

**REQUEST FOR PROPOSAL FOR SELECTION OF AGENCY
FOR
EXPANSION OF UNIFIED COMMAND & CONTROL
PLATFORM BASED CCTV SURVEILLANCE & ITMS
SYSTEM TO TALCHER TOWN WITH INTEGRATION OF
DPO ANGUL CENTRAL COMMAND PLATFORM**

RFP NO - xxxxxx/2026-27



**The Executive Officer
Talcher Municipality**
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The purpose of this RFP document is to provide the Bidder(s) with information to assist in the formulation of Proposals. This RFP document does not aim to hold all the information each Bidder may require. This RFP document may not be appropriate for all persons, and it is not possible for the Talcher Municipality, Odisha and its employees to consider the business/investment objectives, financial situation and particular needs of each Bidder who reads or uses this RFP document. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and where necessary obtain independent advice from appropriate sources. Talcher Municipality, Odisha and its employees make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the RFP document. Talcher Municipality, Odisha 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 the Bidding Documents.

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The issue of this RFP Documents does not imply that the Talcher Municipality, Odisha is bound to select a Bidder or to appoint the Selected Bidder or Service Provider for the Project and the Talcher Municipality, Odisha reserves the right to reject all or any of the Bidders or Bids 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, uploading, expenses associated with any demonstrations or presentations which may be required by Talcher Municipality, Odisha 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 Talcher Municipality, Odisha 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 Selection process. Talcher Municipality, Odisha may, in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP document.

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1. Instruction to the Bidder

1.1. Important Dates

S. No.	Events	Date & Time
1	RFP Release Date	4.00 PM 21/07/2026
3	Last date for submission of Bid	5:00 PM 03/08/2026
4	Technical bid opening	11:00 AM 04/08/2026
5	Financial Bid opening	To be Communicated

1.2. RFP Processing Fee

The bidder must furnish as part of the proposal, the required Tender fee amounting to Rs.11800/- (Rupees Eleven thousand Eight hundred Only) online on e-Procurement portal as prescribed in the e-NIT failing which the bid will be rejected.

1.3. Earnest Money Deposit (EMD) / Bid Security

- a. The Bidder shall furnish as part of its Bid, Earnest Money Deposit (EMD) amounting to the sum of INR 300000/- (Rupees Three lakh Only) online on e-procurement portal as per procedure described in the e-NIT BID ID No.2026_ORULB_136393
- b. Talcher Municipality shall not be liable to pay any interest on the Earnest Money Deposit (EMD) so made and the same shall be interest free. EMD shall be non-transferable. Any Bid not accompanied by the Earnest Money Deposit (EMD) & RFP processing fee shall be rejected by Talcher Municipality as non- responsive*.
- c. The Earnest Money Deposit (EMD) of unsuccessful Bidder will be returned by Talcher Municipality, without any interest, within 60 days from the date of opening of the financial bid or when the Bidding process is cancelled by Talcher Municipality
- d. The successful Bidder's Earnest Money Deposit (EMD) will be returned, without any interest, upon such Successful Bidder signing the Agreement and furnishing the Performance Bank Guarantee in accordance with the provisions thereof.
- e. Talcher Municipality shall be entitled to forfeit and appropriate the Earnest Money Deposit (EMD) as mutually agreed genuine pre-estimated compensation/ Damages to Talcher Municipality in any of the events specified in. The Bidder, by submitting its Bid pursuant to this RFP, shall be deemed to have acknowledged and confirmed that Talcher Municipality will not suffer loss and damage on account of withdrawal of its Bid or for any other default by the Bidder during the Bid validity period. No relaxation of any kind on Earnest Money Deposit (EMD) shall be given to any Bidder.
- f. The Earnest Money Deposit (EMD) shall be forfeited and appropriated by Talcher Municipality as mutually agreed genuine pre-estimated compensation and Damages payable to Talcher Municipality for, inter alia, time, cost, and effort of Talcher Municipality without prejudice to any other right or remedy that may be available to TALCHER CITY hereunder or otherwise, under the following conditions.

- I. If a Bidder engages in a corrupt practice, fraudulent practice, coercive practice, undesirable practice, or restrictive practice as specified in this RFP.
 - II. If a Bidder withdraws its Bid during the period of Bid validity as specified in this RFP and as extended by the Bidder from time to time.
 - III. In the case of successful Bidder, fails within the specified time limit: –
 - a. to sign the Agreement and/or
 - b. to furnish the Performance Bank Guarantee within the period prescribed in the Contract Agreement; or
 - iv. In case the successful Bidder, having signed the Agreement, commits any breach thereof prior to furnishing the Performance Bank Guarantee.
- g. **EMD Exemption:** MSME Registered bidders are exempted on EMD. The bidders who are exempted to deposit Earnest Money Deposit (EMD) are required to attach copies of relevant documents evidencing such exemption granted, along with the Techno-Commercial Bid document while submitting. The Bidders, who does not submit EMD Fee claiming exemption but does not submit relevant documents, is ineligible for bidding and such bid shall be summarily rejected.

1.4. Performance Bank Guarantee:

Performance Bank Guarantee is governed for supplies and services as follows:

- I. The bidder shall carry out the services in conformity with the requirements of this RFP, generally accepted professional and technical norms relevant to such projects and to the satisfaction of Talcher Municipality.
- II. The Earnest Money Deposited at the time of bid submission would be given back to the selected bidder on payment of Performance Bank Guarantee.
- III. The selected bidder shall furnish Performance Bank Guarantee as follows:
 - a. The successful bidder shall at his own expense, which may be in form of an unconditional and irrevocable bank guarantee for 3% of the contract value. The agency shall maintain a valid and binding Performance Security for a period of 3 (three) months after the expiry of the Total Contract Period of 3 (Three) years.
 - b. The Performance Bank Guarantee should have been issued by a Scheduled Nationalized Bank or Commercial Bank in India. For the avoidance of doubt, Scheduled Bank shall mean a bank as defined under Section 2(e) of the Reserve Bank of India Act, 1934.
- IV. The Performance Bank Guarantee should be furnished within 15 Business Days from the date of issue of Letter of Intent (LOI).
- V. The Performance Bank Guarantee may be discharged/ returned by Talcher Municipality upon being satisfied that there has been due performance of the

obligations of the successful bidder under the contract for the entire project duration. However, no interest shall be payable on the Performance Bank Guarantee.

VI. Talcher Municipality shall also be entitled to make recoveries from the Performance Bank Guarantee on the following grounds:

- a. Any amount imposed as a fine by Talcher Municipality for irregularities committed by the successful bidder.
- b. Any amount which Talcher Municipality becomes liable to the Government /Third party on behalf of any default of the bidder or any of his/her/their agent/ employees or staff.
- c. Any payment/fine made under the order/judgment of any court/consumer forum or law enforcing agency or any person working on his behalf.
- d. Any other outstanding amount.

VII. Once the amount under this clause is debited, the bidder shall reimburse the Performance Bank Guarantee to the extent the amount is debited within 15 days of such debit by Talcher Municipality failing which it will be treated as breach of agreement and may lead to termination of agreement with forfeiture of all amounts including interest free Performance Bank Guarantee in favor of Talcher Municipality

1.5: Special conditions

Solution Components Overview

Bidders are requested to carefully take note of the following requirements pertaining to the implementation of the Intelligent Integrated Security & Surveillance System for Talcher City.

The selected bidder shall be responsible for the successful design, supply, installation, integration, testing, commissioning, operation support, and maintenance of the proposed Intelligent Security System for Talcher City as detailed in this bid document.

Any functionality, component, service, accessory, software, hardware, integration element, or infrastructure requirement not explicitly mentioned in the bid document but deemed necessary for achieving seamless, stable, reliable, secure, and fully functional system operation shall be considered to be within the scope of the bidder without any additional financial implication to the Purchaser.

The bidder shall supply, install, configure, integrate, test, commission, and maintain all systems and components in accordance with the techno-functional specifications provided in Annexure-I and the Bill of Quantities (BOQ) provided in Annexure-III.

The scope of work shall broadly include, but not be limited to, the following:

1.5.1. Assessment, Scoping & Survey Study

- i. Conduct detailed field assessment, requirement analysis, site survey, feasibility study, and scoping exercise for the proposed project area.

- II. Prepare and submit a comprehensive Project Implementation Plan (PIP) including network architecture, deployment methodology, timelines, integration approach, and execution strategy.

1.5.2. Network Infrastructure & Connectivity

- I. Design, establish, and commission a dedicated, secure, stable, scalable, and reliable wired communication network for connectivity of all surveillance and field devices across the city and locations specified in the bid document.
- II. Ensure uninterrupted availability of surveillance feeds at the Data Centre and designated Viewing/Monitoring Centres on a 24x7 basis.

1.5.3. Detailed Technical Design & Finalization

Conduct detailed site surveys for finalization of:

- I. Technical architecture,
- II. Network topology,
- III. Final Bill of Quantities (BOQ),
- IV. Power and pole requirements,
- V. Implementation methodology,
- VI. Civil and electrical requirements, and
- VII. Integration plan.

1.5.4. Supply, Installation & Commissioning

- I. Design, Supply, Configuration, Installation, Integration, Testing, Commissioning, and Operationalization of all hardware, software, networking, storage, analytics, security, and associated infrastructure components as specified in the BOQ under Annexure-III.
- II. Ensure end-to-end system integration and interoperability of all components.

1.5.5. Local Support Office & Technical Manpower

- I. The selected bidder shall have an operational local office within the district limits or shall establish the same within four (04) weeks from the date of issuance of Letter of Intent (LoI).
- II. The local office shall be equipped with certified, trained, and experienced technical support personnel for ensuring smooth implementation, warranty support, and AMC operations during the contract period.

1.6. Important Notes to Bidders

a) General Understanding of Scope

It shall be clearly understood by all bidders that this tender is being invited for complete

supply, installation, integration, commissioning, and operationalization of the Unified Command & Control Platform Based Surveillance & ITMS System to ensure:

- I. Achievement of all required operational and performance parameters as envisaged in the project;
- II. Seamless integration of existing cameras installed earlier within Talcher City area with the proposed system through submission of a detailed integration feasibility plan;
- III. End-to-end integration of the newly established infrastructure with the existing Central Command & Control platform located at District Police Office (DPO), Angul.

b) Comprehensive Maintenance Obligation

The successful bidder shall execute a formal agreement committing to provide comprehensive warranty, technical support, and maintenance services for a period of five (05) years from the date of successful commissioning and acceptance of the project.

c) Scalability & Future Expansion

The proposed system architecture shall support future vertical and horizontal scalability. The bidder shall extend necessary technical support for all such expansions during the contract period whenever required by the Purchaser.

d) Ease of Operation & Technology Independence

Preference shall be accorded to solutions that maximize operational flexibility, ease of maintenance, ease of upgradation, interoperability, and technological independence for the end user beyond the contract period.

e) Open & Non-Proprietary Architecture

The hardware components proposed under the project shall not be mandatorily locked or restricted to any proprietary or vendor-specific software platform. The solution should support open standards and interoperability.

f) Ownership of Licenses & Warranties

All warranties, software licenses, subscriptions, entitlement certificates, software keys, and related documentation shall be procured in the name of the End User i.e. Talcher Municipality and shall be formally transferred at the time of project handover.

The Intellectual Property Rights (IPR) of the software shall remain with the respective OEM; however, all user licenses shall be issued in the name of the End User.

g) Integration of Existing Cameras & Analytics

The proposed solution shall support onboarding, integration, management, recording, monitoring, and analytics enablement for the existing surveillance cameras already installed within the project area.

h) Software Licensing Clarity

While quoting software and system licenses, the bidder shall clearly specify:

- I. Base licenses,
- II. Additional licenses

i) Responsibility for Completeness of Solution

Non-inclusion of any item, component, accessory, or service in the BOQ and/or price bid shall not relieve the bidder from the responsibility of providing the same if such item is essential for proper functioning, integration, stability, reliability, safety, or performance of the overall system.

However, acceptance or rejection of such claims shall rest solely with the Purchaser, and the decision of the Technical Evaluation Committee shall be final and binding.

j) Deviation Statement

Any deviation from the prescribed techno-functional specifications shall be clearly and explicitly mentioned by the bidder against the respective specification in the compliance sheet of the bid document.

k) Indicative Quantity of Cables & Poles

The quantities of poles, cables, and associated infrastructure indicated in the BOQ are tentative and based on preliminary estimations only. The bidder shall reassess and optimize the same during detailed survey and may propose justified deviations in the Detailed Project Report/Implementation Plan.

l) Network Availability Requirement

All surveillance and field equipment shall remain continuously connected through the proposed network infrastructure to ensure uninterrupted availability of live and recorded video feeds at the Data Centre and designated Monitoring Centres on a 24x7 basis.

m) Higher Specification Acceptance

Bidders are advised to carefully examine all specifications provided in the RFP document. In cases where a quoted product does not exactly match the prescribed specification, bidders may offer products with equivalent or superior specifications, subject to compliance with functional requirements and approval of the Technical Evaluation Committee.

n) Electricity Connection to Field Locations

Provisioning of electrical power connectivity at all field locations, including coordination, installation, and commissioning of required electrical infrastructure, shall be within the scope of the bidder.

