Client: An application will be provided for Windows PC client workstations.	
6	Smartphone Client: A smartphone client will be provided, offering real-time alert notification with sound alarm and the ability to view alert camera video.	
7	Video Quality and Bandwidth Settings: Users will have settings to control video quality and bandwidth utilization for HTTP client and smartphone client video requests.	
Workstation Client Application		
1	The application should support full operator features including viewing, browsing, and report generation	
2	Connect to server using IP address or server computer domain name	
3	Can connect to server software running on a computer in same network as client computer	
4	Can connect to server software running on a computer which is behind NAT and available through port forwarding	
5	Client software can be download from server URL	
6	Automatic version check and client software version upgrade, if required	
7	'Site book' feature which can list multiple servers with the connection information. Without typing complete connection information every time, client can quickly connect to a server available in the site book	
8	Multi-site monitor - connect to multiple servers and view combined data	
9	Simultaneously view live videos from multiple servers	
10	Simultaneously view time synchronized playback videos from multiple servers.	
11	Automatic time synchronization between multiple connected server computers	
12	Multiple screens concept which includes one main screen and optional one or more additional screens	
13	Main screen has compact user interface, including tree control listing all devices, camera control console, video display layout, alarms history list, alarm acknowledgement console and menus to access various client functions	
14	Option to set main screen as live video screen or playback video screen	
15	Alarms history list supports right click menus to quickly export alarm video, to display alarm video in playback video screen, to clear alarms list Supports multiple monitors	
16	Ability to configure number of live video screens, number of playback video screens, number of map screens, maximum number of cameras in a live screen and maximum number of cameras in a playback screen – to control resources utilization and restricting operators for performing operations which may affect resource utilization	
17	Client specific CCTV keyboard and joystick configurations	
18	Client specific alarms handling configuration	
19	Option to reset server features and server application from client application, if privileges are available for the user logged in to the client application	

VII. Core Switch Technical specifications

Sl.No	Physical Specification:	Compliance Yes/ No
1	The LAN switch shall be rack mountable with 26× 10G SFP+ ports with 6× 25G SFP28 slots	
2	The LAN Switch should have 2 x USB 2.0 Ports, 1 x RJ 45 Ports MGMT Port , 1x RJ45 Console Port and 1 x USB Type C Port	
3	General Specification:	
4	The LAN switch shall be available with minimum 820 Gbps switching capacity.	
5	The LAN switch shall have minimum packet forwarding rate of 610.1 Mpps million packets per second at 64 byte packet length.	
6	The LAN switch shall support minimum 128K MAC addresses.	
7	The LAN Switch must Support Stacking up to 4 Units and upto 80Gbps Bandwidth on Stacking	
8	There shall be 2048 IGMP groups.	
9	The switch shall be able to work on both IPv4 and IPv6 (dual stack) from day one.	
10	The LAN Switch should support Layer 3 Features like RIP , OSPF v2/v3 , VRRP v2/v3 and ECMP	
11	All ports in the switch shall operate at wire-speed / line-rate.	
12	The switch shall be capable of working with AC Power Supply with a voltage varying from 170-240Volts at 50 +/-2 Hz with RPS Support	
13	The switch shall support 19 inch rack mounting.	
14	Layer - 2 Features:	
15	The LAN switch shall support IEEE 802.1Q VLAN encapsulation. Maximum 4K VLAN Groups.	
16	It shall support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors.	
17	It shall support 802.1d, 802.1p, 802.1Q, 802.1s, 802.1w, 802.1x, 802.1ab,802.3ad.	
18	It shall support 1k Routing Entries, with 256 IP Interfaces	
19	It shall support spanning-tree root guard or any other industry standard protocol to prevent other edge switches becoming the root bridge.	
20	It shall support IGMP snooping v1, v2 and v3.	
21	It shall support Link Aggregation Protocol (LACP).	
22	It shall Support ERPS , STP,MSTP,RSTP, PIM-DM (IPv4)	
23	It shall Support 802.3ah Ethernet Link OAM for Detection of Unidirectional links and to disable them to avoid problems such as spanning tree loops and should support for L2PT,DLDP	
24	It shall be able to discover the neighbouring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.	
25	It shall support for Switch port auto recovery (err disable) to automatically re- enable a link that is disabled because of a network error.	
26	It shall support Multicast VLAN registration.	
27	It shall support LLDP / LLDP-MED including client location information. It shall exchange link and device information in multi-vendor networks.	
28	It shall support configuration rollback to replace current configuration with any saved configuration file.	
29	It shall support configurable maximum transmission unit (MTU) of up to 9000 bytes, with a maximum Ethernet frame size of 9018 bytes (Jumbo frames) for bridging on Gigabit Ethernet ports.	

30	It shall support auto sensing speed on 10/100/1000 ports, auto negotiating half/full-duplex on all ports and Auto-MDIX.	
31	QoS Features:	
32	The LAN switch shall have per-port broadcast, multicast, and unicast storm control.	
33	It shall have standard 802.1p CoS and DSCP classification using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 TCP or UDP port number.	
34	There shall be eight egress queues per port to enable differentiated management of up to eight traffic types.	
35	There shall be weighted round robin (WRR) or any other industry standard protocol to provide congestion avoidance.	
36	There shall be strict priority queuing mechanisms.	
36	Granular Rate Limiting functions to guarantee bandwidth in increments shall be as low as 64 Kbps.	
38	Rate limiting support based on source and destination IP address, source and destination MAC address, Layer 4 TCP and UDP information, or any combination of these fields, using QoS ACLs (IP ACLs (IPv4 and IPv6) or MAC ACLs), class maps, and policy maps shall be available. ACL should be based on user defined packet content (Max. 6bytes length user defined).	
39	There shall be support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.	
40	There shall be support for Automatic Quality of Service for easy configuration of QoS features for critical applications.	
41	Network Security Features:	
42	The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.	
43	The LAN switch shall support for Admission Control features to improve the network's ability to automatically identify, prevent, and respond to security threats and also to enable the switches to collaborate with third-party solutions for security-policy compliance and enforcement before a host is permitted to access the network.	
44	It shall support port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports. It shall also support VLAN based filters.	
45	It shall support unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. It shall support Unicast and Multicast MAC addresses and associated VLANs.	
46	It shall support unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.	
47	It shall support IGMP filtering which shall provide multicast authentication by filtering out no subscribers and limits the number of concurrent multicast streams available per port.	
48	It shall support for SSHv2, SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.	
49	The switch shall support 2 session of Port Mirroring based on port basis / VLAN basis to support intrusion prevention system deployment in different VLANs. It shall support bidirectional data on mirror port which allows IDS to take action when an intruder is detected.	
50	It shall support RADIUS authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration.	

51	It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network / It shall support SNMP Trap for new MAC notification.	
52	It shall support DHCP snooping to allow administrators to ensure consistent mapping of IP to MAC addresses. This can be used to prevent attacks that attempt to poison the DHCP binding database, and to rate limit the amount of DHCP traffic that enters a switch port.	
53	It shall support DHCP Interface Tracker (Option 82) to augment a host IP address request with the switch port ID.	
54	It shall support port security to secure the access to an access or trunk port based on MAC address. After a specific timeframe, the aging feature should remove the MAC address from the switch to allow another device to connect to the same port.	
55	It shall support multilevel security on console access to prevent unauthorized users from altering the switch configuration.	
56	It shall support BPDU Guard feature, to shut down Spanning Tree Protocol Port Fast-enabled interfaces when BPDUs are received to avoid accidental topology loops.	
57	It shall support Spanning-Tree Root Guard (STRG) to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.	
58	It shall support for up to 2K access control entries (ACEs).	
59	Management:	
60	The LAN switch shall have CLI support to provide a common user interface and command set with all routers and switches of the same vendor.	
61	It shall have Remote Monitoring (RMON v1 and v2) software agent to support for enhanced traffic management, monitoring, and analysis.	
62	It shall have support for RMON groups through the use of a mirrored port, which permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyzer or RMON probe.	
63	It shall have layer 2 trace route to ease troubleshooting by identifying the physical path that a packet takes from source to destination or it shall support OAM 802.3ah.	
64	It shall support Trivial File Transfer Protocol (TFTP) and File Transfer Protocol (FTP) to reduce the cost of administering software upgrades by downloading from a centralized location.	
65	It shall support Simple Network Time Protocol/Network Timing Protocol (SNTP/NTP) to provide an accurate and consistent timestamp to all intranet switches.	
66	It shall support RMON v1 and v2 standards.	
67	It shall support SNMPv1, SNMPv2, and SNMPv3 and Telnet interface to deliver comprehensive in-band management, and a CLI-based management console to provide detailed out-of-band management.	
68	It shall support IPV6 management. ACL and QoS and IPV6 Neighbour Discovery.	
69	It Shall Support Operating Temperature: -5 °C to 50 °C	
70	It shall support Storage Temperature: -40 °C to 70 °C (-40 °F to 158 °F)	
71	It Shall Support Operating Humidity: 10–90% RH non-condensing	
72	The Device should have TEC/CE/ FCC / RoHS/ MTCTE, ISO 9001, ISO 14001 , IEC/EN 60950, IEC 62368 or EN55032 Class A or any other relevant Industry Standard Certification.	
73	The Original Equipment Manufacturer (OEM) shall have a registered and business operations in India for a minimum of 10 (Ten) years as on the date of bid	

	submission. ce such as the Certificate of Incorporation/Registration Certificate shall be submitted.	
74	The OEM shall have its own authorized service centre or branch office in the State of Odisha to provide timely warranty and technical support. Documentary evidence such as a valid GST Registration Certificate and Trade License/Shop & Establishment Certificate for the Odisha location shall be submitted.	
76	The OEM shall have been recognized in the Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure published up to the year 2025.	