2. Evaluation Criteria & Bid Process

2.1 Preamble

The evaluation process has been designed to ensure selection of a technically competent, financially sound, and experienced system integrator capable of implementing and sustaining a cutting-edge, scalable, and interoperable surveillance and city management solution.

⚠ IMPORTANT: Any bidder found submitting incomplete documents, forged/fabricated certificates, misleading information, concealed facts, or false declarations at any stage shall be summarily rejected. Such action may also lead to forfeiture of EMD, termination of contract (if awarded), and blacklisting/debarment from future tenders of Talcher Municipality and other Government organisations.

2.2 Evaluation Methodology — QCBS (70:30)

The bid evaluation shall be conducted under the Quality-cum-Cost Based Selection (QCBS) methodology as follows:

Component	Weightage	Minimum Qualifying Score
Technical Score (Ts)	70%	70 out of 100 Marks
Financial Score (Fs)	30%	N/A (Relative Scoring)
Selection Basis	Highest Combined Score (S)	$S = (Ts \times 0.70) + (Fs \times 0.30)$

Only bidders securing the minimum qualifying Technical Score of 70 marks (out of 100) shall be considered for opening of the Financial Bid. The bidder securing the Highest Combined Score (S) shall be declared the Selected Bidder.

2.3 Bid Evaluation Process — Stage-Wise

The evaluation of bids shall be conducted in five sequential stages as described below. Bidders failing at any stage shall not be considered for subsequent stages.

Stage	Phase	Description / Objective
Stage 1	Preliminary Scrutiny & Document Verification	Completeness & authenticity check of all bid documents
Stage 2	Pre-Qualification Evaluation (PQC)	Mandatory eligibility criteria verification — Pass/Fail basis
Stage 3	Technical Evaluation under QCBS	Detailed scoring against 100-mark Technical Scoring Matrix
Stage 4	Opening of Financial Bids	Only for bidders scoring ≥ 70 marks in Technical Evaluation

Stage	Phase	Description / Objective
Stage 5	Final QCBS Score Computation & Award	Combined score ($T_s \times 0.70 + F_s \times 0.30$); highest scorer selected

2.4 Stage 1: Preliminary Scrutiny & Document Verification

2.4.1 Scope

The Tender Evaluation Committee (TEC) shall initially scrutinize all bid submissions for completeness, authenticity, and compliance with mandatory requirements. This is a Go/ No-Go phase; bids failing preliminary scrutiny shall be rejected without further evaluation.

2.4.2 Checklist for Preliminary Scrutiny

- I. Completeness of bid submission — all volumes, sections, and annexures
- II. Submission of Tender Fee and EMD (or valid exemption certificate)
- III. Authorization documents — Power of Attorney / Board Resolution / Authorization Letter
- IV. Compliance with all mandatory eligibility conditions
- V. Availability and legibility of all supporting documents

2.4.3 Grounds for Summary Rejection at Stage 1

The following deficiencies shall result in summary rejection at preliminary scrutiny stage:

- I. Forged, fabricated, altered, or mutilated certificates or documents
- II. Misleading statements, concealment of facts, or material misrepresentation
- III. Fake OEM authorization or unauthorized compliance sheets
- IV. Material deviation from tender conditions without prior written approval
- V. Non-submission of Tender Fee or EMD without valid exemption
- VI. Unsigned / unstamped bid documents

2.5 Stage 2: Pre-Qualification Criteria (PQC) Evaluation

2.5.1 Evaluation Basis

Pre-Qualification Criteria shall be evaluated on a mandatory Pass/Fail basis. All criteria listed below are mandatory. Failure to satisfy even one criterion shall result in disqualification. No marks shall be awarded at this stage.

2.5.2 Pre-Qualification Criteria Matrix

Sl.	Criteria	Requirement Detail	Supporting Documents
1	Legal Entity & Operational Tenure	Registered entity under Companies Act / LLP Act / Partnership Act / Proprietorship; operational for minimum 10 years as on 31.03.2026	Certificate of Incorporation / Registration Certificate /

Sl.	Criteria	Requirement Detail	Supporting Documents
			MOA & AOA / LLP Agreement
2	PAN & GST Registration	Valid PAN and GST registration	Copy of PAN Card and GST Registration Certificate
3	Non-Blacklisting Declaration	Not blacklisted / banned / debarred by any Central/State Govt, PSU, ULB, or Govt Agency as on bid submission date	Notarized Affidavit on Non-Judicial Stamp Paper
4	Tender Fee, EMD & Authorization	Submission of Tender Processing Fee, EMD (if applicable), and Power of Attorney / Authorization Letter	Proof of EMD, Tender Fee Receipt, Power of Attorney
5	Office Presence in Odisha	Existing office/service presence in Odisha or undertaking to establish within 30 days of award	Office Address Proof / Undertaking on Company Letterhead
6	Manufacturer Authorization Form (MAF)	Valid MAF from OEMs for major key items — CCTV Cameras, Command & Control with VMS Software, Servers.	OEM Authorization Certificates
7	ISO Certifications	Valid ISO 9001:2015 AND ISO 20000:2018 or ISO 27001:2022	Copies of Valid ISO Certificates
8	OEM Compliance Sheets	Compliance sheet of major key items duly signed and stamped by respective OEMs	OEM Signed Compliance Sheets on respective letterheads
9	Minimum 5-Year Warranty	All major key items shall carry minimum 5-year warranty	Warranty Undertaking on company letterhead
10	Camera Certifications	All cameras must be STQC / BIS-ER, CE, and FCC certified	Relevant Product Certifications
11	MSME/NSIC Registration (if claiming EMD exemption)	Valid MSME/NSIC registration applicable for tendered category	MSME/NSIC Registration Certificate
12	Site Survey Report	Detailed site survey report after physical inspection of project area with Geo-coordinate and Fiber laying route.	Site Survey Report

Note: Mere submission of documents shall not guarantee qualification. Talcher Municipality reserves the right to independently verify the authenticity of all submitted documents from issuing authorities, OEMs, and clients.

2.6 Stage 3: Technical Qualification Criteria (TQC)

2.6.1 Applicability

Only bidders who successfully satisfy all Pre-Qualification Criteria shall be evaluated under the Technical Qualification Criteria. TQC serves as the gateway to detailed technical scoring.

2.6.2 Technical Qualification Criteria Matrix

Sl.	Criteria	Requirement Detail	Supporting Documents
1	Experience in Command & Control Platform based Surveillance Systems	Minimum 5 years' experience in IP-based CCTV, Unified C2 Platform with VMS, ITMS, Video Analytics for Government / Police / Smart Cities / ULBs / PSUs / Govt Undertakings	Work Orders / Agreements / Completion Certificates
2	Minimum 3 Similar Completed Projects	Minimum 03 similar projects in last 5 financial years (FY 2021-22 to FY 2025-26) with aggregate project value $\geq$ ₹15 Crores	Completion Certificates and Client References
3	Definition of Similar Projects	Supply, Installation, Testing, Commissioning, Integration, and Maintenance of Unified C2 Software-based Security Surveillance Systems for Government / Police / Smart Cities / ULBs / PSUs / Govt Undertakings	Documentary Proof
4	Completed Projects Only	Only fully completed projects shall be considered. Ongoing or partially completed projects are excluded	Completion / project handover Certificates
5	No Subcontractor Experience	Experience as subcontractor shall NOT be considered for qualification	Self-Declaration
6	Minimum Average Annual Turnover	Average Annual Turnover of minimum ₹20 Crores during FY 2022-23, 2023-24 & 2024-25	CA Certified Turnover Certificate and Audited Balance Sheets
7	Open Architecture & Third-Party Integration	Proposed Command & Control and VMS platform shall support integration with third-party analytics and open architecture-based interoperability	OEM Declaration and Compliance Documents

Sl.	Criteria	Requirement Detail	Supporting Documents
8	Certified Technical Manpower	Minimum 2 certified technical personnel for proposed Command & Control application and VMS software.	OEM Certificate of Technical personnel
9	Technical Architecture & Implementation Plan	Detailed technical architecture, methodology, integration approach for Central Command & Control Platform of DPO Angul and project execution timeline	Technical Proposal Document

2.7 Stage 4: Technical Evaluation — Scoring Matrix (100 Marks)

2.7.1 Technical Evaluation Framework

Technically qualified bidders shall be scored against the following parameters. The technical proposal shall be evaluated for a total of 100 marks. Only bidders securing a minimum of 70 marks shall qualify for financial bid opening.

2.7.2 Technical Scoring Matrix

Sl.	Evaluation Parameter	Scoring Criteria	Max Marks
1	Organizational Experience in Similar Projects	3 Projects = 10 Marks 4 or more Projects = 15 Marks	15
2	Minimum 05 years of Experience in successful implementation of Command & Control platform with VMS based Projects (State Govt / Central Govt / Police / Smart City / PSU)	2 Projects = 05 Marks 3 or more Projects = 10 Marks	10
3	Experience in city surveillance with ITMS implementation	1 no Project = 05 Marks ≥2 nos Project= 10 Marks	10
4	Implementation of AI Video Analytics on Unified Command & Control Platform	AI Video Analytics Integration = 05 Marks AI-based Incident Management = 05 Marks	10
5	Average Annual Turnover (FY 2022-23, 2023-24 & 2024-25)	₹20 Cr = 05 Marks More than ₹20 Cr = 10 Marks	10
7	OEM Certifications	02 OEM Certified Engineer = 5 Marks 03 or more OEM Certified Engineer =10 Marks	10
8	Quality Standards	ISO 9001 = 05 Marks	15

Sl.	Evaluation Parameter	Scoring Criteria	Max Marks
		ISO 20000 = 05 Marks ISO 27001 = 05 Marks	
9	Presentation on Methodology, Architecture & Integration Approach	Technical Architecture, Cyber Security, Redundancy, Integration Methodology, Scalability, SLA & Implementation Plan	20
	TOTAL TECHNICAL SCORE		100

Minimum Qualifying Technical Score: 70 out of 100 Marks. Bidders scoring below 70 marks shall be disqualified and their financial bids shall NOT be opened.

2.8. Stage 5: Financial Evaluation & Final QCBS Score

2.8.1 Opening of Financial Bids

Financial bids shall be opened ONLY for bidders who qualify technically (scoring ≥ 70 marks). The commercial bids of technically disqualified bidders shall remain unopened and shall be returned.

2.8.2 Financial Scoring & QCBS Calculation Formulae

Financial Score Formula $F_s = 100 \times (F_{min} / F_i)$ Fmin = Lowest Financial Quote Fi = Bidder's Quote	Final QCBS Score Formula $S = (T_s \times 0.70) + (F_s \times 0.30)$ Ts = Technical Score Fs = Financial Score
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2.8.3 Variable Definitions

- S = Final Combined QCBS Score of the bidder
- Ts = Technical Score of the bidder (out of 100)
- Fs = Financial Score of the bidder (relative; L1 = 100)
- Fmin = Lowest evaluated financial quote among qualified bidders
- Fi = Financial quote of the bidder under evaluation

2.8.4 Selection Criteria

The bidder obtaining the Highest Combined Score (S) shall be declared the Selected Bidder / L1 Bidder and recommended for Award of Contract.

2.9 Important Conditions & Safeguards

2.9.1 Verification Rights

- Talcher Municipality reserves the right to independently verify the authenticity of all submitted documents from issuing authorities, OEMs, and clients at any stage.
- The decision of the Tender Evaluation Committee regarding qualification / disqualification shall be final and binding.

- III. Talcher Municipality reserves the right to accept or reject any or all bids without assigning any reason thereof.

2.9.2 Anti-Corruption & Integrity Safeguards

Any attempt to influence the evaluation process, directly or indirectly, through officials, employees, or representatives of the purchaser shall lead to IMMEDIATE DISQUALIFICATION without prior notice. Legal proceedings may also be initiated.

2.9.3 Consequences of Misrepresentation

Submission of forged, fabricated, altered, or misleading documents/information shall result in all of the following:

- I. Rejection of bid at any stage of evaluation
- II. Forfeiture of EMD / Security Deposit
- III. Termination of Contract (if awarded)
- IV. Initiation of legal proceedings under applicable laws
- V. Blacklisting / Debarment from participation in any future tender of Talcher Municipality and other Government organisations

3. Purchaser's Right to Vary Scope of Contract at the time of Award

- i. The Purchaser may at any time, by a written order given to the Bidder, make changes to the scope of the Contract.
- ii. If any such change causes an increase or decrease in the cost of, or the time required for the Bidder's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Value or time schedule, or both, with the consent of the Bidder and the Contract shall accordingly be amended.

4. Purchaser's Right to Accept and Reject Bids

- i. The Purchaser reserves the right to accept any bid, and to annul the tender process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder (s) or any obligation to inform the affected Bidder (s) of the grounds for the Purchaser's action.
- ii. The Purchaser reserves the right to negotiate the commercials with the selected Bidder and seek revised Commercial bid.