VIII. Distribution Switch Technical specifications

Sl.No	Physical Specification:	Compliance Yes / No
1	The LAN switch shall be rack mountable with 24× 25G SFP28 ports with 4× 100G QSFP28 slots	
2	The LAN Switch should have 2 x USB 3.0 Ports, 1 x RJ 45 Ports MGMT Port , 1x RJ45 Console Port and 1 x USB Type C Port	
3	General Specification:	
4	The LAN switch shall be available with minimum 2000 Gbps switching capacity.	
5	The LAN switch shall have minimum packet forwarding rate of 810 Mpps million packets per second at 64 byte packet length.	
6	The LAN switch shall support minimum 128K MAC addresses.	
7	The LAN Switch must Support Stacking up to 12 Units and up to 800 Gbps Bandwidth on Stacking	
8	There shall be 2048 IGMP groups.	
9	The switch shall be able to work on both IPv4 and IPv6 (dual stack) from day one.	
10	The LAN Switch should support Layer 3 Features like RIP , OSPF v2/v3 , VRRP v2/v3 and ECMP, BGP , ISIS	
11	All ports in the switch shall operate at wire-speed / line-rate.	
12	The switch shall be capable of working with AC Power Supply with a voltage varying from 170-240Volts at 50 +/-2 Hz with RPS Support	
13	The switch shall support 19 inch rack mounting.	
14	Layer - 2 Features:	
15	The LAN switch shall support IEEE 802.1Q VLAN encapsulation. Maximum 4K VLAN Groups.	
16	It shall support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors.	
17	It shall support 802.1d, 802.1p, 802.1Q, 802.1s, 802.1w, 802.1x, 802.1ab,802.3ad.	
18	It shall support 2,048 IPv4, 1,024 IPv6 Routing Entries, with 256 IP Interfaces	
19	It shall support spanning-tree root guard or any other industry standard protocol to prevent other edge switches becoming the root bridge.	
20	It shall support IGMP snooping v1, v2 and v3.	
21	It shall support Link Aggregation Protocol (LACP).	
22	It shall Support ERPS , STP,MSTP,RSTP, PIM-DM (IPv4)	
23	It shall Support 802.3ah Ethernet Link OAM for Detection of Unidirectional links and to disable them to avoid problems such as spanning tree loops and should support for L2PT,DLDP	
24	It shall be able to discover the neighbouring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.	
25	It shall support for Switch port auto recovery (err disable) to automatically re-enable a link that is disabled because of a network error.	

26	It shall support Multicast VLAN registration.	
27	It shall support LLDP / LLDP-MED including client location information. It shall exchange link and device information in multi-vendor networks.	
28	It shall support configuration rollback to replace current configuration with any saved configuration file.	
29	It shall support configurable maximum transmission unit (MTU) of up to 9000 bytes, with a maximum Ethernet frame size of 9018 bytes (Jumbo frames) for bridging on Gigabit Ethernet ports.	
30	QoS Features:	
31	The LAN switch shall have per-port broadcast, multicast, and unicast storm control.	
32	It shall have standard 802.1p CoS and DSCP classification using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 TCP or UDP port number.	
33	There shall be eight egress queues per port to enable differentiated management of up to eight traffic types.	
34	There shall be weighted round robin (WRR) or any other industry standard protocol to provide congestion avoidance.	
35	There shall be strict priority queuing mechanisms.	
36	Granular Rate Limiting functions to guarantee bandwidth in increments shall be as low as 64 Kbps.	
36	Rate limiting support based on source and destination IP address, source and destination MAC address, Layer 4 TCP and UDP information, or any combination of these fields, using QoS ACLs (IP ACLs (IPv4 and IPv6) or MAC ACLs), class maps, and policy maps shall be available. ACL should be based on user defined packet content (Max. 6bytes length user defined).	
38	There shall be support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.	
39	There shall be support for Automatic Quality of Service for easy configuration of QoS features for critical applications.	
40	Network Security Features:	
41	The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.	
42	The LAN switch shall support for Admission Control features to improve the network's ability to automatically identify, prevent, and respond to security threats and also to enable the switches to collaborate with third-party solutions for security-policy compliance and enforcement before a host is permitted to access the network.	
43	It shall support port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports. It shall also support VLAN based filters.	
44	It shall support unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. It shall support Unicast and Multicast MAC addresses and associated VLANs.	
45	It shall support unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.	
46	It shall support IGMP filtering which shall provide multicast authentication by filtering out no subscribers and limits the number of concurrent multicast streams available per port.	
47	It shall support for SSHv2, SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.	

48	The switch shall support 2 session of Port Mirroring based on port basis / VLAN basis to support intrusion prevention system deployment in different VLANs. It shall support bidirectional data on mirror port which allows IDS to take action when an intruder is detected.	
49	It shall support RADIUS authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration.	
50	It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network / It shall support SNMP Trap for new MAC notification.	
51	It shall support DHCP snooping to allow administrators to ensure consistent mapping of IP to MAC addresses. This can be used to prevent attacks that attempt to poison the DHCP binding database, and to rate limit the amount of DHCP traffic that enters a switch port.	
52	It shall support DHCP Interface Tracker (Option 82) to augment a host IP address request with the switch port ID.	
53	It shall support port security to secure the access to an access or trunk port based on MAC address. After a specific timeframe, the aging feature should remove the MAC address from the switch to allow another device to connect to the same port.	
54	It shall support multilevel security on console access to prevent unauthorized users from altering the switch configuration.	
55	It shall support BPDU Guard feature, to shut down Spanning Tree Protocol Port Fast-enabled interfaces when BPDUs are received to avoid accidental topology loops.	
56	It shall support Spanning-Tree Root Guard (STRG) to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.	
57	It shall support for up to 2K access control entries (ACEs).	
58	Management:	
59	The LAN switch shall have CLI support to provide a common user interface and command set with all routers and switches of the same vendor.	
60	It shall have Remote Monitoring (RMON v1 and v2) software agent to support for enhanced traffic management, monitoring, and analysis.	
61	It shall have support for RMON groups through the use of a mirrored port, which permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyzer or RMON probe.	
62	It shall have layer 2 trace route to ease troubleshooting by identifying the physical path that a packet takes from source to destination or it shall support OAM 802.3ah.	
63	It shall support Trivial File Transfer Protocol (TFTP) and File Transfer Protocol (FTP) to reduce the cost of administering software upgrades by downloading from a centralized location.	
64	It shall support Simple Network Time Protocol/Network Timing Protocol (SNTP/NTP) to provide an accurate and consistent timestamp to all intranet switches.	
65	It shall support RMON v1 and v2 standards.	
66	It shall support SNMPv1, SNMPv2, and SNMPv3 and Telnet interface to deliver comprehensive in-band management, and a CLI-based management console to provide detailed out-of-band management.	
67	It shall support IPV6 management. ACL and QoS and IPV6 Neighbour Discovery.	
68	It Shall Support Operating Temperature: -5 °C to 50 °C or better	
69	It shall support Storage Temperature: -40 °C to 70 °C (-40 °F to 158 °F)	

70	The Device should have TEC /CE/FCC / RoHS/ MTCTE, ISO 9001, ISO 14001 , IEC/EN 60950, IEC 62368 or EN55032 Class A or any other relevant Industry Standard Certification.	
71	The OEM shall have its own authorized service centre or branch office in the State of Odisha to provide timely warranty and technical support. Documentary evidence such as a valid GST Registration Certificate and Trade License/Shop & Establishment Certificate for the Odisha location shall be submitted.	
72	The OEM shall have been recognized in the Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure published up to the year 2025.	
73	It Shall Support Operating Humidity: 10–90% RH non-condensing	

IX. Technical Specification of 8Port Industrial POE Switch

Sl.No	Technical Specification of 8Port Industrial POE Switch	Compliance Yes/No
1	Device shall comply with IEEE 802.3i, 802.3u, 802.3ab, 802.3z, 802.3x, 802.1p, 802.1q, 802.1d, 802.1w and 802.1ab standards.	
2	Device must have minimum 8 × Gigabit PoE RJ45 ports and 2 × Gigabit SFP/RJ45 combo ports.	
3	Device shall support auto-negotiation and auto MDI/MDIX.	
4	Device must support PoE 802.3 af/at/bt with power budget 60W/120W/240W based on input voltage.	
5	Device shall support switching capacity of at least 20 Gbps.	
6	Device shall support packet forwarding rate of minimum 14.88 Mpps.	
7	Device shall support MAC address table of minimum 8K entries.	
8	Device shall support jumbo frame up to 15 KB.	
9	Device shall support QoS features with 802.1p and DSCP priority.	
10	Device shall support 8 priority queues.	
11	Device shall support WRR queue scheduling.	
12	Device shall support port-based bandwidth control / rate limiting.	
13	Device shall support MTU VLAN and Port-based VLAN.	
14	Device shall support IGMP Snooping v1/v2/v3.	
15	Device shall support static link aggregation with up to 4 groups and 6 ports per group.	
16	Device shall support STP (802.1d) and RSTP (802.1w).	
17	Device shall support Loopback Detection and 802.3x flow control.	
18	Device shall support 4K VLAN IDs and minimum 32 VLAN groups.	
19	Device shall support port mirroring (one-to-one / many-to-one / ingress / egress / both).	
20	Device shall support storm control for broadcast/multicast/unknown-unicast.	
21	Device shall support L2 multicast as per IGMP snooping.	
22	Device shall support cable diagnostics and DDM.	
23	Device shall support web-based GUI management.	
24	Device shall support DHCP Client.	
25	Device shall support LLDP (802.1ab).	
26	Device shall support system logs (SYSLOG).	
27	Device shall support TFTP & Web-based firmware upgrade.	
28	Device shall support ZTP and centralized management through Controller (Hardware/Software/Cloud)	
29	Device shall support industrial finless design with DIN-rail/wall mount.	
30	Device shall support operating temperature -40°C to 75°C.	
31	Device shall support IP40 rated enclosure.	

32	Device shall support dual redundant 12–57V DC input.	
33	Device shall provide overload, overvoltage, and reverse polarity protection.	
34	Device shall support ESD ±8kV air/±6kV contact and surge ±6kV Ethernet/±4kV power.	
35	Device shall be certified TEC/ CE/ FCC/ RoHS.	
36	Device shall comply with IEC/EN EMC standards (61000 series, 55032/35).	
36	Device shall meet IEC 60068 shock, vibration and freefall tests.	
71	The OEM shall have its own authorized service centre or branch office in the State of Odisha to provide timely warranty and technical support. Documentary evidence such as a valid GST Registration Certificate and Trade License/Shop & Establishment Certificate for the Odisha location shall be submitted.	
72	The OEM shall have been recognized in the Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure published up to the year 2025.	
38	OEM must be ISO 9001 & 14001 certified.	

X. LAN Switch Technical Specifications

Sl.No	Physical Specification:	Compliance Yes/No
1	The LAN switch shall be rack mountable with 24× Gigabit RJ45 ports and 4× 10 Gbps SFP+ slots	
2	The LAN Switch should have 1 x USB 2.0 Ports, 1x RJ45 Console Port and 1 x USB Type C Port	
3	General Specification: The LAN switch shall be available with minimum 128 Gbps Gbps Switching Fabric.	
4	The LAN switch shall have minimum packet forwarding rate of 95.23 Mpps million packets per second at 64 byte packet length.	
5	The LAN switch shall support minimum 32K MAC addresses.	
6	The LAN Switch must Support Stacking up to 4 Units and upto 80Gbps Bandwidth on Stacking	
7	There shall be 2048 IGMP groups.	
8	The switch shall be able to work on both IPv4 and IPv6 (dual stack) from day one.	
9	The LAN Switch should support Layer 3 Features like RIP , OSPF , and ECMP	
10	All ports in the switch shall operate at wire-speed / line-rate.	
11	The switch shall be capable of working with AC Power Supply with a voltage varying from 170-240Volts at 50 +/-2 Hz with RPS Support	
12	The switch shall support 19 inch rack mounting.	
13	Layer - 2 Features: The LAN switch shall support IEEE 802.1Q VLAN encapsulation. Maximum 4K VLAN Groups.	
14	It shall support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors.	
15	It shall support 802.1d, 802.1p, 802.1Q, 802.1s, 802.1w, 802.1x, 802.1ab,802.3ad.	
16	It shall support 1k Routing Entries, with 256 IP Interfaces	
17	It shall support spanning-tree root guard or any other industry standard protocol to prevent other edge switches becoming the root bridge.	
18	It shall support IGMP snooping v1, v2 and v3.	
19	It shall support Link Aggregation Protocol (LACP).	
20	It shall Support ERPS , STP,MSTP,RSTP, PIM-DM (IPv4)	
21	It shall Support 802.3ah Ethernet Link OAM for Detection of Unidirectional links and to disable them to avoid problems such as spanning tree loops and should support for L2PT,DLDP	

22	It shall be able to discover the neighbouring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.	
23	It shall support for Switch port auto recovery (err disable) to automatically re-enable a link that is disabled because of a network error.	
24	It shall support Multicast VLAN registration.	
25	It shall support LLDP / LLDP-MED including client location information. It shall exchange link and device information in multi-vendor networks.	
26	It shall support configuration rollback to replace current configuration with any saved configuration file.	
27	It shall support configurable maximum transmission unit (MTU) of up to 9000 bytes, with a maximum Ethernet frame size of 9018 bytes (Jumbo frames) for bridging on Gigabit Ethernet ports.	
28	It shall support auto sensing speed on 10/100/1000 ports, auto negotiating half/full-duplex on all ports and Auto-MDIX.	
29	QoS Features: The LAN switch shall have per-port broadcast, multicast, and unicast storm control.	
30	It shall have standard 802.1p CoS and DSCP classification using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 TCP or UDP port number.	
31	There shall be eight egress queues per port to enable differentiated management of up to eight traffic types.	
32	There shall be weighted round robin (WRR) or any other industry standard protocol to provide congestion avoidance.	
33	There shall be strict priority queuing mechanisms.	
34	Granular Rate Limiting functions to guarantee bandwidth in increments shall be as low as 64 Kbps.	
35	Rate limiting support based on source and destination IP address, source and destination MAC address, Layer 4 TCP and UDP information, or any combination of these fields, using QoS ACLs (IP ACLs (IPv4 and IPv6) or MAC ACLs), class maps, and policy maps shall be available. ACL should be based on user defined packet content (Max. 6bytes length user defined).	
36	There shall be support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.	
36	There shall be support for Automatic Quality of Service for easy configuration of QoS features for critical applications.	
38	Network Security Features: The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.	
39	The LAN switch shall support for Admission Control features to improve the network's ability to automatically identify, prevent, and respond to security threats and also to enable the switches to collaborate with third-party solutions for security-policy compliance and enforcement before a host is permitted to access the network.	
40	It shall support port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports. It shall also support VLAN based filters.	
41	It shall support unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. It shall support Unicast and Multicast MAC addresses and associated VLANs.	

42	It shall support unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.	
43	It shall support IGMP filtering which shall provide multicast authentication by filtering out no subscribers and limits the number of concurrent multicast streams available per port.	
44	It shall support for SSHv2, SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.	
45	The switch shall support 2 session of Port Mirroring based on port basis / VLAN basis to support intrusion prevention system deployment in different VLANs. It shall support bidirectional data on mirror port which allows IDS to take action when an intruder is detected.	
46	It shall support RADIUS authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration.	
47	It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network / It shall support SNMP Trap for new MAC notification.	
48	It shall support DHCP snooping to allow administrators to ensure consistent mapping of IP to MAC addresses. This can be used to prevent attacks that attempt to poison the DHCP binding database, and to rate limit the amount of DHCP traffic that enters a switch port.	
49	It shall support DHCP Interface Tracker (Option 82) to augment a host IP address request with the switch port ID.	
50	It shall support port security to secure the access to an access or trunk port based on MAC address. After a specific timeframe, the aging feature should remove the MAC address from the switch to allow another device to connect to the same port.	
51	It shall support multilevel security on console access to prevent unauthorized users from altering the switch configuration.	
52	It shall support BPDU Guard feature, to shut down Spanning Tree Protocol Port Fast-enabled interfaces when BPDUs are received to avoid accidental topology loops.	
53	It shall support Spanning-Tree Root Guard (STRG) to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.	
54	It shall support for up to 2K access control entries (ACEs).	
55	Management: The LAN switch shall have CLI support to provide a common user interface and command set with all routers and switches of the same vendor.	
56	It shall have Remote Monitoring (RMON v1 and v2) software agent to support for enhanced traffic management, monitoring, and analysis.	
57	It shall have support for RMON groups through the use of a mirrored port, which permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyzer or RMON probe.	
58	It shall have layer 2 trace route to ease troubleshooting by identifying the physical path that a packet takes from source to destination or it shall support OAM 802.3ah.	
59	It shall support Trivial File Transfer Protocol (TFTP) and File Transfer Protocol (FTP) to reduce the cost of administering software upgrades by downloading from a centralized location.	
60	It shall support Simple Network Time Protocol/Network Timing Protocol (SNTP/NTP) to provide an accurate and consistent timestamp to all intranet switches.	
61	It shall support RMON v1 and v2 standards.	

62	It shall support SNMPv1, SNMPv2, and SNMPv3 and Telnet interface to deliver comprehensive in-band management, and a CLI-based management console to provide detailed out-of-band management.	
63	It shall support IPV6 management. ACL and QoS and IPv6 Neighbour Discovery.	

SI NO	Central Management Device Specification	Compliance Y/N
1	It shall be a dedicated hardware-based centralized network management device to capable of managing wired, wireless, and security devices from a single platform.	
2	It shall support centralized management of a minimum of 200 Managed Switches or higher, 10 certain Delta Stream GPON OLT, 100 Gateway in Day 1 without any license .	
3	It Shall come with life time no Recurring or renewal cost	
4	It shall must have 2× 10GE SFP+ Slots, 4× GE RJ45 Ports, and 2× USB 3.0 Ports.	
5	It shall support multi-tenant management with role-based access control, site-level privileges, and device-level privileges.	
6	It shall support dual internal redundant AC power supplies to ensure high availability.	
7	It shall support secure cloud access for remote management without requiring an on-site management PC.	
8	It shall support automatic device discovery, batch configuration, and centralized firmware upgrades.	
9	It shall support network topology mapping to display the logical and physical relationships between managed network devices for simplified monitoring and troubleshooting.	
10	It shall support customizable dashboards, real-time monitoring, traffic statistics, event logging, and alarm notifications.	
11	It shall support Deep Packet Inspection (DPI) and Intrusion Prevention/Detection System (IPS/IDS) monitoring capabilities.	
12	It shall support SNMP, Email notification, SSH, and DDNS for secure device management and monitoring.	
13	It shall support 802.1X authentication, RADIUS Authentication, MAC Authentication, and RADIUS Accounting.	
14	It shall support Access Control Lists (ACLs), URL filtering, attack prevention, bandwidth control, and session limitation policies.	
15	It shall support SSL VPN, IPSec VPN, Wire Guard VPN, OpenVPN, L2TP VPN, and PPTP VPN or equivalent secure VPN technologies.	
16	It shall support automatic backup, configuration restore, and scheduled backup of the controller database via USB	
17	It shall support PoE scheduling, WLAN scheduling, and device reboot scheduling.	
18	It shall support a minimum of 4,090 VLANs per site, subject to the capability of the connected switching infrastructure.	
19	It shall support management of Access Points, Managed Switches, Security Gateways, and GPON OLTs from a single interface.	
20	It shall support rack-mount installation in a standard 19-inch equipment rack.	
21	It shall support zero-touch deployment or automatic provisioning of supported network devices.	
22	It shall support role-based administration, audit logs, and user activity records for enhanced security.	