5. Notification of Award

- i. Prior to the expiration of the period of bid validity the Purchaser will notify the successful Bidder in writing that its bid has been accepted. The Bidder shall provide his acceptance within 7 days of such notification.
- ii. The notification of award and will constitute the formation of the Contract.
- iii. Upon the successful Bidder's furnishing of performance security the Purchaser may notify each unsuccessful Bidder and will discharge their EMD, if deposited.

6. Signing of Contract

The successful Bidder shall sign the contract within 5 days of submission of Performance Bank Guarantee.

7. Service Level Agreement (SLA)

- I. The Bidder should meet the following SLAs during the warranty period however, a separate SLA agreement will be executed with a successful Bidder when the project is awarded and accepted.
- II. The SLA is designed for rapid response to mission critical service, hardware, DC and software application emergency. The time between the initial request for service and the time a technical person respond to the request should not exceed 1 hour. The Resolution for permanent solution to an emergency should be within 12 hours.
- III. In case of complete system breakdown, the resolution time should be less than 30min. and resolution should be less than 1 hour.
- IV. The Service level agreement would be valid for the complete period of contract. This SLA may be reviewed and revised according to the procedure detailed in SLA Change Control Mechanism.

8. Penalty

- I. The penalties to be imposed at any stage under this bid are:
- II. Imposition of liquidated damages
- III. Forfeiture of performance security
- IV. Cancellation of Purchase Order and termination of the contract
- V. Failure to produce the requisite certificates after claiming to possess such certificates or concealment or misrepresentation of facts will not only lead to rejection of bids in the first round itself and/or may lead to forfeiture of performance security as well as result in derecognition/ debarment of the bidder.
- VI. The penalties to be imposed on the bidder, at any stage, will be decided on the basis of the violations of number of bid conditions specifically mentioned in the bid document as that leading to forfeiture of Performance Security or leading to derecognition /debarment.
- VII. Any unexcused delay by the successful bidder in maintaining its contractual obligations towards delivery of goods and performance of services shall render the successful bidder liable to any or all of the following sanctions:

SI No	Services	Expected Service Level	Service Level Penalty
1	Deployment of all requirements as per scope of work and Milestone	Within the timeline	1.5% of Contract value Due, if the successful

SI No	Services	Expected Service Level	Service Level Penalty
	Deliverables for project after signing the Contract with TALCHER CITY or any subsequent requirement from TALCHER CITY during the Contract period.	mentioned in Milestone Deliverables	bidder not matched with Deliverable mentioned in Clause no (19).
2	Submission of all monthly status reports or deliverables as per the agreed timelines mentioned in Milestone Deliverables (Clause No-19)	Within 1 st week of Succeeding month or as per agreed Timeline.	0.5% of Contract value as mentioned in Milestone deliverables mentioned in Clause no (19).
Note : For the purpose of recovery of penalty imposed, the penalty amount will be adjusted against the contract or performance security made by Service Provider.			

9. Resolution of Disputes

If dispute or difference of any kind, shall arise between the Tender Inviting Authority and the successful bidder in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultations.

10. Arbitration, Applicable Law & Jurisdiction of Courts

- I. Except as otherwise provided elsewhere in the contract, if any dispute, difference, question, or disagreement arises between the parties hereto or their respective representatives or assignees, at any time in connection with construction, meaning, operation, effect, interpretation or out of the contract or breach thereof, the same shall be decided by Sole Arbitrator to be appointed by Talcher Municipality.
- II. The Arbitral Tribunal shall give reasoned award and the same shall be final, conclusive, and binding on the parties. The venue of the arbitration shall be Bhubaneswar and language will be English. Fees of the Arbitrator and expenses incidental to the arbitration proceedings shall be borne equally by the parties. Subject to as aforesaid, the provisions of Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment in lieu thereof shall apply to the arbitration proceedings under this Clause.
 - a. Subject to above, the Courts in Talcher alone shall have jurisdiction in this matter.
 - b. The contract shall be governed by and interpreted in accordance with the laws of India for the time being in force.
 - c. All disputes arising out of this bid will be subject to the jurisdiction of courts of law in Talcher / High Court of Orissa.

11. Force Majeure

- I. For purposes of this clause, Force Majeure (FM) means extraordinary events or circumstance beyond human control such as an event described as an act of God (like a natural calamity) or events such as a war, strike, riots, crimes (but not

including negligence or wrong-doing, predictable/seasonal rain and any other events specifically excluded in the clause).

- II. An FM clause in the contract frees both parties from contractual liability or obligation when prevented by such events from fulfilling their obligations under the contract. An FM clause does not excuse a party's non-performance entirely, but only suspends it for the duration of the FM. The firm has to give notice of FM as soon as it occurs (within 7 days) and it cannot be claimed ex-post facto.
- III. There may be a FM situation affecting the purchase organization only. In such a situation, the purchase organization is to communicate with the supplier along similar lines as above for further necessary action. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of FM for a period exceeding 60(Sixty) days, either party may at its option terminate the contract without any financial repercussion on either side.
- IV. Notwithstanding the punitive provisions contained in the contract for delay or breach of contract, the supplier would not be liable for imposition of any such sanction so long as the delay and/ or failure of the supplier in fulfilling its obligations under the contract is the result of an event covered in the FM clause.

12. SCOPE OF WORK (SoW)

Expansion Of Unified Command & Control Platform Based CCTV Surveillance & Intelligent Traffic Management System (ITMS) To Talcher Town with Integration Of DPO Angul Central Command Center

12.1. Introduction & Project Overview

The district administration of Angul through Talcher Municipality, intends to implement a Unified Command & Control Platform (UCCP) based CCTV Surveillance and Intelligent Traffic Management System (ITMS) covering selected strategic locations of Talcher Town. This initiative is a strategic extension of the Central Command & Control infrastructure already established at the DPO, Angul, and aims to bring technologically advanced, AI-driven public safety and traffic enforcement capabilities to the industrial township of Talcher.

The project shall encompass the deployment of an integrated network of EDGE-AI-based IP surveillance cameras, PTZ cameras, Facial Recognition System (FRS) cameras, Vehicle Number Plate Recognition (VNPR) sensors, IP Public Address (PA) systems, advanced networking infrastructure, and a locally hosted Command & Control Center at Talcher Police Station — all federated and integrated with the DPO Angul Central Command & Control Platform for unified, district-wide situational awareness.

⚠ NOTE: The scope described herein covers all supply, installation, commissioning, system integration, software licensing, and Operations & Maintenance (O&M) services for a period of five (5) years post Go-Live.

12.2. PROJECT SITE ENVIRONMENT – TALCHER TOWN

Talcher is a highly industrialised township situated in the Angul District of Odisha, India. It is home to some of the largest coal mining operations, thermal power plants, and heavy industrial facilities in the country. The unique and demanding environmental

profile of Talcher Town presents significant engineering challenges that must be addressed through appropriate equipment specifications, installation methodologies, and material selection.

12.2.1 Environmental & Industrial Context

i. Coal Mining & Mining Dust Environment

- a. Talcher houses the Mahanadi Coalfields Limited (MCL) – Talcher Coalfield, one of India’s largest open-cast and underground coal mining clusters, covering Jagannath, Lingaraj, Bharatpur, Hingula, and Balram mines.
- b. Constant coal extraction and transportation activities result in elevated levels of airborne coal dust and fine particulate matter (PM2.5 and PM10 exceeding standard limits).
- c. All outdoor field equipment must be rated IP66 or higher (preferably IP67/IP68) for protection against dust ingress and water jets.
- d. Camera lenses, enclosures, and outdoor rack cabinets must incorporate dust-sealed, self-cleaning or coated glass mechanisms to prevent performance degradation.

ii. Extreme Temperature Conditions

- a. Talcher experiences some of the harshest summer temperatures in Odisha, frequently touching 45°C–48°C in peak summer months (April–June).
- b. The presence of industrial heat from thermal power plants (NALCO, NTPC Kaniha, TPC, MCL captive power stations) further elevates the ambient temperature in localised zones.
- c. All outdoor hardware — cameras, PoE switches, outdoor racks, UPS systems — must be rated for operating temperature ranges of -10°C to +60°C.
- d. The Talcher Command & Control Room must be equipped with a redundant, 24x7 industrial-grade air-conditioning system with automatic failover.

iii. Heavy Vehicle Traffic & Vibration

- a. The NH-49, State Highways, and internal mine haul roads passing through Talcher carry extremely heavy vehicular traffic including 60-tonne coal dumpers, overloaded trucks, and heavy industrial transport vehicles round the clock.
- b. Camera poles, gantries, cantilever mounting structures, and foundation works must be engineered to withstand persistent vibration and mechanical stress from heavy vehicle movement.
- c. VNPR (Vehicle Number Plate Recognition) gantry structures at critical chowks and bypass points must be designed with vibration-damping foundations.
- d. All hardware fasteners, mounting brackets, and conduit clamps must be stainless steel or hot-dip galvanised to resist corrosion and loosening due to vibrations.

iv. Industrial Pollution, Fly Ash & Chemical Exposure

- a. NTPC Kaniha (3000 MW) and other thermal plants in the vicinity generate significant fly ash that settles on equipment surfaces, potentially degrading camera dome clarity and outdoor enclosure seals.

- b. Industries including NALCO (aluminum smelter and refinery), MCL (coal washing plants), and associated chemical units release sulfur compounds and corrosive gases.
- c. All outdoor metallic structures, racks, and equipment enclosures must be fabricated with anti-corrosion coatings, powder coating, or use of marine-grade stainless steel wherever feasible.
- d. Optical components must incorporate UV-resistant, anti-static, and anti-fog coatings.

v. Power Supply Instability

- a. Due to the heavy industrial load on the local power grid, Talcher frequently experiences voltage fluctuations, transients, and power outages despite being located adjacent to major power generation facilities.
- b. All field locations must be equipped with Online UPS (1 KVA) with suitable battery backup to ensure uninterrupted surveillance operation during outages.
- c. The Command & Control Room must have a 20 KVA Online UPS with extended battery rack providing a minimum of 4 hours backup.
- d. Surge Protection Devices (SPDs) must be installed on both power lines and PoE data lines at every field location to protect against lightning surges and transient overvoltages.

vi. Connectivity & Infrastructure Challenges

- a. The township's industrial roads and mine boundaries may impose constraints on underground cable laying due to existing pipelines, drainage, and mine infrastructure.
- b. Armoured optical fibre cables must be used for all backbone inter-location links to withstand the mechanical stress of heavy vehicle crossings and earth movements.
- c. All cable routes must include appropriate conduit protection with metallic/HDPE conduit in road crossings and exposed sections.

12.3. OBJECTIVES & STRATEGIC OUTCOMES

12.3.1 Primary Objectives

- I. Deployment of an AI-enabled, multi-layered CCTV surveillance network across 22 key locations in Talcher Town to enhance public safety and crime deterrence.
- II. Implementation of an Intelligent Traffic Management System (ITMS) with automated enforcement capabilities for traffic violations including triple riding, no-helmet etc.
- III. Integration of Vehicle Number Plate Recognition (VNPR) for real-time vehicle tracking, stolen vehicle detection, and e-Challan generation.
- IV. Deployment of a Facial Recognition System (FRS) at high-priority strategic critical chowks for suspect identification and missing persons tracking.
- V. Establishment of a localised Command & Control Centre at Talcher with a dedicated Video Wall and workstation infrastructure for real-time situational awareness at the field level.
- VI. Federation and integration of the Talcher C&C Centre with the DPO Angul Central Command & Control Platform for district-wide unified surveillance management.

- VII. Ensuring all critical alerts, alarms, and events generated at Talcher are simultaneously visible at the Talcher C&C Centre and notified in parallel to the DPO Angul Central Command Centre.

12.3.2 Strategic Outcomes

- i. A unified, federated surveillance network linking Talcher Town to DPO Angul, enabling district-level police commanders to have a holistic, real-time view of the entire surveillance infrastructure.
- ii. Reduction in incident response time through AI-triggered real-time alerts and automated alarm workflows.
- iii. Enhanced traffic discipline through automated e-Challan enforcement without manual intervention.
- iv. Stronger criminal investigation support through FRS-based identification and VNPR-based vehicle intelligence.
- v. A scalable, cyber-secure, and resilient surveillance backbone capable of future integration with the Odisha State CCTV network.

12.4. Scope Of Work

12.4.1 Camera Network Deployment – Field Locations

The Successful Bidder shall survey, design, supply, install, commission, and hand over a complete camera network spanning 25 designated locations across Talcher Town. The deployment shall include the following indicative camera distribution as per the BoQ:

SL.No	Location Name	Bullet Camera	PTZ	PA	FRS	VNPR
1	Bypass chowk	5	1	4	6	10
2	PM chowk	3	1			
3	Bahlar Chowk	4	1			
4	Baguabola Chowk	4				
5	ITI Chowk	3				
6	Mangala mandir Chowk	3				
7	Santhapada Bus Stand Chowk	3	1			
8	Rajabati Entry Point	2				
9	Bankadhara FL chowk	4	1			
10	Remua Chowk	3				
11	Bypass near canal road	2				
12	Prajamandal Chowk	3				
13	Sharma Chowk	4				
14	Handidhua Chowk	4				

15	Gandhi Chowk	3	1			
16	Talcher Railway Station	4	1			
17	Kamala Vihar Chowk	4				
18	Durga Mandir Chowk	2				
19	Ananda Bazar Chhak	4				
20	Medical Chhak	3				
21	Badadanda sahi Chowk	3				
22	DIG Office Chowk	3				
23	Talcher Busstand	4	1			
24	Bahlar Chowk	3	1			
25	Jayguru Chowk (Near SDPO Office / Control room)	3				
	Total	83	9	4	6	10

⚠ NOTE: The above locations and quantities are indicative. The actual deployment shall be finalised post joint site survey and feasibility assessment. Any variation shall be executed through a formal Change Order process under deviation clause of this RFP..