23	It shall support an operating temperature range of 0°C to 40°C (32°F to 104°F) or better.	
24	It shall support an operating humidity range of 10% to 90% non-condensing or better.	
25	It must have certification of CE, FCC, RoHS	

XI. 24V 10A Industrial SMPS with Redundancy For 8Port Poe Switch

Sl.No	Input Supply Characteristics		Compliance Yes / No
1	Supply Voltage Range	Wide range multi voltage I/P 90V to 260V AC/ 127V to 375V DC	
2	Frequency Range	Wide frequency range 47 to 63Hz	
3	Efficiency	More than 86%	
4	AC Current	< 1.40 A @ 115 VAC, < 0.80 A @ 230 VAC	
5	Inrush Current	20A/115VAC; 35A/230VAC	
6	No Load Power Consumption	<0.5W @230V AC	
7	Output Characteristics		
8	Output DC voltage	24V Adjustable	
9	Output DC voltage adjustment range	22V to 28V DC	
10	Output Current	5A @24V DC	
11	Output Power	120W Maximum	
12	Line Regulation	+/- 0.5%	
13	Load Regulation	+/- 0.5%	
14	Ripple & Noise	120mV p-p max	
15	Start-up Time	<1000 ms @ nominal input (100% load)	
16	Rise Time	30msec at full load	
17	Hold up time	>35 ms @ 115 VAC, > 70 ms @ 230 VAC (100% load)	
18	Dynamic Response (Overshoot Undershoot O/P Voltage)	± 5% @ 85 & 264 Vac input, 10-90% load (Slew Rate: 0.1A/μS, 50% duty cycle @ 5Hz & 1KHz)	
19	Start-up with Capacitive Loads	8,000μF Max	
	Protections		
20	Over Voltage	28.8V to 33.6V (Output voltage turn off, Restart power to turn on device)	
21	Over load/ Over current	105 to 150% of rated load current, Auto-recovery continuous current limited mode.	
22	Over temperature	Shut down output voltage, re-power ON to recover	
23	Short circuit	Hiccup mode, recovers automatically after fault recovery	
24	Protection against shock	Class 1 with Protection Earth connection, Earthing terminal required	
25	Internal Input Fuse	4A / 250V	
26	Recommended breaker for input	6A ... 16 A (Characteristics B,C,D,K or comparable)	
	User Interface		
	Pot	To set output voltage	
	LED Indication		
28	Green LED	ON : DC O/P OK	

	Environmental		
29	Operating Temperature	-30°C to +70°C	
30	Storage Temperature Humidity	-40°C to +85°C	
31	Operating Relative humidity	20 - 90% RH non-condensing	
32	Operating Altitude	Up to 2000 meters	
33	Over voltage Category	II	
34	Pollution degree	2	
35	Vibration Test	Operating & Non-Operating as per : IEC 60068-2-6 20 - 500Hz (5g)	
	Mechanical		
36	Case chassis	Aluminium	
37	Unit weight	Approx. 510g	
38	Cooling system	Convection	
	Terminal Type	Front facing terminal	
39	Wire	AWG 26 - 10 / 24 - 12	
40	Mounting type	DIN Rail Mount	
	Reliability		
41	MTBF	> 700,000 hrs as per IEC 62380	
	Certification & OEM Criteria	CE, UKCA, ROHS, MII (made in India) SMPS belongs to MII CLASS 1 CATEGOR	
42	OEM MAF & Certification	OEM Declaration / Manufacturer's Authorization Form (MAF), if bidder is not the OEM	
A		OEM has a minimum of 15 years of experience in designing, manufacturing, and supplying SMPS of similar rating and specification.	
B		The OEM possesses a valid ISO 9001:2015 certification for design and manufacturing of SMPS.	
C		OEM manufacturing units in India Minimum 50 years	
46	EMI / EMC		
i	Harmonic Current Emission	IEC 61000-3-2 Class A	
ii	Voltage Flicker and Fluctuations	61000-3-3 Class A	
iii	ESD	IEC 61000-4-2 Level IV	
iv	Radiated Susceptibility	IEC 61000-4-3 LEVEL III	
v	Electrical Fast Transients	IEC 61000-4-4 LEVEL III	
vi	Surge	IEC 61000-4-5 LEVEL IV Common Mode- 4kV, Diff Mode- 2kV	
vii	Conducted Susceptibility	IEC 61000-4-6	
viii	Voltage Dips and Interruptions (AC)	IEC61000-4-11	
ix	Voltage Dips and Interruptions (DC)	IEC 61000-4-29	
x	Conducted Emission	CISPR 32 Class B	
47	Safety Compliance		
A	Parameter	Standard	
B	Test Voltage Between I/P & O/P	UL508 3 KV	
C	Test Voltage Between I/P & Earth	UL508 2 KV	

D	Test Voltage Between O/P & Earth	UL508 1.25 KV	
E	Impulse Voltage Between I/P & O/P	IEC 61204 4 KV	
F	Insulation Resistance	UL508 >100MOhm	
G	Leakage Current	UL508 <1mA @ 240VAC	
48	Environmental Compliance		
A	Operating Temperature	-30°C to +70°C	
B	Storage Temperature	-40°C to +85°C	
C	Relative Humidity	20–90% RH (Non-condensation)	
D	Max. Operating Altitude	2000 meters	
E	Vibration	20–500Hz (59) IEC 60068-2-6	

XII. Technical Specification of Outdoor Enclosure

Sr.No	Parameter	Specification	Compliance Y/N
1	Equipment	Outdoor Junction Box with continuous duty Temperature Adjustment, Display facia with control push buttons and SD card Feature	
2	Application	Outdoor installation for UPS and Switch protection	
3	Mounting	Pole Mounted/wall Mounted (As Required)	
4	Enclosure Material	18 gauge	
5	Degree of Protection	IP65	
6	Surface Finish	Powder Coated	
7	Coating Thickness	80–100 Microns Minimum	
8	Colour	Light Grey	
9	Door Type	Single Front Hinged Door	
10	Door Gasket	Polyurethane Seamless Gasket	
11	Cable Entry	Bottom Removable Gland	
12	Gland Plate Material	GI/Aluminium/ABS	
13	Terminal Blocks	As Per Wiring Requirement	
14	Wiring Duct	PVC Slotted Wiring Duct	
15	Control Display	Front Facia Display White+ Green	
16	Programming method	4 keys and/ Or SD card	
17	Autotuned feature	Required	
18	Led Indications	Output 1, 2 (Fan On, Overheat)	
19	Temperature sensor	Temperature probe type sensor for JB inside temp continuous monitoring	
20	Outputs	Relay outputs for fan driving, overheat indication if required, SSR 12 VDC 50 mA	
21	Resolution	0.1 Deg Centigrade	
22	Temperature programming	Programmable temperature range for fan cooling control	
23	RH	85% RH	
24	Alarm feature	Available	
25	Hour Meter	Available	
26	Dwell Timer	Available	
27	Control modes	On Off/ PID	
28	Tune Method	Heat/ Cool/ Heat Cool	
29	Controller standard	IEC 61326	

30	Controller Harmonic Current Emissions	IEC 61000-3-2	
31	Controller Voltage Current & Fluctuations	IEC 61000-3-3	
32	Controller ESD	IEC 61000-4-2	
33	Controller Radiated Susceptibility	IEC 61000-4-3	
34	Controller Electrical Fast Transients	IEC 61000-4-4	
35	Controller Surges	IEC 61000-4-5	
36	Controller Conducted Susceptibility	IEC 61000-4-6	
37	Controller Power Frequency Magnetic Field	IEC 61000-4-8	
38	Controller Voltage Dips Immunity Test (AC)	IEC 61000-4-11	
39	Controller Voltage Dips Immunity Test (DC)	IEC 61000-4-29	
40	Controller Conducted Emission	CISPR 14-1	
41	Controller Radiated Emission	CISPR 14-1	
42	Controller Dielectric Strength (I/P & O/P)	IEC 60255-5	
43	Controller Impulse Voltage between I/P & O/P	IEC 60255-5	
44	Controller Single Fault	IEC 61010-01	
45	Controller Insulation Resistance	UL 508 > 100 MΩ	
46	Controller Leakage Current	UL 508 < 3.5 mA	
47	Controller Cold Heat	IEC 60068-2-1	
48	Controller Dry Heat	IEC 60068-2-2	
49	Controller Vibration	IEC 60068-2-6	
50	Controller Repetitive Shock	IEC 60068-2-27	
51	Controller Non-Repetitive Shock	IEC 60068-2-27	
52	Cooling System	Forced Ventilation with automatic temperature controller	
53	Cooling Fan Type	DC Brushless Fan 4"	
54	Fan Supply Voltage	24VDC ±10%	
55	Fan Size	120x120x38 mm	
56	Fan Air Flow	105 to 130 CFM	
57	Fan Operating Temperature	-20°C to +70°C	
58	Fan Noise Level	Less than 50 dB(A) 1. Manufacturer's products must be Made in India MII CLASS 1. 2. Manufacturer should have factory in India for more than 20 years.	
59			