12.4.2 EDGE-AI Based IP Bullet Camera

The Successful Bidder shall supply, install, and commission a minimum of 74 units of AI-enabled 5-megapixel IP Bullet cameras with IR motorized varifocal lenses across all 22 designated field locations. The cameras shall serve as the primary surveillance layer for continuous video monitoring of road intersections, public spaces, and key approaches within Talcher Town.

- I. Cameras shall be equipped with EDGE-AI processing capability for on-device analytics including intrusion detection, loitering detection, crowd estimation, and object classification without dependency on a central analytics server.
- II. IR illumination capability of minimum 40–60 meters for effective night-time surveillance under zero-lux conditions.
- III. PoE (Power over Ethernet) supports simplify field wiring and enable power delivery through the optical fibre-PoE infrastructure.
- IV. Given Talcher's coal dust and industrial particulate environment, camera enclosures shall be rated minimum IP66, with UV and corrosion-resistant housing.
- V. Operating temperature range: -10°C to +60°C; humidity tolerance: 10%–90% non-condensing.
- VI. Cameras shall support ONVIF Profile S/G/T/M compliance for seamless integration with the VMS platform and meta data for best event-based trigger.

12.4.3 Edge-AI Based 5MP PTZ Cameras

Eight units of AI-enabled 5-megapixel PTZ (Pan-Tilt-Zoom) cameras shall be installed at primary chowks and high-density intersections with dynamic, operator-controlled and AI-directed monitoring capability.

- i. Minimum 30x optical zoom capability with auto-focus for identification at distance — critical given the wide, multi-lane intersections typical of Talcher’s heavy-vehicle-oriented road design.
- ii. Minimum 150-metre IR illumination range to enable clear night surveillance of large intersections.
- iii. Auto-tracking capability for following moving persons or vehicles of interest without manual intervention.
- iv. PoE-powered; housed in industrial-grade, dustproof, and temperature-resistant outdoor PTZ dome enclosures.
- v. The PTZ cameras shall be integrated with the UCCP platform to allow joystick and GUI-based control from both the Talcher C&C Centre and the DPO Angul Central Command & Control Platform.

12.4.4 Facial Recognition System (FRS) Cameras (6 Nos.)

FRS-capable IP bullet cameras shall be deployed at the highest-priority chowks. These cameras shall work in conjunction with the FRS Software & Hardware setup to enable real-time face matching against police watchlists, suspect databases, and missing persons records.

- I. FRS cameras shall capture high-resolution facial images from passing individuals and submit frames to the FRS analytics engine for real-time identification.
- II. The system shall generate instant alerts at the Talcher C&C Centre and simultaneously trigger push notifications at the DPO Angul Central Command Centre when a face-match is detected.
- III. FRS databases shall be maintainable and updatable by authorised police personnel with appropriate access control.
- IV. Given proximity to coal and dust-laden environments at Bypass Chowk, FRS camera lenses shall be fitted with auto-wiping or hydrophobic coatings to maintain optical clarity.
- V. The Successful Bidder shall supply and integrate FRS software, analytics server hardware, and complete commissioning as a turn-key setup (BoQ Item 46).

12.4.5 Vehicle Number Plate Recognition (VNPR) System

The VNPR system shall be deployed at four key locations to enable real-time vehicle number plate reading and tracking. Given the volume of heavy transport vehicles, coal trucks, and mixed traffic at these locations, the VNPR system must meet the following requirements:

- I. Edge-AI and Machine Learning based plate recognition with high-accuracy capture across multiple lanes simultaneously.

- II. Capability to read plates of heavy vehicles (dumpers, trucks) that may have dusty, soiled, or partially obscured plates — a critical requirement specific to Talcher’s mine traffic environment.
- III. Real-time matching against the State Vehicle Database, VAHAN/NIC integration, and police watchlists for stolen/blacklisted vehicles.
- IV. Integration with the e-Challan application for automated generation of traffic violation challans.
- V. Considering the heavy loaded vehicle movement, the VNPR sensors shall be mounted on dedicated VNPR heavy duty Cantilever Pole structures with vibration-resistant foundations at each deployment location.
- VI. VNPR Camera Sensor Connection Licenses shall be procured and activated for all VNPR deployments under the umbrella of DPO, Angul for seamless unification.

12.4.6 IP Public Address (PA) System

A 60W IP-based Public Address System shall be installed at four key to enable real-time public announcements, emergency broadcasts, and traffic management instructions from the Talcher C&C Centre and/or the DPO Angul Central Command & Control Platform.

- I. IP PA speakers shall be rated for outdoor industrial environments with minimum IP65 ingress protection and capable of delivering clear audio output despite ambient noise from heavy vehicle movements and industrial machinery.
- II. SIP License shall be procured for each PA unit, enabling integration with the UCCP platform.
- III. A Central SIP Integration License shall be implemented for unified PA management from the UCC platform, including scheduled announcements and emergency broadcast from both Talcher and Angul command points.
- IV. The PA system shall allow authorised operators at DPO Angul to broadcast announcements across all Talcher PA locations via the federated platform.

12.4.7 Networking, Fibre & Connectivity Infrastructure

12.4.7.1 Optical Fibre Cable (OFC) Backbone

- I. 6-Core Single-Mode Armored OFC shall be laid to create a ring topology backbone interconnecting all 22 field locations with the Talcher Command & Control Centre.
- II. The OFC shall be directly buried with armoured sheathing capable of withstanding the mechanical stress of heavy vehicle crossing points and the risk of earth movement in proximity to mining zones.
- III. 24-port LIUs shall be installed at field locations and the command room for fibre termination. LC-LC and SC-LC patch cords shall be used for cross-connection.
- IV. 1000Base 1310nm SM Transceiver Modules and 10G Transceiver Modules shall be deployed for fibre-to-Ethernet conversion at field switches and core switches respectively.

12.4.7.2 Network Switches

- I. Layer 3 Core Switches: 2 units of 24-port 1/10G SFP stackable fully managed L3 switches shall be installed at the Talcher Command Room as the core network backbone.
- II. L2 Outdoor Managed PoE Switches – 24 Port: Deployed at major chowks with multiple cameras and devices. These shall be installed inside water & dustproof outdoor racks.
- III. L2 Outdoor Managed PoE Switches – 8 Port: Deployed at individual camera pole locations for localised PoE distribution.
- IV. All field switches shall be rated for outdoor industrial deployment, with operating temperature ranges compatible with Talcher's extreme climate profile.

12.4.7.3 Outdoor Racks, Enclosures & Field Infrastructure

- I. Water & Dustproof Metal Outdoor Racks with PDU and fan arrangements shall be installed at field locations to house PoE switches, UPS, SPDs, and patch panels.
- II. Water & Dustproof Metal Outdoor Camera Back Boxes shall be used for mounting cameras, providing additional protection against Talcher's harsh environment.
- III. Camera Mounting Cantilevers shall be installed on CCTV poles at appropriate heights for optimal coverage angles at all locations.
- IV. All the field locations shall have dedicated heavy duty Pole structure for CCTV and VNPR with proper chemical earthing. Pole design shall account for wind loading and vibration from heavy vehicle traffic.

12.4.8 Power Supply & Surge Protection

- I. Online UPS of 1KVA with external battery shall be installed at every field rack to ensure uninterrupted operation during power outages. Battery backup minimum: 1 hour at full load.
- II. Online UPS of 20 KVA with external battery rack providing minimum 2-hour backup shall be installed at the Talcher Command & Control Room.
- III. Power-line Surge Protection Devices shall protect field equipment from lightning transients and voltage surges — a critical requirement given Talcher's open landscape and mine proximity.
- IV. PoE Line Surge Protection Devices shall be installed to protect cameras and PoE-powered devices from data-line transient surges.
- V. Successful bidder shall facilitate the necessary Electricity connection in the name of Talcher Municipality at all field locations with initial connection charges.
- VI. Server Room and Command Room electrical works including chemical earthing shall be executed as per applicable standards with certified electricians.

12.5. TALCHER COMMAND & CONTROL CENTRE

The Successful Bidder shall design, supply, install, and commission a functional Command & Control Centre within the designated space at the Talcher Police Station / Talcher Town Police premises. This Centre shall serve as the primary operational hub for all surveillance activities within Talcher Town and shall be fully integrated with the DPO Angul Central Command & Control Platform.

12.5.1 Server & Storage Infrastructure

- I. The Management, Recording, Mobile, ALPR, SQL Database, Failover & Plugin Servers with Federation & Redundancy capabilities, including Microsoft Server Licenses shall be deployed in a High-Availability (HA) configuration with automatic failover to ensure zero downtime.
- II. A Primary NAS – 12-Bay x 18TB SAS Storage with dual power supply for resilient video data storage, provisioning a minimum of 30 days of video retention for all 88 connected camera channels at appropriate quality settings.
- III. 2 units of Floor-Mount Heavy-Duty 42U Racks (800 x 1000 mm) with full accessories to house all server, storage, switch, UPS, and firewall equipment within the Command Room.

12.5.2 Operator Workstations

- I. High-Performance Workstations (Intel i7 14th Gen or higher, 32 GB RAM, 8 GB Graphics Card, 1 TB SSD, 2 TB HDD, Windows 11 Professional with dual monitor stand and 22inch FHD monitors) for operators to manage live surveillance, incidents, and event review.
- II. Cat 6 factory-made patch cords for all workstation and rack cross-connections within the Command Room.

12.5.3 Video Wall Display

- I. A large (2x2) Video Wall Display system with connectors, brackets, and installation accessories shall be provided for the Talcher C&C Centre to provide a large-format, multi-tile real-time surveillance display.
- II. Video Wall Controller shall manage the video wall display inputs, allowing operators to switch between camera feeds, maps, alert dashboards, and analytics views.

12.5.4 Cybersecurity Infrastructure

- I. Security High-End Firewalls in High-Availability configuration with 5-year subscription shall be deployed at the network perimeter of the Talcher C&C Centre to enforce access control and protect against external cyber threats.
- II. Ransomware Protection with Endpoint Security & Server Antivirus covering all servers and workstations shall be deployed and managed throughout the O&M period.

12.5.5 Environmental Control

An Industrial Air-Conditioning system for the Server Room configured for 24x7 continuous operation with automatic failover capability between primary and redundant units, maintaining internal temperature between 18°C and 22°C regardless of external ambient conditions at Talcher.

12.6. UNIFIED COMMAND & CONTROL PLATFORM – SOFTWARE & INTEGRATION

12.6.1 UCCP Software Platform

The Successful Bidder shall supply, install, configure, and commission a comprehensive Unified Command & Control (UCC) software platform, which shall serve as the single pane of glass for all surveillance, traffic management, and incident response operations. The platform shall include the following integrated modules:

- I. **Video Management Software (VMS):** Centralised live view, playback, recording management, and camera administration for all 88 connected camera channels. The VMS shall support multi-stream, multi-resolution recording and shall be accessible from both Talcher and Angul command nodes.
- II. **GIS Map Engine:** A geospatial mapping module displaying all cameras, VNPR sensors, PA systems, and field devices on an interactive GIS map of Talcher Town. The map shall show real-time device health status, alert locations, and incident overlays.
- III. **Public Announcement Application:** Integrated PA management within the UCC platform for scheduling, broadcasting, and logging all PA announcements from Talcher and Angul command nodes.
- IV. **Real-Time Alert / Alarm & Threat Level Management Engine:** An automated AI-driven alert management system that classifies and prioritises incoming alerts from cameras, VNPR sensors, and FRS into defined threat levels, routes them to appropriate personnel, and maintains an alert audit log.
- V. **Mobile & Web Applications:** Authorized police personnel shall be able to access live camera feeds, alerts, and incident information through secure mobile and web browser-based client applications from anywhere within the police network.

12.6.2 IP Camera Connection Licenses

The Successful Bidder should provide perpetual IP camera connection license for the UCCP/VMS platform, covering all deployed cameras. The license includes provision for all streams and analytics connections required for full-platform operation. The perpetual license should be independent of make, model of cameras so that in future other make & model camera can be integrated into the UCC platform without further license purchase.

12.6.3 VNPR & ITMS Enforcement Platform

- I. VNPR Camera Sensor Connection Licenses shall be procured for all VNPR lanes.
- II. e-Challan Application: An integrated e-challan module shall enable automated issuance of traffic violation challans based on VNPR and AI camera detections, linked to the State e-Challan portal and VAHAN database.
- III. Intelligent Traffic Enforcement License: Covering AI-based detection and enforcement of Triple Riding, No-Helmet usage, and Wrong-Way Driving violations for automated e-challan generation without manual intervention.

12.6.4 Mobile & Web Client Licenses

Mobile and Web Client Connection Licenses shall be procured to enable authorized police officers, supervisors, and incident response personnel to securely access the UCCP platform from field-deployed mobile devices and desktop web browsers within the police network.

12.7. INTEGRATION WITH DPO ANGUL CENTRAL COMMAND & CONTROL PLATFORM

A core and non-negotiable deliverable of this project is the seamless federation and integration of the Talcher UCCP node with the District Police Office (DPO), Angul's existing Central Command & Control Platform. This integration shall ensure that senior police leadership at DPO Angul has a holistic, district-wide view of the entire surveillance

infrastructure, while day-to-day operational management remains with the Talcher Command and Control Centre.

12.7.1 Federation Connectivity License

- I. The Federation Connectivity License shall be procured and configured to establish a secure, encrypted federation link between the Talcher UCCP node and the DPO Angul Central Command & Control Platform.
- II. The federation architecture shall enable the DPO Angul platform to access live and recorded video feeds from all Talcher cameras through the native VMS interface, without requiring a separate login or platform.
- III. Bandwidth management and QoS policies shall be implemented to ensure that the federation video traffic does not degrade local Talcher C&C operations.

12.7.2 Alert & Alarm Notification Architecture

The following alert routing architecture shall be implemented to ensure that all AI-generated alerts, VNPR detections, FRS matches, and operational alarms from Talcher are properly distributed:

Alert Routing: Talcher Primary / Angul Parallel Notification

- I. **PRIMARY ALERT LANDING:** All alerts and alarms generated by cameras, VNPR sensors, FRS, and PA systems at Talcher locations shall land at the Talcher Command & Control Centre as the first point of response.
- II. **PARALLEL NOTIFICATION TO DPO ANGUL:** Simultaneously, all alerts (particularly FRS face-match alerts, VNPR watchlist hits, high-priority AI anomaly detections, and PA system activations) shall trigger automated parallel notifications at the DPO Angul Central Command & Control Platform.
- III. **NOTIFICATION CHANNELS:** Notifications at DPO Angul shall be delivered via: on-screen alert pop-ups on the UCCP platform, audio alarm, mobile push notifications to authorised senior officers, and SMS/email escalation for high-priority events.
- IV. **ESCALATION PROTOCOL:** Unacknowledged alerts at Talcher beyond a configurable time threshold shall be automatically escalated to the DPO Angul command operators.
- V. **AUDIT & LOGGING:** All alerts, acknowledgements, and actions taken shall be logged with timestamps and operator identities in a tamper-proof audit trail accessible from both Talcher and Angul command nodes.

12.7.3 Unified Surveillance View at DPO Angul

- I. The DPO Angul Central Command Platform shall display all Talcher cameras on the GIS Map Engine alongside existing camera networks from other parts of Angul district.
- II. Senior officers at DPO Angul shall have the ability to call up any Talcher camera feed to the Angul Video Wall for real-time viewing during incidents or special operations.
- III. PTZ control from DPO Angul for Talcher PTZ cameras shall be enabled with appropriate access control (subordinate to Talcher C&C operator permissions during normal operations; overridable by senior officers during declared incidents).

- IV. Historical video search and playback from Talcher camera archives shall be accessible from DPO Angul through the federated VMS interface.

12.7.4 Connectivity Between Talcher & DPO Angul

- I. The Successful Bidder shall ensure a secure connectivity link between the Talcher Command Room and DPO Angul.
- II. All traffic between Talcher and DPO Angul shall traverse an encrypted VPN tunnel (AES-256 or equivalent) to protect surveillance video, alert data, and platform management traffic from interception.
- III. Minimum 300 Mbps Broadband with Public IP shall be provisioned for the federation link to support simultaneous viewing of at least 5 HD camera streams at DPO Angul.

12.8. CIVIL, MECHANICAL & ELECTRICAL WORKS

- I. The Successful Bidder shall carry out all civil and mechanical works required for installation of heavy-duty CCTV and VNPR Cantilever Poles, outdoor rack foundations, and cable ducting infrastructure at all field locations.
- II. Chemical earthing shall be provided at each field location and at the Command Room to protect equipment and personnel from earth faults and lightning strikes. Given the risk of lightning in open, industrial areas of Talcher, earthing shall be tested to achieve earth resistance below 3 ohms.
- III. Conduit for cable laying shall be provided throughout, including HDPE rigid conduit for underground runs and GI conduits for surface-mounted sections, with appropriate IP-rated conduit fittings at entry and exit points of outdoor enclosures.
- IV. CAT 6 double-jacketed outdoor UTP cables shall be used for all copper data links within field locations. CAT 6 cable laying inside conduit shall be carried out with proper termination, labelling, and dressing.
- V. Outdoor Rack foundation, fixing, and earthing works shall be completed prior to switch and equipment installation.
- VI. Interior infrastructure preparation for the Server Room and UPS installation at the Talcher Command Room shall include cable management trays, grommets, raised flooring with gallery style sitting (if required), wall painting, proper lighting, access control, carpeting, Acoustic panelling and all required furniture.

12.9. PROJECT EXECUTION METHODOLOGY

12.9.1 Implementation

- I. **Detailed Survey & Design:** The Successful Bidder shall conduct a detailed joint site survey of all 22 locations, finalize camera positions, cable routes, pole locations, OFC duct paths, electricity provision and Command Room layout. A detailed design document, Bill of Materials (revised if applicable), and project schedule shall be submitted for Talcher Municipality approval before any procurement.
- II. **Procurement & Mobilization:** Procurement of all hardware, software, and licensing items in accordance with approved specifications. Advance notice of delivery timelines to be provided. Mobilization of skilled site teams.

- III. **Civil, Electrical & OFC Works:** Foundation works, pole installation, conduit laying, OFC cable laying, and termination. Electricity connections at all field locations.
- IV. **Equipment Installation & Configuration:** Installation of cameras, switches, racks, UPS, SPDs, and field devices. Command Room server/storage/VMS setup and configuration. UCCP platform installation, camera onboarding, and VNPR/FRS integration.
- V. **Integration, Testing & Commissioning:** End-to-end system testing, federation link testing with DPO Angul, VNPR accuracy testing, FRS testing, alert routing validation, and User Acceptance Testing (UAT) with the client.
- VI. **Go-Live & Handover:** Formal Go-Live, operator training, documentation handover, and commencement of O&M period.

12.9.2 Quality Assurance

- I. All supplied equipment shall be with valid warranty certificates.
- II. Type approval / BIS certification for applicable equipment shall be provided.
- III. Site Acceptance Testing (SAT) checklists shall be prepared and signed off by client representatives for each field location and the Command Room.

12.10. OPERATIONS & MAINTENANCE (O&M) – 5 YEARS

The Successful Bidder shall provide comprehensive on-site support and O&M services for a period of five (5) years from the date of Go-Live certification. The O&M scope shall include:

- I. Deployment of qualified O&M personnel at the Talcher Command & Control Center and periodic field visits as required.
- II. 24x7 fault monitoring of all system components through a centralised Network Management System (NMS) or UCCP platform health dashboard.
- III. Preventive Maintenance: Quarterly scheduled preventive maintenance of all cameras, switches, UPS systems, field racks, OFC terminations, and Command Room equipment.
- IV. Software updates, VMS patches, antivirus updates, firmware upgrades for cameras and switches during the O&M period.
- V. Electricity charges of all field locations for O&M period power consumption, as contractually included, and submit the payment receipt with quarterly O&M reports.
- VI. Annual system health audit report to be submitted to the client covering uptime statistics, fault history, maintenance actions taken, and recommendations for system improvement.

12.11. TRAINING & CAPACITY BUILDING

- I. The Successful Bidder shall conduct structured training programs for police personnel of designated Talcher Police and DPO Angul personnel on the operation of the UCCP platform, VMS, VNPR, FRS, PA system, and mobile/web client applications.
- II. Minimum 2 days of hands-on training for Command-and-Control Room operators at Talcher, covering live view management, PTZ control, alert handling, incident logging, video playback, and e-challan review.

- III. Minimum 1 day of overview training for supervisory officers at DPO Angul on federation access, alert monitoring, and escalation procedures.
- IV. Training shall be provided in Odia and/or English as per client requirements. Training manuals and quick reference guides shall be supplied.
- V. Refresher training sessions shall be conducted at the commencement of every Year of the O&M period.

13. DELIVERABLES

#	Deliverable
1	Detailed Project Planning (DPP) with Survey Report & Site Assessment Document
2	Final Design Drawings, Network Topology & Cable Route Maps
3	Hardware Delivery Challans & OEM Warranty Certificates
4	Field Installation Completion Reports (22 Locations)
5	Command Room Setup & Server Configuration Report
6	VMS / UCCP Platform Configuration Document
8	Federation Link Test Report – Talcher to DPO Angul
9	Alert Routing & Notification Validation Report
10	User Acceptance Testing (UAT) Report
11	Operator Training Completion Certificates

14. Project Timeline:

SI No	Indicative Milestones	Time Period (Weeks)
1	Signing of Contract	T0
2	Project Planning- Detailed Project Plan (DPP) for implementation of the project scope	T0+1
3	Approval From Authority (DPP)	T0+2
4	Supply, Installation, Testing and completion of entire project scope	T0+14
5	Stabilization & Training Period (Training; Documentation and Support during stabilization period)	T0+15
6	System Go Live	T0+16

15. Payment Schedule

Sl. No.	Item Deliverable	Payment Milestone
1	Mobilization, Site Survey, Project Planning & submission/approval of Detailed Project Plan (DPP).	10% of Total Project Value upon approval of DPP.
2	Supply & delivery of materials/equipment at site with submission of inspection and	70% of Supply Item Value including 100% GST value.

	delivery reports.	
3	Completion of installation, integration, testing, commissioning, Go-Live & User Acceptance Test (UAT).	Balance 30% of Supply Item Value and 90% of Service/Implementation Charges including GST.
4	Beginning of 1 st year O&M upon successfully completion of operation support during Stabilization Period of 90 days.	Balance 10% of Implementation Service Charges including GST. 100% advance payment towards AMC including GST.
5	Operation & Annual Maintenance Contract (AMC) 2 nd to 5 th Year	100% advance at the beginning of every year against submission of previous year quarterly service & Maintenance reports.

16. Scope to the Authority

The Tender Inviting Authority / Talcher Municipality shall facilitate the successful implementation of the project by extending necessary administrative coordination and support for the following:

- i. Provision of required electrical power source at the Command & Control Centre.
- ii. Facilitation in obtaining necessary permissions, approvals, and No Objection Certificates (NoCs) from concerned authorities for utilization of Electrical Poles, BSNL Poles, ISP Poles, and Right of Way (RoW) permissions for aerial and underground OFC/network cabling works wherever required.
- iii. Provide necessary administrative assistance and coordination to the successful bidder for obtaining electricity service connections at field locations in the name of Talcher Municipality.

17. DEVIATION

The successful bidder shall conduct a detailed site survey immediately after award of work and submit a Detailed Project Plan (DPP) within seven (07) days from the date of signing of the Agreement.

In case any deviation from the quantities, specifications, or field requirements mentioned in the BOQ is identified during the detailed survey, the bidder shall submit the same to Talcher Municipality along with proper technical justification and supporting details for review and approval. Any such deviation shall be considered only after approval by Talcher Municipality and incorporation into the finalized BOQ.

The cumulative deviation in quantities shall ordinarily remain within $\pm 25\%$ of the quantities indicated in the BOQ of this RFP. However, Talcher Municipality reserves the right to increase, decrease, modify, or optimize the quantity of any item based on actual site conditions and project requirements, on mutually agreed terms with the successful bidder.

SCHEDULES

SCHEDULE - A

GENERAL INFORMATION ABOUT FIRM / COMPANY

Sl. No.	Particulars	Details to be furnished	
Details of the Bidder(firm/company)			
1	Name		
2	Address		
3	Telephone		
4	E-Mail		
Details of Authorized person			
5	Name		
6	Address		
7	Telephone		
Details of local office address			
8	Name		
9	Address		
10	Telephone		
11	Functioning since when		
Information about the company			
12	Status of company (Pvt. Ltd./ Proprietor /Partnership)		
13	Details of Registration of Firm /Company (enclose the necessary documentary proof)	Date	
		Ref#	Furnish the copy of the certificate of incorporation/Registration certificate
		Year of experience	

14	Name & Address of Bankers with Full address &Telephone no.	
15	Copy of MSME REGISTARTION If any.	
16	Copy of Balance Sheet for 3years To be enclosed	
17	Details of project as mentioned In eligibility conditions.	Enclose write up
18	GST Registration No.	(Enclose the copy of the certificate)
19	Income tax Return	(Enclose the copy of the IT return)
20	PAN.	(Enclose the copy of the PAN)
21	Tender paper cost (DD/of Rs10,000/-)	(Mention the DD number)

BID COVER LETTER

To

**The Executive Officer
Talcher Municipality, Talcher**

Dear Sir,

We, the undersigned offer to participate in the **Selection of Agency for Expansion of Unified Command & Control Platform Based CCTV Surveillance & ITMS System to Talcher Town with Integration of DPO Angul Central Command Center**. We are hereby submitting our bid, which includes the Technical bid, and a Price bid sealed under separate envelope.