		3. Manufacturer should have sales and service support Pan India. 4. Manufacturer should have experience of manufacturing automation products in India for more than 15 years minimum	
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XIII. Technical Specification of Firewall

Sl.No	General Parameter	Specification	Compliance Y/N
1	Operating System	SonicOS	
2	Interfaces	4 * 1GbE Cu, 1*1G SFP, 1 console, 1 USB (USB type-C or USB type-A)	
3	Management	Network Security Manager (2.6 and above), CLI, SSH, Web UI, REST APIs	
4	Single Sign-On (SSO) Users	250	
5	VLAN interfaces	64	
6	Access Points Supported (Maximum)	2	
7	Firewall/VPN Performance		
8	Firewall inspection throughput	750 Mbps	
9	Threat prevention throughput	750 Mbps	
10	Application inspection throughput	750 Mbps	
11	IPS throughput	750 Mbps	
12	Anti-malware inspection throughput	750 Mbps	
13	TLS/SSL inspection and encryption throughput (DPI SSL)	250 Mbps	
14	IPSEC VPN throughput	750 Mbps	
15	Connections per second	7500	
16	Maximum connections (SPI)	300000	
17	Maximum connections (DPI)	75000	
18	Maximum connections (DPI SSL)	10000	
19	VPN		
20	Site-to-site VPN tunnels	50	
21	IPSec VPN clients (maximum)	1(5)	
22	SSL VPN licenses (maximum)	1(5)	
23	Encryption/authentication	DES, 3DES, AES (128, 192, 256-bit)/MD5, SHA-1, Suite B Cryptography	
24	Key exchange	Diffie Hellman Groups 1, 2, 5, 14v	
25	Route-based VPN	RIP, OSPF, BGP	
26	Certificate support	Verisign, Thawte, Cyberthreat, RSA Keon, Entrust and Microsoft CA for SonicWall-to SonicWall VPN, SCEP	

27	VPN features	Dead Peer Detection, DHCP Over VPN, IPSec NAT Traversal, Redundant VPN Gateway, Route-based VPN	
28	Global VPN client platform supported	Microsoft® Windows 10	
29	Net Extender	Microsoft® Windows 10, Linux	
30	Mobile Connect	Apple® iOS, Mac OS X, Google® Android™, Kindle Fire, Chrome OS, Windows 10	
31	Security Services		
32	Deep Packet Inspection Services	Gateway Anti-Virus, Anti-Spyware, Intrusion Prevention, DPI SSL	
33	Content Filtering Service (CFS)	HTTP URL, HTTPS IP, keyword and content scanning, Comprehensive filtering based on file types such as ActiveX, Java, Cookies for privacy, allow/forbid lists	
34	Comprehensive Anti-Spam Service	Yes	
35	Application Visualization	Yes	
36	Application Control	Yes	
	Capture Advanced Threat Protection	Yes	
37	DNS Filtering	Yes	
38	Cloud Secure Edge		
39	Secure Private Access	Yes	
40	Networking		
41	IP address assignment	Static (DHCP, PPPoE, L2TP and PPTP client), Internal DHCP server, DHCP relay	
42	NAT modes	1:1, 1: many, many:1, many: many, flexible NAT (overlapping IPs), PAT, transparent mode	
43	Routing protocols	BGP, OSPF, RIPv1/v2, static routes, policy-based routing	
44	QoS	Bandwidth priority, max bandwidth, guaranteed bandwidth, DSCP marking, 802.1e (WMM)	
45	Authentication	LDAP (multiple domains), XAUTH/RADIUS, SSO, Novell, internal user database, Terminal Services, Citrix, Common Access Card (CAC)	
46	Local user database	150	
47	VoIP	Full H323-v1-5, SIP	
48	Standards	TCP/IP, UDP, ICMP, HTTP, HTTPS, IPSec, ISAKMP/IKE, SNMP, DHCP, PPPoE, L2TP, PPTP, RADIUS, IEEE 802.3	
49	Certifications	Pending : CSfC	
50	High availability	Active/Standby with stateful synchronization	
51	Hardware		
52	Form Factor	Desktop	
53	Power supply	36W	

54	Maximum power consumption (W)	11.6W	
55	Input power	100-240 VAC, 50-60Hz, 3A	
56	Total heat dissipation (BTU)	39.6	
57	MTBF @26oC in years	64.3	
58	Environment (Operating/Storage)	0°C to + 40°C / -40°C to +70°C	
59	Humidity	5-95% non-condensing	
60	Major regulatory compliance (wired models)	FCC Class B, ICES Class B, CE (EMC, LVD, RoHS), RCM, VCCI Class B, UL, cUL, CB, Mexico DGN by UL, WEEE, REACH, BSMI, KCC/MSIP, ANATEL, TEC/MTCTE	

XIV. Specification of single phase Type1+2 SPD

SI No	Configuration	Description	Compliance (Y/N)
1	Description of SPD Type	Type1+2	
2	Network Voltage	230/400 V	
3	Maximum Continuous Operating Voltage (Uc)	320 VAC	
4	Temporary overvoltage withstand (Ut)	440 Vac	
5	Nominal Discharge Current, 15 X 8/20 µs (In)	30 kA	
6	Maximum Discharge Current, 8/20 µs (Imax)	100 KA	
7	Lightning impulse current (10/350 µs) (Iimp)	8 KA /Pole	
8	Protection Level (Up)	0.9 KV	
9	Technology	MOV	
10	Thermal Disconnecter	Internal	
11	Operating Temperature	-40/+85 °C	
12	Protection Class	IP20	
13	Housing Materials	Thermoplastic UL94-V0	

SITC of 6 Core Single mode (9/125µm) G652 Outdoor Armoured Fibber Optic Cable having minimum technical specification as mentioned below:			
S. No.	Parameter	Specification	Compliance (Yes/No)
1	Quoted Make:	To be Specified by the Bidder	
2	Quoted Model:	To be Specified by the Bidder	
3	Type	6 Core Single mode (9/125µm) G652 Fibber optic Outdoor Armoured Cable	
4	Cable	6 Core Single Mode Unloose Tube, Single Sheath ECCS Tape Armoured FO cable suitable for both duct & aerial installations,	
5	Application	Fibber Cable shall be perfectly suited for both gigabit Ethernet and 10 gigabit Ethernet campus and backbone applications.	
6	Outer Sheath	UV Resistance HDPE Jacket / Black	
7	No. of Tube / Tube diameter	1 / 3.0 ± 0.1 mm	
8	Water Blocking Material	WS Tape	

9	Loose Tube Construction	Std. plywood reel: Unloose Tube, Water Blocking with fibres. Individually colour coded optical fibres as per Global Standards	
10	Cable Specifications	Fibber Colour / Fibbers per Tube : Blue, Orange, Green, Brown, Grey, White, Red, Black, Yellow, Violet, Pink, Aqua Cable diameter : 9.0 ± 0.5 mm	
11	Optical Properties	Core Non-circularity : $\leq 6\%$ Cladding Diameter : 125.0 ± 0.7 μ m Core/cladding Concentricity Error : $\leq 0.6\mu$ m Cladding Non-circularity : $\leq 1.0\%$ Primary Coating Diameter : $245 \pm 10\mu$ m Coating/cladding Concentricity Error : $\leq 12\mu$ m Attenuation Co-efficient 1310 Wavelength (nm) : ≤ 0.36 dB/km 1550 Wavelength (nm) : ≤ 0.24 dB/km 1625 Wavelength (nm) : ≤ 0.26 dB/km Chromatic dispersion : 1285 ~ 1330nm ≤ 3.4 ps/(nm·km) 1550nm ≤ 18 ps/(nm·km) 1625nm ≤ 22 ps/(nm·km) Cut-off Wavelength ≤ 1260 nm PMDQ (Quadrature average*) : ≤ 0.20 ps//km $^{1/2}$ MFD : 9.1 ± 0.4 μ m at 1310nm MFD : 10.3 ± 0.5 μ m at 1550nm Zero dispersion slope : ≤ 0.092 ps/(nm 2 ·km) Zero dispersion wavelength : 1300~1324nm	
12	Temperature Range	Storage Temperature Range: -40°C to +75°C Installation Temperature Range: -10°C to +50°C Operating Temperature Range: -40°C to +75 °C	
13	Physical Properties	Complies to ANSI/TIA-568.3-D, ITU-T G652.D, Telcordia GR-20, IEC 60794-2, ISO/IEC 11801,ISO/IEC 24702 Cable Bend Radius : 20 x Cable Diam. Cable Kink Radius : 10 x Cable Diam. Cable Max. Tensile Strength (Short Term) : 3000 N Cable Max. Crush Resistance (Short Term) : 3000 N / 100mm Impact Resistance : 25 Nm	
14	Regulatory Compliances	All passive components should be RoHS complied. Declaration of – ROHS compliant should clearly be mentioned on data sheets of each Passive Components. The OEM must ensure full compliance with the RoHS Directive 2011/65/EU, as amended by Directive (EU) 2015/863, restricting the use of hazardous substances in electrical and electronic equipment. The OEM should be CE Certified and its own manufacturing facility must adhere to ISO 14001:2015,ISO 45001:2018, ISO 27001 and ESG Rated (Certificates to be Enclosed) The Proposed OEM should be a member of TIA and BICSI and should have a CDCP, ITIL or PMI-PMP on the OEM's	

		payroll sitting in India whose services can be utilized for this project.	
		All passive components Copper and fiber should be from a Single OEM of one make. and shall be a Class 1 local supplier as defined under the Government of India's Public Procurement (Preference to Make in India) Order, thereby demonstrating a strong commitment to indigenous manufacturing and national self-reliance initiatives.	
15	Test Reports	OEM factory test reports must be provided against each drum / roll of fiber cable.	
	SITC of 12F / 24F, 1U Rack Mount Fiber Enclosure (LIU) including Splice Trays and Adapter Strips having minimum technical specification as mentioned below:		
SL. No.	Parameter	Specification	Compliance (Yes/No)
1	Quoted Make	To be Specified by the Bidder	
2	Quoted Model	To be Specified by the Bidder	
3	Type	1U, 19 Inch Rack Mount Fiber Enclosure (LIU) including Splice Trays and Adapter Strips which accepts loose tube & distribution cable	
4	Fiber Interface Unit	Fiber Patch Panel Typically used in Server rooms, Network rooms, Data Centres and Small offices Can be mounted directly on any 19" rack or cabinet. It should be able to accommodate a variety of Fiber connectors and terminated to fiber cables using Splicing or other methods.	
5	Features & Compatibility	The Fiber Panels are designed with fixed mount adapter plate assemblies. Should be available in 6 - 96 Port in 1U Rack Mount LIU.	
		Sliding design, this panel allows easy access during installation or rework without disturbing previously terminated fiber cable.	
		This also offers multiple cable entries to provide various customized solutions as per the customers' requirement.	
		This panel comes with adaptor plates which are preloaded with coupler and can snap in for installation and can be removed easily for future changes.	
		900m Tight buffer pigtails are provided with this panel. This panel is preloaded with Splice tray & necessary fiber management accessories.	
		4 Nos of 20mm diameter at the rear for Cable entries	
6	Material	Panel be constructed with SPCC (Cold rolled steel sheet)	
7	Standards	Conformance to Single Mode (ANSI/TIA-568.3-D, Telcordia GR-326-CORE, Telcordia GR-1221-CORE, ISO/IEC 11801, IEC 61754 & IEC 61300 series), Multi Mode (ANSI/TIA-568.3-D, IEC 61300-3-4, IEC 61300-3-6, IEC 60874-1, ISO/IEC 11801)	
8	Adapter Types	Pigtails consist of LC, SC, FC, ST, MTRJ, and E2000 Connectors.	
9	Pigtails Type	Pigtails shall be constructed with bend Insensitive Fiber	

10	Insertion Loss	≤0.2 dB (Single mode) ,	
11	Return Loss	≥50 dB (UPC), (Single mode) , ≥60 dB (APC) (Single mode),	
12	Repeatability	≤0.1dB	
13	Durability	≤0.2 dB, 1000mattings	
14	Ferrule Material	Zirconia Ceramic	
15	Operating Temperature	-25 °C to +70 °C	
16	Regulatory Compliances	All passive components should be RoHS complied. Declaration of – ROHS compliant should clearly be mentioned on data sheets of each Passive Components. The OEM must ensure full compliance with the RoHS Directive 2011/65/EU, as amended by Directive (EU) 2015/863, restricting the use of hazardous substances in electrical and electronic equipment.	
		The Proposed OEM should be CE Certified and its own manufacturing facility must adhere to ISO 14001:2015,ISO 45001:2018, ISO 27001:2022 and ESG Silver Rated. Valid certificates for all the above standards and ratings must be enclosed with the proposal to support compliance verification.	
		The proposed OEM must be an active member of both the TIA and BICSI. Additionally, the OEM shall have on its Indian payroll at least vendor natural certified professional holding CDCP, CFOS, ITIL or PMI-PMP credentials. The services of this professional must be available for consultation and direct involvement in the design, deployment, and oversight of this project. Valid Certificates of the OEM employees along with a letter from the OEM HR Department verifying that the employees are in fact sitting in India should be submitted. (Details must be provided).	
		The OEM must be a legal entity registered in India under the Companies Act, 1956, having registered office and operations in India. The OEM of passive network components to be quoted by the bidder should be present in India for last 10 Years or more. (Document proof Required- Proof of Incorporation should be attached) The company should have a Valid PAN and a valid (GSTN)	
	SITC of 3Mtr, Duplex Single mode 9/125 OS2 LSZH Fiber Patch Cable, SC-LC, LC-LC or SC-SC having minimum technical specification as mentioned below :		
S. No.	Parameter	Specification	Compliance (Yes/No)
1	Quoted Make	To be Specified by the Bidder	
2	Quoted Model	To be Specified by the Bidder	
3	Features	The patch cord outer jacket material should be LSZH to protect the fibber glass inside	
		The protective outer jacket should have excellent side pressure resistance, flexibility and bending performance.	
		Good mechanical and temperature characteristics.	
		Small diameter, light weight, easy to connect and support large capacity data transmission.	
4	Fibber Count	2	

5	Outer jacket OD	3.0 mm X 2	
6	Metal tube OD	1.4 ± 0.3 mm	
7	Insertion Loss	≤0.2 dB (Single mode) ,	
8	Return Loss	≥50 dB (UPC), (Single mode) , ≥60 dB (APC) (Single mode),	
9	Durability	≤0.2 (1000 mattings)	
10	Minimum allowable Tensile strength(N)	500 (short Term),300(Long Term)	
11	Minimum allowable Crush Load strength(N/100mm)	3000(short Term),2000(Long Term)	
12	Minimum bending radius(mm)	20D(short Term),10D(Long Term)	
13	Operating Temperature	-20°C to + 75°C	
14	Storage Temperature	-20°C to + 85°C	
15	Regulatory Compliances	All passive components should be RoHS complied. Declaration of – ROHS compliant should clearly be mentioned on data sheets of each Passive Components. The OEM must ensure full compliance with the RoHS Directive 2011/65/EU, as amended by Directive (EU) 2015/863, restricting the use of hazardous substances in electrical and electronic equipment.	
		The Proposed OEM should be CE Certified and its own manufacturing facility must adhere to ISO 14001:2015,ISO 45001:2018, ISO 27001:2022 and ESG Silver Rated. Valid certificates for all the above standards and ratings must be enclosed with the proposal to support compliance verification.	
		The proposed OEM must be an active member of both the TIA and BICSI. Additionally, the OEM shall have on its Indian payroll at least vendor natural certified professional holding CDCP, CFOS, ITIL or PMI-PMP credentials. The services of this professional must be available for consultation and direct involvement in the design, deployment, and oversight of this project. Valid Certificates of the OEM employees along with a letter from the OEM HR Department verifying that the employees are in fact sitting in India should be submitted. (Details must be provided).	
		The OEM must be a legal entity registered in India under the Companies Act, 1956, having registered office and operations in India. The OEM of passive network components to be quoted by the bidder should be present in India for last 10 Years or more. (Document proof Required- Proof of Incorporation should be attached) The company should have a Valid PAN and a valid (GSTN)	
	SITC of Networking Horizontal Armoured Outdoor CAT6 U/UTP Cable having minimum technical specification as mentioned below: -		
S. No.	Parameter	Specification	Compliance Yes / No
1	Quoted Make	To be Specified by the Bidder	
2	Quoted Model	To be Specified by the Bidder	
3	Type	Category 6 U/UTP ECCS Armoured Cable	

4	Type	23 AWG solid bare Electrolytic Grade Copper Conductors, Unshielded Twisted 4 Pair, PVC, Electrolytic Chrome-coated Corrugated Steel Tape Armouring covered with PE Outer Sheath. Category 6, confirming to ANSI-TIA 568.2-D for Category 6 & ISO/IEC 11801 for Class E.	
5	Support	Supports Gigabit Ethernet (1000BaseT) standard requirement for Applications such as High Speed Data, Voice & Video Signals over LANs, Server Farms and Other Bandwidth Sensitive Outdoor Applications.	
6	Conductors	Solid bare copper 23 AWG	
7	Pair Separator	+ Shape Spline	
8	Packing	Box of 305 meters	
9	Cable Outer Diameter	10.5 + 0.5 mm	
10	Outer Sheath	PE	
11	Outer Sheath Colour	Black	
12	Delay Skew	< 45 ns	
13	Conductor Resistance	$\leq 9.38 \Omega /100 \text{ m}$	
14	Mutual Capacitance	<5.6nF/100m	
15	Resistance Unbalance	5% Max	
16	Capacitance Unbalance	330 pF/100 m	
17	Bend Radius	8 X Cable Diameter	
18	Pulling Force	25 lb	
19	Nom. Velocity of Propagation	0.69	
19	Temperature Range of Operation	-20 °C to +70 °C	
20	Temperature Range of Installation	0 °C to +50 °C	
21	Maximum propagation delay @250MHz	490ns/90m	
23	RoHS Compliant	Compliant as per RoHS Directive 2011/65/EU and (EU) 2015/863	
24	Standardization	ISO/IEC 11801 ed. 2.2; IEC 61156-5 2nd Ed.; EN 50173-1; EN 50288-6-1; TIA 568-C.2; Fire rating: IEC 60332-1; IEC 60754-2; IEC 61034; 1-250 MHz (Minimum),	
25	Regulatory Compliance's	The Proposed OEM should be CE Certified and its own manufacturing facility must adhere to ISO 14001:2015, ISO 45001:2018, ISO 27001:2022 and ESG Silver Rated. Valid certificates for all the above standards and ratings must be enclosed with the proposal to support compliance verification.	
		There should be minimum 25 years extended product warranty and Application Assurance as a part of certification of entire installed cabling system	
		The proposed OEM must be an active member of both the TIA and BICSI. Additionally, the OEM shall have on its Indian payroll at least vendor neutral certified professional holding CDCP, CFOS, ITIL or PMI-PMP credentials. The services of this professional must be available for consultation and direct involvement in the design, deployment, and oversight of this project.	