We hereby declare that all the information and statements made in this bid are true and accept that any of our misrepresentations contained in it may lead to our disqualification. Our bid is valid for a period of one year after the date of bid opening, subject to the modification result from Contract negotiation you may subsequently carry out with us to accept our tender.

I/We do hereby declare I/we have not been de-recognized/ black listed by any State Govt./union Territory /Govt. of India / Govt. Organization for supply of not of Standard Quality (NSQ) items / Part-supply / non-supply.

I/We agree that the Tender inviting Authority can forfeit security Deposit and black list me/us if, any information furnished by us proved to be false at the time of inspection / Verification and not complying with the Tender terms & Conditions.

I/we further declare If we are assigned the work during the period of validity of the bid, we undertake to carry out the same as per the terms and conditions of this tender document.

We have carefully gone through the Terms & Conditions contained in the tender document and I declare that all the provisions of this tender document are acceptable to my company/firm.

I further certify that I am an authorized signatory of my company and am , therefore, competent to make this declaration

Yours truly,

**Authorized Signatory [In full and
initials]: Name and Title of Signatory:
Name of firm : (Company seal)**

UNDERTAKING ON PATENT RIGHTS

(Company letterhead) [Date]

To

**The Executive Officer,
Talcher Municipality Talcher**

Sub: Undertaking on Patent Rights Sir,

I/We as System Integrator (SI) do hereby undertake that none of the deliverables being provided by us is infringing on any patent or intellectual and industrial property rights as per the applicable laws of relevant jurisdictions having requisite competence.

I/We also confirm that there shall be no infringement of any patent or intellectual and industrial property rights as per the applicable laws of relevant jurisdictions having requisite competence, in respect of the equipment, systems or any part thereof to be supplied by us.

We shall indemnify Talcher Municipality against all cost/claims/legal claims/liabilities arising from third party claim in this regard at any time on account of the infringement or unauthorized use of patent or intellectual and industrial property rights of any such parties, whether such claims arise in respect of manufacture or use. Without prejudice to the aforesaid indemnity, the SI shall be responsible for the completion of the supplies including spares and uninterrupted use of the equipment and/or system or any art thereof to Talcher Municipality and persons authorized by Talcher Municipality irrespective of the fact of claims of infringement of any or all the rights mentioned above.

If it is found that it does infringe on patent rights, I/We absolve Talcher Municipality of any legal action.

Yours faithfully,

Authorized Signatory Designation

UNDERTAKING FROM OEM ON AUTHORIZATION OF USE OF THEIR PRODUCTS

(OEM Letterhead) [Date]

To

**The Executive Officer,
Talcher Municipality Talcher
Odisha**

Sub: Authorization of <company name of SI> to Provide Services Based on Our Product(s)

Sir,

This is to certify that I/We am/are the Original Equipment Manufacturer in respect of the products listed below. I/We confirm that <name of SI> ("SI") have due authorization from us to provide services, to Talcher Municipality , that are based on our product(s) listed below as per Request for Proposal (RFP) document relating to providing of the solution, Implementation, training & maintenance services, Information Technology Infrastructure and System Integration services to Talcher Municipality . We further endorse the warranty, contracting and licensing terms provided by SI to Talcher Municipality

Sr	Product Name	Remarks
No		
1.		
2.		
3.		

Yours faithfully,

Authorized Signatory Designation
OEM's company name

CC: SI's corporate name

SCHEDULE - E

UNDERTAKING ON AGREEMENT TO CHANGE IN QUANTITY OF HARDWARE/ SOFTWARE (Company letterhead) [Date]

To

**The Executive Officer,
Talcher Municipality Talcher
Odisha**

Sub: Undertaking on Agreement to change in quantity Sir,

I/We as System Integrator do hereby acknowledge that we understand and accept this condition of changes/ modification to the indicative bill of material provided as part of this RFP and other associated terms and conditions, including payments to be made to us on actual quantity, is henceforth submitted in our proposal as per the RFP.

Yours faithfully,

Authorized Signatory Designation

SELF DECLARATION

INFORMATION REGARDING CURRENT LITIGATION, DEBARRING EXPELLING OF TENDERED OR ABANDONMENT OF WORK BY THE BIDDER

1. Is the tenderer currently involved Yes / No in any litigation relating to the works. If yes: give details:
2. Has the tenderer or any of its Yes / No constituent partners been debarred! expelled by any agency in India during the last 5 years.
3. Has the tenderer or any of its Yes / No constituent partners failed to perform on any contract work in Talcher Municipality
If yes, give details:

Note:

If any information in this Schedule is found to be incorrect or concealed, qualification application will be summarily rejected.

Signature of the Bidder

SCHEDULE - G**EXISTING COMMITMENTS AND ON-GOING WORKS**

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract (In lakh)	Stipulated Period of Completion	Value of works* remaining to be completed . (In lakh)	Anticipated date of completion
1	2	3	4	5	6	7	8

*The above information is to be certified by the Concerned Authority.

In case if there is no existing commitment and ongoing works, the bidder will furnish a declaration that he has no work in hand. If found incorrect the bid shall be summarily rejected.

Signature of the Tenderer

Date.....

SCHEDULE - H**WORK EXPERIENCE****LIST OF SIMILAR NATURE OF PROJECTS EXECUTED**

Name of Dept / Organiza tion	Name of location and name of work	Contract price in Indian Rupees/ Agreemen t no.	Major Items of works	Stipulated date of commencem ent	Date of completion of the work	Value of work actually executed during last 5 financial years		Reasons for delay in starting/ completion, if any
						Financial year	Value	
1	2	3	4	5	6	7	8	9

Note: The above information is to be self-attested and supported by copy work order / agreement, completion certificate and performance certificate issued by concerned authority. The above information if found incorrect the bid shall be summarily rejected.

Signature of the Bidder

Date.

(To be furnished in the Financial Bid)
FINANCIAL BID Submission (On the letter head of the firm)

To

The Executive Officer,
Talcher Municipality Talcher

Ref:- Bid reference No._____

Dear Sir,

We, the undersigned, offer for **Selection of Agency for Expansion of Unified Command & Control Platform Based CCTV Surveillance & ITMS System to Talcher Town with Integration of DPO Angul Central Command Center** in accordance with your tender referenced above and our Technical proposal.

Our proposal is valid for a period of **180 days** after the date of bid opening, subject to the modifications resulting from contract negotiations you may subsequently carry out with us to accept our tender. If we are assigned the work during the period of validity of the proposal, we undertake to carry out the same as per the terms and conditions of this tender document.

We understand you are not bound to accept any proposal you receive.

We remain Yours sincerely,

Authorized Signatory [In full and initials] _____

Name and title of signatory _____

Name of Firm _____

Address: _____

(Company seal)

DETAILED TECHNICAL SPECIFICATION of MAJOR ITEMS**i. EDGE BASED AI 5 MP VARIFOCAL MOTORISED BULLET CAMERA**

S. No.	Parameter	Description	Compliance Yes/ No
1	Image Sensor	1/2.8" Progressive scan CMOS or better	
2	Resolution	2560x1920 (5MP) or Better	
3	Lens	Varifocal, 2.7~13.5 mm , F1.8 ~ F3.3,IR illuminator - Minimum IR Led *4, Range of reach 50mtr or more depending on the scene Horizontal field of view 100.1° ~ 29.9° Vertical field of view 71.8° ~ 22.4° Varifocal, remote focus and zoom, P- iris control, IR corrected	
4	Shutter speed	Automatic Electronic Shutter (AES); 1/5 s min; 1/30,000 s max; Default shutter or better	
5	WDR	120dB or better	
6	Day and night	Automatically removable infrared- cut filter	
7	S/N Ratio	70 db or better	
8	Minimum Illumination	0.04 lux @ F1.8 (Color) <0.005 lux @ F1.8 (B/W) 0 lux with IR illumination on	
9	Pan/Tilt/Zoom	48x digital zoom (4x on IE plug-in, 12x built-in) , Video orientation or better	
10	On-board Storage	Support for microSD/microSDHC /microSDXC card (1TB capacity supported), Support for SD card encryption, recording to network- attached storage (NAS),256GB SD Card class need to supplied at time of bidding	
11	Video Compression	H.265, H.264, MJPEG	
12	Video Frame Rate	Capture UP to 5MP : Up to 25~ 30 fps (50/60 Hz) @2560x1920 (5MP)	
		Main Stream-30fps @ 2560x1920,30fps @ 2560x1440,60 fps @ 1920x1080,2nd Stream:30fps	

S. No.	Parameter	Description	Compliance Yes/ No
		@ 2560x1920,30fps @ 2560x1440,60 fps @ 1920x1080 ,3rd Stream-30fps @ 1280x960,30 fps @ 1280x720,60 fps @ 1280x720	
13	Multi-view streaming	Up to 8 configurable profiles	
14	Video Streaming	Multiple (minimum 3 Video Streams), individually configurable streams in H.264, H.265 and Motion JPEG Smart StreamIII/ Zipstream in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265	
15	Image Settings	Saturation, contrast, brightness, sharpness, white balance, day/night threshold, exposure mode, exposure zones, motion-adaptiveexposure, defog, Video orientation, including Corridor Format,mirroring of images, dynamic text and image overlay,privacy masks,Scheduled profile settings, pixel calculator,3DNR, EIS (built-in gyro sensor,scene mode (auto, deblur),anti-overexposure, video title and time stamp overlay,anti-overexposure, VCA-based Smart IR III	
16	Memory	2 GB (RAM), 8 GB (Flash)	
17	Compute capabilities	Deep learning processing unit (DLPU)/SoC with built-in hardware deep learning accelerator	
18	Audio streaming	Two-way Audio (full duplex)	
19	Audio encoding	G.711, G.726, MPEG-2 AAC-LC	
20	Audio input/output	External microphone input, External line output	
21	Uni Cast Users	Minimum Live viewing for up to 8 clients or better	
22	Protocols	802.1X, ARP, Bonjour, CIFS/SMB, DDNS, DHCP, DNS, FTP/SFTP, HTTP, HTTPS, ICMP, IGMPv3, IPv4, IPv6, , NTP, PPPoE, QoS (CoS/DSCP), RTSP/RTP/RTCP, SMTP, SNMP, SSL, TCP/IP, TLS 1.2/1.3, UDP, UPnP	

S. No.	Parameter	Description	Compliance Yes/ No
23	Security	Access list, CSRF protection, digest authentication, HTTPS , IEEE 802.1x, Password protection, secure boot, signed firmware, brute force attack event, cyberattack event, quarantine event , user access log, user account management, Built in Cybersecurity in camera	
24	Interface	10 Base-T/100 Base-TX Ethernet (RJ-45)	
25	ONVIF	Profiles G,S,T M and Camera OEM should be full membership of ONVIF and it is available on onvif website	
26	Cybersecurity	Embedded in Camera/system-on-chip security	
27	Non -Hisilicon SOC	Yes	
28	Smart Motion Detection	video motion detection (Minimum five -Window), People detection, Vehicle detection, Time filter	
29	Edge based Analytics	Intrusion detection, Loitering detection, Line crossing detection, Unattended object detection, Missing object detection, Face detection, Crowd detection	
30	Vision Object Analytics	Object Detection-People, Vehicle (4-wheeled, 2-wheeled), Human / Vehicle Bestshot, Path Extraction Attribute Extraction-People (gender, clothing color, bag, hat), Vehicle (bike, bus, car, motorcycle, truck, color) Human face Bestshot, Re-Search Extraction,RealSight Engine(Smart IR III, Deblur, WDR, White Balance, Exposure Control),AI-powered Image Enhancement(Smart IR III)	
31	Event conditions	Audio detection, camera tampering detection, brute force attack event, cyberattack event, quarantine event , digital input, manual trigger, motion detection, periodical trigger, recording notification, SD card life expectancy, shock detection, system boot	

S. No.	Parameter	Description	Compliance Yes/ No
32	Event actions	Event notification via audio clip, camera link, digital output, email, HTTP, FTP/SFTP, NAS server, SD card	
		File upload via email, HTTP, FTP/SFTP, NAS server, SD card	
33	IP Connectors	RJ-45 cable connector for 10/100 Mbps PoE network connection	
		Audio line input	
		Audio line output	
		Digital input *2	
34	Power	Digital output *2	
		Power over Ethernet AC 24V, DC 12V, IEEE 802.3af PoE Class 0 (Power Redundancy) PoE: Max. 12.95W/ 10.55W (IR on/off) DC 12V: Max. 14.4W/ 12.0W (IR on/off) AC 24V*: Max. 12W/ 9.6W (IR on/off)	
35	Operating conditions& Humidity	Starting Temperature: Starting Temperature: -30°C ~ 60°C (-22°F ~ 140°F) ,98% RH (non-condensing)	
36	Working Temperature:	-40°C ~ 60°C (-40°F ~ 140°F) (IR off) -40°C ~ 50°C (-40°F ~ 122°F) (IR on)	
37	Approvals	EMC :CE (EN 55032/EN 55035 Class A, EN 50121-4), FCC (FCC Part 15 Subpart B Class A),	
		Safety:(UL 62368-1),IEC/EN 62368-1, IEC/EN 60950-22, IEC/EN 62471,	
		Casing :IK10 (IEC 62262), IP66/67 (IEC 60529), NEMA (NEMA 250 Type 4X), IEC 60068-2-11	
38	MTBF	More than 300,000 hrs MTBF Values minimum 300,000 hours as per RELX/ Telcorida methods.	
39	Detect (25PPM/ 8PPF)	Wide: 64.4 m (211.2 ft) Tele: 196.6 m (645.2 ft)	
	Observe (63PPM/ 19PPF)	Wide: 25.7 m (84.4 ft) Tele: 78.7 m (258.1 ft)	
	Recognize (125PPM/ 38PPF)	Wide: 12.8 m (42.1 ft) Tele: 39.3 m (129.0 ft)	