		OEM should have its Manufacturing units, Components and Finished Goods Warehouse & R&D labs in India.	
	SITC of 24 Port, 1U Category 6 Unshielded Patch Panel, loaded having minimum technical specification as mentioned below :		
S. No.	Parameter	Specification	Compliance (Yes/No)
1	Quoted Make	To be Specified by the Bidder	
2	Quoted Model	To be Specified by the Bidder	
3	Type	24 Port, 1U Staggered Patch Panel, Unloaded - 1U	
4	Type	24 Port 1U loaded ZigZag / Staggered/straight Patch Panel The design reduces Alien Crosstalk to support IEEE 802.3an and ANSI/TIA 568.2-D.	
		Patch panels IDC (IDC of Information Outlet) Connectivity Snap in Type should be at rear end & RJ-45 jack on front panel, 19" rack mountable.	
		Patch panels Ports should be individually replaceable & Consistent port-to-port performance and includes grounding bolt	
5	Availability	Patch Panel should be available with 24 Ports in 1U	
6	Cable management	Straight Patch Panel with Staggered Information Outlet Slot that makes patch cord routing easier and eliminate the need for Horizontal Cable Management.	
7	Compatibility	Patch Panel should be able to accept Cat6A, Cat6 and Cat5e information outlets for backward and forward compatibility	
8	Height	1U (1.75")	
9	Storage Temperature Range	-40Deg C to +70 Deg C	
10	Operating Temperature range	-10Deg C to +60 Deg C	
11	Humidity	10% - 90% RH	
12	Colour and Material	Metal SPCC, Black, plastic inserts, Double layer - 1.5mm, provided with mini cable ties, cage nuts & rare cable management.	
13	Regulatory Compliances	Offered product should channel performance tested and verified in a 4-connector channel (or more), up to 550 MHz or higher, using an MTPL plug. Performance testing shall comply with IEEE 802.3bt, ANSI/TIA-568.2-D, and ISO/IEC 11801 standards. Testing must be conducted by a NABL or NRTL accredited laboratory. The part code must be clearly mentioned in the test report, which shall be submitted along with the bid. Additionally, the product must be UL Listed, and the relevant UL certification document must be provided.	
		Shall be UL Listed and tested for corrosion as per ASTM B117: 2019. (Relevant Document to be shared)	

		All networking passive material (Fibber Cable, Copper Cables, Networking Racks and their connectivity components) should be from one OEM make only .	
		The OEM must ensure full compliance with the RoHS Directive 2011/65/EU, as amended by Directive (EU) 2015/863, restricting the use of hazardous substances in electrical and electronic equipment. Furthermore, the OEM shall qualify as a Class 1 local supplier as defined under the Government of India's Public Procurement (Preference to Make in India) Order, thereby demonstrating a strong commitment to indigenous manufacturing and national self-reliance initiatives.	
	SITC of Cat6 Unshielded LSZH Patch Cords for Work Stations & Rack End having minimum technical specification as mentioned below :		
S. No.	Parameter	Specification	Compliance (Yes/No)
1	Type	CAT6 Unshielded LSZH rated Modular Cord shall meet and exceed channel specification of ANSI/TIA 568.2-D, ISO/IEC 11801 Class E, IEC 61156-6 and IEC 61935-2 Standard.	
2	Conductor	Flexible Stranded Bare Copper, 24 AWG	
3	Insulation / Diameter	PE (0.95 ± 0.05 mm)	
4	Feature	Transparent Strain Relief easy latch-cover boot design for easy depression	
		Backward compatible for easy integration with any network component that uses a RJ45 connection	
5	Length	2 / 3 / 5 Meter & Customized length	
6	Connectors	High Grade 50 μ gold plated RJ45 Connectors	
7	Conductor Material	Stranded Bare Copper	
8	Storage Temperature Range :	-20 °C to +70°C	
9	Cable Diameter	5.86 ± 0.3mm	
10	Regulatory Compliances	Should be ETL channel performance tested on 04-Connector channel or more, tested up to 550Mhz or more with an MTPL Plug as per ANSI/TIA-568.2-D (Part Code to be mentioned in report and should be submitted along with bid) and UL Listed (Relevant Document to be shared)	
		Should be ETL tested for a cabling configuration performance to the requirements of IEEE Std 802.3 for Type 4 remote powering applications	
		The Proposed OEM should be CE Certified and its own manufacturing facility must adhere to ISO 14001:2015,ISO 45001:2018, ISO 27001:2022 and ESG Silver Rated. Valid certificates for all the above standards and ratings must be enclosed with the proposal to support compliance verification.	
		Offered OEM should a minimum on 01 patent in their name. All Related documents to be submitted.	
11	Test Reports	OEM factory test reports must be provided.	

12	Make & Model	Bidder to specify	
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Technical Specification Of 16TB Enterprises HDD

Sl. No.	Description	Specification	Compliance Yes / No
1	Capacity	16TB or Better	
	FEATURES		
2	Helium Sealed-Drive Design	Yes	
3	Conventional Magnetic Recording (CMR)	Yes	
4	Super Parity	Yes	
5	Power Choice Idle Power Technology	Yes	
6	Power Balance Power/Performance Technology	Yes	
7	Hot-Plug Support3	Yes	
8	Cache, Multi-segmented (MB)	512	
9	RSA 3072 Firmware Verification (SD&D)	Yes	
	RELIABILITY/DATA INTEGRITY		
10	Mean Time Between Failures (MTBF, hours)	2500000 hrs	
11	Reliability Rating at Full 24x7 Operation (AFR)	0.35%	
12	Non-recoverable Read Errors per Bits Read	<1 in 10E15	
13	Power-On Hours per Year (24x7)	8,760	
14	512e Sector Size (Bytes per Sector)	512	
15	4Kn Sector Size (Bytes per Sector)	4,096	
16	Limited Warranty (years)	5	
	PERFORMANCE		
17	Spindle Speed (RPM)	7,200 RPM	
18	Max. Sustained Transfer Rate OD (MB/s, MiB/s)	285/272	
19	Random Read/Write 4K QD16 WCD (IOPS)	168/550	
20	Interface Ports	Single	
21	Rotation Vibration @ 20-1500 Hz (rad/sec ²)	12.5	
22	POWER		
23	Idle A (W) Average	6.3	
24	Max Operating, Random Read/Write 4K/16Q (W)	8.9, 7.1	
25	Power Supply Requirements	+12 V and +5 V	
	ENVIRONMENTAL		
26	Temperature, Operating (°C) (Ambient/Drive Reported)	May/60	
27	Vibration, Non-operating: 2 to 500 Hz (Grms)	2.27	
28	Shock, Operating 2ms (Read/Write) (Gs)	40 Gs	
29	Shock, Nonoperating 2ms (Gs)	200	

TENDER SPECIFICATION FOR 1 KVA UPS			
S.No	Description	Detailed Specification	
	Make		
	Model		
1	Technology	True online double conversion technology UPS system with IGBT based rectifier / inverter	
2	Capacity	1 kVA / 0.8 kW	
4	Input Parameters:-		
a.	Voltage	230 VAC, 1 Phase 3 Wire	

b.	Voltage Range	160V to 300 VAC at full load, 110 to 300 VAC at 0 to 60 % load	
c.	Frequency	40 to 70 Hz	
d.	Power Factor at rated load	0.99 at full load and nominal input voltage	
e.	Current Harmonic Distortion	Less than 8% at full load and nominal input voltage	
f.	OVCD	Required (built-in)	
5	Output Parameters:-		
a.	Voltage	220/230/240 VAC +/- 1%, 1 Phase	
b.	Overload rating	105 to 110 % for 10 min, 110 to 130 % for 1 min, 130 to 150 % for 3 sec	
c.	Frequency	50 Hz +/- 0.1 Hz (in Battery Mode) +/- 4 Hz (in Sync Mode)	
d.	THD v	< 3 % for Linear Load ; < 5 % for Non Linear Load	
e.	Output waveform	Pure sinewave	
g.	Power Factor	0.8 PF	
h.	Overall Efficiency	88%	
6	Battery Parameters:-		
a.	Battery Type	Li Ion Battery	
b.	DC Voltage	36 VDC	
c.	Backup Time	60min.	
d.	Battery	18AH 36V or batter	
e.	Battery Rack & Connectors	Powder coated battery rack / stand to be provided	
f.	Charging Capacity	Min. 6.5Amp	
g.	Battery Deep Discharge Protection	Yes	
h.	Intelligent Battery Management	Yes	
i.	Transfer time	0 ms	
j.	Battery Operating Temperature	lithium-ion batteries operate between -20°C to 60°C	
7	Bypass:-		
a.	Static Bypass	Inbuilt	
b.	Transfer time	< 4 ms in Sync Mode	
8	Display:-		
a.	LCD Display	Input Voltage, Frequency	
		Output Voltage, Frequency, Load level	
		Battery Voltage	
		Fault Information	
		Over Load	
b.	UPS Parameter Setting	Output Voltage, Frequency, Bypass Enable / Disable, Voltage	
c.	Protection	Input High / Low, Over Load, Short Circuit, Over Temperature, Battery Over Charge, Surge Protection	
d.	Audible Alarm	Charger Fault, Battery Mode, Low Battery, Battery Not Connected, Battery Fault, Over Temperature, Over Load, Bypass Mode	
9	Other Features:-		
a.	Cold Start, Auto Restart Generator Compatibility	Required	
b.			
c.	Connections	Input : Power Cord	