S. No.	Parameter	Description	Compliance Yes/ No
	Identify (250PPM/ 76PPF)	Wide: 6.4 m (20.9 ft) Tele: 19.6 m (64.5 ft)	
E	OEM Declaration and relevant details	Cybersecurity Compliance - a) The cameras offered must be cyber security certified with NDAA, TPM, Cybersecurity Chipset/Any other cyber security certificate from Indian Government body for mitigating cyber security risk. b)IoT System Certification Scheme (IoTSCS) administered by the Standardisation Testing and Quality Certification (STQC) Directorate duly validated for Essential Requirements (ER) specified in the Gazette Notification dated March 6, 2024, at time of Supply/ bidding a) Bidder to provide sign and stamp letter from camera OEM senior management on company letter head stating CCTV Camera quoted in bid do not comply with GB28181, GB/T28181-2011 standards and there should be no option to activate or deactivate GB/T 28181 standards in the camera web page/settings.	
F	OEM Declaration	The Camera shall ensure compliance to the Office Memorandum for insertion of Rule 144 (xi) in the General Finance Rules (GFR)-2017 bearing reference number F.No. 6/18/2019-PPD dated 23 July 2020 or latest, by the Public Procurement Division, Department of Expenditure, Ministry of Finance. Non-compliant bid(s) will be summarily rejected. The OEM should not have any common directors who are also on the board of companies having beneficiaries from land border countries at the time of bidding. The camera OEM must submit declaration regarding their own manufacturing setups and shall not	

S. No.	Parameter	Description	Compliance Yes/ No
		have 3rd party manufacturing from any company blacklisted in India or any company sharing land border with India. The IPR/copyright of source code of firmware/software etc. should not reside in countries sharing land borders with India. OEM should submit supporting documents to establish proof of this eligibility criteria	

ii. **EDGE BASED AI 5 MP PTZ CAMERA**

Sl. No	Parameter	Technical Specification	Compliance (Yes/No)
1	Image Sensor	1/2.8" Progressive CMOS or better	
2	Resolution	2592 × 1944 (5MP) or better	
3	Lens Type	30x Optical Zoom, Auto Focus or better	
4	Focal Length	f = 4.94 ~ 148.24 mm [/- 1mm] or better, 54.1° ~ 1.9° (Horizontal), 41.2° ~ 1.4° (Vertical) 65.7° ~ 2.4° (Diagonal), F1.3 ~ F4.6, DC-iris	
5	Auto-iris	DC-iris	
6	Shutter Time	1/1s~1/30,000s	
7	Removable IR-cut Filter for Day /Night Settings	Yes	
8	IR Illuminators	Built-in IR Illuminators up to 200 meters or better	
9	Minimum Illumination	Color: 0.005 lux@F1.6	
		B/W: 0.0005 lux@F1.6	
		0 lux with IR illumination on	
10	Pan Speed	0.1° ~300° /s	
11	Pan Range	360° endless	
12	Tilt Range	-15° to 90° (auto flip)	
13	Tilt Speed	0.1° ~200°/sec	
14	Preset Locations	300 Preset locations	
15	Pan/Tilt/Zoom Functionalities/e-PTZ	16x digital zoom or more	
		Auto Pan mode	
		Auto Patrol mode	
		Mechanical Auto flip	
16	Storage	Seamless Recording to Micro SD/SDHC/SDXC card slot. The Camera should support up to 512GB SD Card class 10	
17	Video Compression	H.265, H.264, MJPEG	
18	Video Frame	Main stream: 4M/3M/1080P/1.3M/720P (1–25/30	

Sl. No	Parameter	Technical Specification	Compliance (Yes/No)
	Rate	fps) Sub stream1: D1/CIF (1–25/30 fps) Sub stream2: 2MP/1.3MP/720P (1–25/30 fps)	
19	Video Streams	Min3 video streams and configurable or better	
20	S/N Ratio	Minimum 50 dB or better	
21	WDR	120 dB or better	
22	Video Streaming	Adjustable resolution, quality and constant bit rate control,	
23	Image Settings	Video title and time stamp overlay, video orientation, anti-overexposure, white balance, brightness, contrast, saturation, sharpness, gamma curve, defog, 3DNR, EIS, scene mode , BLC, HLC, gain control, Privacy mask ; Scheduled profile settings,	
24	Audio Capability	Two-way audio	
25	Audio Compression	G.711, G.726	
26	Audio Interface	External microphone input External line output	
27	Unicast User	Live viewing for more than 3 clients or better	
28	Security	Access list, digest authentication, HTTPS, IEEE 802.1x, password protection, signed firmware, brute force attack event, cyberattack event, quarantine event, user access log, user account management, embedded cybersecurity	
29	Protocols	HTTP; HTTPS; IPv4; RTSP; UDP; SMTP; NTP; DHCP; DNS; DDNS; IPv6; 802.1x; QoS; FTP; UPnP; ICMP; SNMP; SNMP v1/v2c/v3 (MIB-2); IGMP; ARP; RTCP; RTP; PPPoE; RTMP; TCP; ONVIF Profile S&G&T; CGI	
30	Interface	10 Base-T/100 Base	
31	ONVIF	Profiles G,S,T and Camera OEM should be full membership of ONVIF and it is available on onvif website	
32	Video Motion Detection	Yes	
33	Face Detection	Support Tripwire and intrusion. Support alarm triggering by target types (human and vehicle). Support filtering false alarms caused by animals, rustling leaves, bright lights, etc. vehicle (bike, bus, car, motorcycle, truck, color); Re-Search Extraction; Path Extraction	
34	Compute Capability	SoC with built-in hardware deep learning accelerator	
35	Event Action	Motion/tampering detection; audio detection; network disconnection detection; IP conflict	

Sl. No	Parameter	Technical Specification	Compliance (Yes/No)
		detection; memory card state detection; memory space detection; power exception detection	
36	IP Connectors	RJ-45 cable connector f or 10/100 Mbps PoE network connection	
		Audio line input	
		Audio line output	
37	Power Input	IEEE 802.3bt Class 6 PoE, DC 48V, AC 24V (Dual Power supply)	
38	Power Consumption	Basic: 13 W Max.: 22 W (illuminator + PTZ working)	
39	Certifications	IP67, CE, FCC, RoHS, BIS-ER/STQC	
40	Operating Temperature	-40°C ~ 70°C	
41	Humidity	98% or better	

iii. **TECHNICAL SPECIFICATION OF BULLET CAMERA FOR ANPR**

Sl No	Parameter	Specifications	Compliance (Yes/No)
1	Image Sensor Type	CMOS progressive	
2	Image Sensor Size	1/2.8 (0.357) inch or better	
3	Camera Image Sensing capacity (Picture Mode)	5MP resolution or better	
4	Resolution	D1 (704 x 480 Pixel), 720p (1280 x 720 Pixel), 1080p (1920 x 1080 Pixel), 1440 p (2560x1440 Pixel), 1728 P (3072 x 1728 Pixel) or better	
5	Electronic Shutter	1/30 to 1/10,000 sec or better	
6	Day/Night Capable	Yes, True day/night	
7	IR illumination Range(mtr)	50 or better	
8	Focal Length(mm)	3 - 9 (+/- 1mm) Motorized Varifocal Lens or better	
9	Frame Rate (fps)	30fps or better	
10	Video Compression	H.264, H.265, MJPEG	
11	Video Streaming	4 streams or better	
12	Privacy Masking	8 Zone or better	
13	Image features	Defog, BLC, HLC	
14	Audio Support	Yes, 2 way audio	
15	Alarm Support	Yes. Alarm in and alarm out	
16	Audio Compression	G.726 (ADPCM), AAC-LC*7, G.711	
17	Protocols	TCP/IPv4 & v6, UDP/IP, HTTP, HTTPS, SSL/TLS, SMTP, DNS, NTP, SNMPv1/v2/v3, DHCPv4 & v6, RTP, MLD, ICMP, ARP, IEEE 802.1X, DiffServ, SFTP, MQTT, LLDP, RTSP, RTP, RTP/RTCP, DDNS, UPnP, IGMP, SRTP	

SI No	Parameter	Specifications	Compliance (Yes/No)
18	Minimum Illumination for Capturing Color Image	0.05 or better, 0 lux with IR	
19	WDR (Wide Dynamic Range)	132dB or better	
20	SNR (Signal to Noise Ratio)	50 or better	
21	On Board SD/SDHC Card Support	Yes	
22	SD Card Memory (GB)	512 or better	
23	ONVIF support	Support for all profiles, (G, M,S, T)	
24	Available ROM for AI Application	Should be available	
25	Available RAM for AI Application	Should be available	
26	Installation Type	Outdoor	
27	Material of the Housing construction	Aluminium/Metal	
28	Protection	IP66, NEMA 4X compliant or better	
29	Vandal Resistant Housing	Should be available	
30	Ik rating	IK10	
31	Power Input	PoE	
32	Operating Temperature	-30 °C to 60 °C or better	
33	Operating Humidity	Max 99% RH or better	
34	Used SoC must be declaration	Must be available on datasheets or OEM website	
35	Certification	UL, CE, FCC, BIS-ER/STQC, NDAA, FIPS	
36	SSL Certificate	GlobalSign / DigiCert device Certificate or similar should be pre-installed	
37	Lens Type	Motorized Varifocal Zoom lens	
38	Type of Camera Housing	Bullet Camera	
39	IP Camera with built-in AI Engine for Ready to install 3rd party applications	Yes	
40	Video analytics requirements	Vehicle Detection, Number Plate detection at camera level (EDGE based analytics)	
41	Mount Bracket	Company fitted Base Bracket must be available in the Box.	

iv. EDGE BASED AI 8 MP FACIAL RECOGNITION CAMERA

SL. No.	Parameter	Description	Compliance Yes/ No
1	Image Sensor	1/1.8" Progressive CMOS or better	
2	Resolution	3840x2160 (8MP) or better	
3	Lens	f = 4.2 mm or better, Built-in IR illuminators, effective up to 40 meters with Smart IR, IR LED*4 or more Horizontal field of view :110.74°	

SL. No.	Parameter	Description	Compliance Yes/ No
		Vertical field of view :59.1°	
4	Shutter speed	Automatic Electronic Shutter (AES); 1/5 s~ 1/30,000s max; Default shutter or better	
5	WDR	120dB or better	
6	Day and night	Automatically removable infrared-cut filter	
7	S/N Ratio	54 db or better	
8	Minimum Illumination	0.015 lux @ F1.6 (Color) <0.005 lux @ F1.6 (B/W) 0 lux with IR illumination on	
9	Pan/Tilt/Zoom	48x digital zoom (4x on IE plug-in, 12x built-in), Video orientation or better	
10	On-board Storage	Seamless Recording to MicroSD/SDHC/SDXC card (1TB Capacity Supported) and recording to network-attached storage (NAS)	
11	Video Compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG	
12	Video Frame Rate	Capture UP to 8MP : Up to 25~ 30 fps (50/60 Hz) in all resolutions 30 fps @ 3840x2160 (8MP). Mainstream -30fps @3840x2160, 2nd Stream- 30fps @1920x1080, 3rd Stream-30fps @ 1280x720, or better	
13	Multi-view streaming	Up to 8 configurable profiles	
14	Video Streaming	Multiple (minimum 3 Video Streams), individually configurable streams in H.264, H.265 and Motion JPEG Smart Stream III/ Zipstream in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265	
15	Image Settings	General settings: Video title and time stamp overlay, video orientation (flip, mirror, rotation), Illuminators: Illuminators, anti-overexposure, VCA-based Smart IR III	