		Output : 3 Nos 6A 3Pin Indian Socket (ISI Marked)	
10	Communication:-		
a.	Communication Port	RS 232, USB	
b.	Additional Communication Slot (Optional - any one)	SNMP Card / Dry Contact Card / Modbus Card	
11	Panel & Packing:-		
a.	Ingress Protection	IP20	
b.	Cooling	Forced Air Cooling	
e.	Packing	Carton Box	
f.	User Manual	To be Provide	
12	Environment:-		
a.	Noise Level	< 50 dB at 1 meter distance	
b.	Operating Temperature	0 to 40 Deg C at full load, upto 45 Deg C derating on UPS Capacity (< 80 % load)	
c.	Storage Temperature	-10 to 50 Deg C or better	
d.	Humidity	20 to 90 % or better	
	Test Report / Certificates:-	QMS: As per ISO 9001: 2015 EMS: As per ISO 14001: 2015 ISO 45001: 2018, TL9000 Factory calibration lab of manufacturer shall be NABL accredited in India. ROHS	
e.	Turnover of the OEM	OEM should be minimum 500Cr per year for the last 3 years.	
		OEM Present in India 10 Years or above (Bidder Must Submit OEM Incorporation Certificate)	
		OEM Present in Consign State minimum 3 Year or More (Bidder Must Submit 3 Pages GST Registration) for easy and quick service support. And OEM Must have own service Engineer in the consignee state for better support, details must be provided by the Bidder on OEM Letter Head.	
	OEM Experience Proof (PO Copy from Govt Dept/PSU/Corporate Companies/ OEM to SI to Govt	OEM must have executed one order of minimum 6000 numbers of Minimum rating of 1KVA On Line UPS system in the last 5 Financial years or 2 PO's of 4000 thousand numbers each of Minimum rating of 1KVA On Line UPS system in the last 5 Financial years in the last 5 financial years or 3 PO's of 3000 thousand number of Minimum rating of 1KVA On Line UPS system in the last 5 Financial years	
	Authorised letter from OEM	Authorised letter with digital signature from OEM mentioning tender number shall be attached with the tender.	

Sl.No.	Minimum Technical Specifications of 10KVa Online UPS		Compliance Yes / No
1	Capacity (in kVA / kW)	10 kVA/10 kW 1-Phase Input / 1-Phase Output DSP Controlled IGBT Rectifier Rack & Tower Configurable UPS	

		(2U). ALL UPS must be from Same OEM and with SNMP card IPV6. :	
2	Input Voltage Range	100-280VAC (load dependent)	
3		175 ~280VAC (Full Load)	
5	Nominal Input Frequency	40- 70Hz	
6	Nominal Output voltage	200/208/220/230/240 VAC	
7	Output Port	Programmable Socket & Normal Socket	
7	O/P Voltage	O/P Voltage at 200V also.	
8	Inbuilt Battery Charger	Min.8 Amp	
9	Efficiency	Min 95%	
10	Over Load Capacity	≤105% Continuous;106-125% for 5min.;126% - 150% for 1min, >150% for 500ms	
11	LCD Display	Yes	
12	Li Ion Battery for 60min.(At 50% Load)	240V and not less than 25Ah	
(a)	Technical Parameters	The battery pack should be made of lithium phosphate (LFP). The cell should be BIS certified.	
		The product is a "Make in India" product.	
		The battery pack should be with Fire Retardant system.	
		Live performance monitoring unified dashboard system for all installations, safety and malfunction alerts by email and SMS.	
		Minimum number of cycles is 3000 cycles at 80% DOD .	
	Battery Operating Temperature	lithium-ion batteries operate between -20°C to 60°C	
(b)	Certification	The cell should be UL 1973/UL 1642 certified.	
(c)		The cell should be UN 38.3 certified.	
(d)		The cell should be IEC 62619 certified.	
(e)	BMS	The BMS should be a smart BMS with cell and battery pack monitoring with software interface, including communication mode RS485/UART & Bluetooth.	
(f)	Operating temperature range	Charging Temperature: 0 to 45° C	
13	Battery Bank Voltage	192 VDC or more.	
14	Protection	IP-20	
15	USB Port should be available	Yes	
16	RS232, RS485, REPO & Dry Contact Port	Yes	
17	VAPT	The Offered SNMP (Simple Network Management Protocol) Solution shall be Fully VAPT (Vulnerability Assessment & Penetration Testing) compliant , ensuring that it meets all required security standards and does not contain any vulnerabilities that could compromise the network or system integrity. The bidder must provide a valid VAPT Compliance certificate / report from a CERT-IN empanelled CERT-IN empanelled agency .	
18	Operating Temp	0-55 °C with derating	
19	ECO Mode should be available	Yes	
20	Manufacturer	QMS: As per ISO 9001: 2015	

		EMS: As per ISO 14001: 2004	
		ISO 45001: 2018 , TL9000 Factory should be NABL Certified .	
21	Product Safety Certifications	CE & ROHS (Mandatory), SNMP card should be VAPT certified.	
		5 Years Warranty for UPS & 5 year on Battery.	
22		OEM Turnover 500Crores for last 3 years, OEM must have executed one order of minimum 6000 numbers of Minimum rating of 1-10KVA On Line UPS system in the last 5 Financial years or 2 PO's of 4000 thousand numbers each of Minimum rating of 1-10KVA On Line UPS system in the last 5 Financial years in the last 5 financial years or 3 PO's of 3000 thousand number of Minimum rating of 1-10KVA On Line UPS system in the last 5 Financial years	

APPENDIX - VII: BILL OF QUANTITY

SL. No.	ITEMS	Unit	Qty	Unit Cost	Total Price
1	8MP V/F Bullet Camera for surveillance	Nos	30		
2	5MP V/F Bullet Camera for surveillance	Nos	250		
3	5MP 45x PTZ Camera for surveillance	Nos	20		
4	Video Management Software Base Licence	Set	01		
5	Video Management Software channel Licences	Set	600		
6	Video Recoding Server	Set	2		
7	Failover and Management Server	Set	3		
8	16TB Surveillance Enterprises HDD	Nos	30		
9	Distribution Switches 26-Port 10G Stackable L3 Managed Aggregation Switch with 6 25G Slots	Nos	6		
10	Supply of Network Management System with channel license	Set	1		
11	Hardware Controller for Centralized Management Hardware Device with manage upto 200 Switches	Nos	2		
12	24-Port 25G Stackable L3 Managed Aggregation/Core Switch with 4 100G	Nos	4		
13	24-Port Gigabit Stackable L3 Managed Switch with 4 10G Slots	Nos	1		
14	100G QSFP28 Direct Attach Copper Cable	Nos	2		
15	Field Industrial Access Switch DIN Rail 10-Port Gigabit Industrial Easy Managed Switch with 6-Port PoE+ and 2-Port PoE++	Nos	116		
16	24v 10A Industrial Power supply for Poe Switch	Nos	232		

17	Fully Loaded LIU/FDB For OFC terminations	Nos	136		
18	10GBase-LR SFP+ LC Transceiver 20 Kilometre	Nos	15		
19	10GBase-LR SFP+ LC Transceiver 80 Kilometre	Nos	40		
20	1000Base-LX SMF Mini GBIC Module Industrial Type	Nos	290		
21	24 Port, 1U Rack Mount Fibber Enclosure (LIU) including Splice Trays and Adapter	Nos	2		
22	Cat6 UTP Unshielded LSZH 5mtr Patch Cords for Work Stations & Rack	Nos	20		
23	3Mtr, Duplex Single mode 9/125 OS2 LSZH Fibber Patch Cable, SC-LC, LC-LC or SC-SC	Nos	110		
24	24 Port, 1U Category 6 Unshielded Patch Panel Full loaded	Nos	2		
25	Temperature and Dust controlled outdoor Enclosure For Poe Switch and UPS	Nos	110		
26	Firewall System with Licence	Nos	1		
27	Workstation i9 13th generations, 32GB Ram, 4GB Graphics, 512GB SSD, widows Professional with keyboard, mouse and all as per solution requirements	Nos	4		
28	Supply & Laying of 6 core Armour single mode Optical Fibber Cable with Termination	Meter	40,000		
29	supply and Laying Outdoor of Cat6 UTP Network Cable with 25mm PVC pipe	Meter	8,000		
30	Supply & Overhead Laying of 3Core 1.5sqmm Armoured Copper power HDPE pipe and termination	Meter	5580		
31	SPD (Surge Protector Device) For every outdoor enclosure	Nos	140		
32	Supply 10kva Online Rack mountable UPS with two hours battery backup	Nos	2		

33	1 KVA Online UPS with 30min battery Backup	Nos	110		
34	IP66 ABS Junction Box 4x4 with hose and U Clamp	Nos	410		
35	3Mtr GI Hexagon/Octagon Tubular Pole with foundation plate, bolt & earthing for Camera	Nos	89		
36	Installation & Commissioning of CCTV Cameras	Nos	300		
37	Installation & Commissioning of Video Management Software	Lumsum	1		
38	Installation and Commissioning of Network Management System 1	Lumsum	1		
39	Installation and Commissioning of Server	Lumsum	1		
40	Installation & Commissioning of 10kva Online Rack mountable UPS with two hours battery backup	Nos	2		
41	Installation & Commissioning of 1 KVA Online UPS with 30min battery Backup	Nos	110		
42	Installation and Commissioning of Other Network Devices/Equipment	Lumsum	1		
43	1st Year O&M(After DLP)	Lumsum	1		
44	2nd Year O&M	Lumsum	1		
45	3rd Year O&M	Lumsum	1		
46	4th Year O&M	Lumsum	1		