SL. No.	Parameter	Description	Compliance Yes/ No
		Image settings: White balance, brightness, contrast, saturation, sharpness, gamma curve), defog, 3DNR, EIS (built-in gyro sensor), Exposure: BLC, HLC, exposure control (exposure level, iris adjustment, exposure time, gain control, iris mode Privacy mask: pixel calculator, Scheduled profile settings	
16	Memory	2 GB (RAM), 8 GB (Flash)	
17	Compute capabilities	Deep learning processing unit (DLPU)/SoC with built-in hardware deep learning accelerator	
18	Audio streaming	Two-way Audio (full duplex)	
19	Audio encoding	G.711, G.726, MPEG-2 AAC-LC	
20	Audio input/output	Built-in microphone External microphone Input External line output	
21	Uni Cast Users	Minimum Live viewing for up to 8 clients or better	
22	Protocols	802.1X, ARP, Bonjour, CIFS/SMB, DDNS, DHCP, DNS, FTP/SFTP, HTTP/HTTPS, ICMP, IGMPv3, IPv4, IPv6, NTP, PPPoE, QoS (CoS/DSCP), RTSP/RTP/RTCP, SMTP, SNMP, SSL, TCP/IP, TLS 1.2/1.3, UDP, UPnP	
23	Security	Access list, CSRF protection, digest authentication, HTTPS, IEEE 802.1x, Password protection, secureboot, signed firmware, brute force attack event, cyberattack event, quarantine event, user access log, user account management, Built-in FIPS 140-2 Level 2 certified Trusted Platform Module (TPM)	
24	Interface	10 Base-T/100 Base-TX Ethernet (RJ-45)	
25	ONVIF	Profile G, S, T, M supported, specification available at www.onvif.org	
26	Cybersecurity	Embedded in Camera, TPM, FIPS-140, system-on-chip security	

SL. No.	Parameter	Description	Compliance Yes/ No
27	Non -Hisilicon SOC	Yes	
28	NDAA & STQC Compliant	Yes	
29	Smart Motion Detection	Video motion detection , People detection, Vehicle detection, Time filter	
30	Edge based Analytics	Intrusion detection, Loitering detection, Line crossing detection, face detection, Unattended object detection, Missing object detection, Crowd detection, RealSight Engine	
31	Vision Object Analytics	Object Detection People, Vehicle (4-wheeled, 2-wheeled), Human / Vehicle Bestshot, Path Extraction Attribute Extraction People (gender, clothing color, bag, hat), Vehicle (bike, bus, car, motorcycle, truck, color) Human face Bestshot, Re-Search Extraction	
32	Event conditions	Audio detection, camera tampering detection, brute force attack event, cyberattack event, quarantine event, digital input, manual trigger, motion detection, periodical trigger, recording notification, SD card life expectancy, shock detection, system boot	
33	Event actions	Event notification via audio clip, camera link, digital output, email, HTTP, FTP/SFTP, NAS server, SD card	
		File upload via email, HTTP, FTP/SFTP, NAS server, SD card	
34	IP Connectors	RJ-45 cable connector for 10/100 Mbps Network/PoE connection	
		Audio line input	
		Audio line output	
		Digital input: 1	
		Digital output: 1	
36	Power	IEEE 802.3af PoE Class 3	
37	Operating conditions & Humidity	Starting Temperature: -20°C ~ 50°C (-4°F ~ 122°F), 98% RH (non-condensing)	

SL. No.	Parameter	Description	Compliance Yes/ No
38	Working Temperature:	-35°C ~ 60°C (-31°F ~ 140°F) (IR off) -35°C ~ 50°C (-31°F ~ 122°F) (IR on)	
39	Approvals	EMC CE (EN 55032 Class A, EN 55035, EN 50121-4), FCC (FCC Part 15 Subpart B Class A) Safety UL (UL 62368-1/BIS-ER01, IEC/EN 62368-1, IEC/EN 60950-22, IEC/EN 62471, STQC (BIS -ER01) Casing - IK10 (IEC 62262), IP66, IP67 (IEC 60529)	
40	MTBF	More than 300,000 hrs MTBF Values minimum 300,000 hours as per RELX/ Telcorida methods.	
41	Detect (25PPM/ 8PPF)	85.5 m (280.5 ft)	
	Observe (63PPM/ 19PPF)	34.2 m (112.2 ft)	
	Recognize (125PPM / 38PPF)	17.1 m (56.0 ft)	
	Identify (250PPM / 76PPF)	8.5 m (27.9 ft)	

v. TECHNICAL SPECIFICATION FRS (FACIAL RECOGNITION SYSTEM)

Sr. No	Specification	Compliance (Yes/No)
1	The Facial Recognition System (FRS) targeted by this specification must be able to identify multiple persons of interest in real-time or recorded video files, through leading-edge face recognition technology from different video sources like IP cameras, Body Worn Cameras, and Mobile handset cameras, etc. The solution shall be able to perform in a crowd, on the move, and at a distance, with enrolment on the fly.	
2	The FRS system shall be enterprise-grade highly scalable providing the most accurate results for the most demanding real-time and post-event offline mode.	
3	The FRS system shall make use of the latest technologies such as AI & Deep learning with a series of the latest multiple CPU or GPUs from respective OEMs and not discontinued products.	
4	The FRS system shall make use of the stream computing paradigm of the latest GPUs to the limit by performing multiple stages of the face recognition pipeline in parallel. It must efficiently exploit cache hierarchies of both GPUs and CPUs to greatly improve the computational performance in crowded environments.	
5	To ensure the support to an open eco-system, the FRS system shall be a truly open & independent solution module and not embedded	

Sr. No	Specification	Compliance (Yes/No)
	in any NVR or VMS	
6	The FRS system shall support the auto discovery of any ONVIF compliant camera.	
7	The UI of the FRS system should support the live view of all the connected cameras for monitoring.	
8	The processing module of the system shall work without any interruption standalone at the respective station location even though the network is down and SYNC back all the captured data of events/alarms once the network is available.	
9	The FRS system shall have NO LIMITATION of detection & identification of the number of people appearing in a frame.	
10	The FRS system shall be able to detect multiple faces (from up to 600 frames) & compare a face against a database with the comparison speed of 60 million within a second.	
11	The FRS algorithm of the system shall be able to recognize partial faces with varying angles (up to face rotations of $\pm 45^\circ$ horizontal and $\pm 30^\circ$ vertical) & any facial accessories/ hair (mask, glasses, beard, and expressions).	
12	On identification of a registered suspect in live view, the operator can see the name and colour on the face box based on the watch list of the suspect registered in the database.	
13	The FRS system shall be able to broadly match a suspect/criminal photograph with a database created using a photograph images database available with different government authorities & local police.	
14	The FRS system shall ensure data privacy and security by proper encryption technologies such as AES-256 standard or better.	
15	The FRS system shall have offline inbuilt modules that make it possible to search for a specific subject in one or various recorded videos, existing database records & from previous detections logs of all the cameras at speeds faster than real-time. Analysis of offline videos can be performed at a speed of 12 times faster than a real-time stream. Also, the system shall provide options to choose from maximum accuracy or maximum speed for processing offline videos. This module shall also employ the GPU architecture so that it can process at high speed all the images on the analysed video, without omissions.	
16	The FRS system shall support day/night operation with the ability to detect faces both in colour and in black/white mode without any special configurations required.	
17	The FRS system shall support diverse graphic & standard video compression formats such as the latest compressions technology & resolutions (e.g. AVI, MPEG, MP4, MOV, ASF, H.265, 4MP, 4K & 8K).	
18	The FRS system shall be able to handle at least a minimum of 4MP FRS cameras with full frames per server. All the cameras must be	

Sr. No	Specification	Compliance (Yes/No)
	available live view on the monitoring UI, so the subject can be easily pinpointed in the live video.	
19	The FRS system shall have an inbuilt or external tool to synthetically generate rotated views of the face from a single partial/frontal image of the suspect face.	
20	The FRS system shall show the top 8 nearest matches with a matching percentage score of the captured image & CCTV frame image.	
21	The FRS system shall have the option to enable automatically enrol face images from live / recorded CCTV feeds & also be able to check if a new enrolled face is already enrolled in the database before registering the new face in the system.	
22	The FRS system shall be able to utilize any of the file formats like JPEG, PNG, BMP, TIFF, etc. format for enrolment for matching.	
23	The FRS system shall have an independent module for bulk registration of subjects automatically through folders or files.	
24	The FRS system shall have the capacity to create different categories of subjects with the option to customize the matching threshold for different categories & cameras.	
25	The FRS system shall support a user management module that enables different user level groups & permission levels to them.	
26	The user interface of the FRS system shall be user-friendly & have a report management tool without the installation of any additional client software. It shall be able to generate real-time different reports in different file formats.	
27	The FRS system shall have a web-based centralized management module to see all the system logs, the status of all processing servers, search of any face from logs of all connected servers, and also managed SYNC of all detections/identification to main DB and vice versa any new face addition in DB to all connected station processing servers.	
28	The FRS system should register raised alarms/events in relational databases complying with the SQL standard, such as PostgreSQL, Oracle, or MSSQL.	
29	The FRS system shall allow the regular backup of its database files, so the customer can rebuild the system quickly in any system failure situation.	
30	The FRS system shall have ready to serve a mobile app for Alarm monitoring and cross-check the identity of any suspect.	
31	The FRS system shall support pushing identification alarms on email. The email format shall include subject ID, captured & matched face, frame image, date and time of the match, a score of the match, watchlist name & camera details, etc.	
32	All External communications between the FRS system and third-party applications support SSL encryption with username and password.	
33	The FRS system shall be pre-integrated with the installed VMS system	

Sr. No	Specification	Compliance (Yes/No)
	and tagged with information such as the name of the subject, alarm type (detection & identification), subject code, subject group /watchlist, matching score, timestamp, camera source, comments, etc.	
34	The FRS system shall provide an SDK/API for integration with any third-party software like C4I Command & Control Centre. API must be available with a full set of documentation of each method with accompanying sample code. All-important FRS functions shall be fully accessible via API.	
35	Must have successful Implementation in India with UCC/VMS integration.	

vi. **TECHNICAL SPECIFICATION OF FRS SERVER**

Parameter	Technical Specifications		Compliance (Yes/No)
Processor	Socket Type	Single socket LGA4189	
	Supported CPU Series	4th Gen Intel Xeon Scalable Processor	
	CPU Populated	Intel Xeon Gold 5318Y Processor 24 Core (36M Cache, 2.10 Ghz)	
Chipset	PCH	Intel C621A	
Memory	Supported DIMM Qty	(8) DIMM slots	
	DIMM Type / Speed	DDR4 ECC RDIMM /LRDIMM 3200	
	Capacity	Should support up to 1,024GB RDIMM/ 2,048GB LRDIMM/ 2,048GB RDIMM 3DS/LRDIMM 3DS	
	Memory channel	8 Channels per CPU	
	Memory Capacity	2x32GB DDR4 RDIMM	
Expansion Slots	PCIe	3 PCIe Gen.4 x16 + 2 PCIe Gen.4 x8 slots	
LAN	Q'ty / Port	(2) 10GbE + (1) 1GbE port + (1) GbE dedicated for IPMI	
	Controller	Intel I210	
	PHY	Realtek RTL8211E	
Storage SATA	Drive Slots	(8) 3.5"/2.5" hot swap HDD slots	
	Controller	Intel C621A	
	Speed	6Gb/s	
	RAID	RAID 0/1/10/5 (Intel RSTe)	
	Storage Capacity	2 x Enterprise SATA 480GB SSD 2.5" and 4 x Enterprise 3.5" SATA 6Gb/s HDD, 18TB, 7200 rpm	

Parameter	Technical Specifications		Compliance (Yes/No)
RAID	Hardware RAID	12 Gb/s PCI Express SATA/SAS 4GB RAID Controller	
Storage NVMe	Connector (M.2)	(2) 22110/2280 (by PCIe Gen.3 interface)	
	Connector (U.2)	(1) SFF-8654 for (2) NVMe ports	
Graphic VGA	Connector type	D-Sub 15-pin	
	Resolution	Up to 1920x1200	
	Chipset	Aspeed AST2500	
GPU	GPU Card	NVIDIA A2 16GB PCIe Gen4 Passive GPU	
Input /Output	USB	(2) USB2.0 ports (@ rear) / (2) USB3.0 ports (@ rear) / (2) USB3.0 ports (via cable)	
	COM	(1) DB-9 COM Connector	
	VGA	(1) D-Sub 15-pin VGA port (@ rear)	
	RJ-45	(2) 10GbE + (1) 1GbE port + (1) GbE dedicated for IPMI	
	Audio	(1) 2x5-pin header / (1) 3 holes Audio Jack connector	
System Monitoring	Chipset	Aspeed AST2500	
	Fan	Total (5) 4-pin headers	
	Temperature	Monitors temperature for CPU, memory & system environment	
	Voltage	Monitors voltage for CPU, memory, chipset & power supply	
	LED	Over temperature warning indicator / Fan & PSU fail LED indicator	
	Others	Watchdog timer support	
Audio	Chipset	Realtek ALC888S	
	Feature	2.1 ch	
Server Management	Onboard Chipset	Onboard Aspeed AST2500	
	AST2500 iKVM Feature	24-bit high quality video compression / Supports storage over IP and remote platform-flash / USB 2.0 virtual hub	
	AST2500 IPMI Feature	IPMI 2.0 compliant baseboard management controller (BMC) / 10/100/1000 Mb/s MAC interface	
BIOS	Brand / ROM size	AMI / 32MB	
	Feature	Hardware Monitor / Boot from USB device/PXE via LAN/Storage / Console Redirection / User Configurable FAN PWM Duty Cycle / SMBIOS 3.3/PnP/Wake on LAN / ACPI 6.2 / ACPI sleeping states S5	

Parameter	Technical Specifications		Compliance (Yes/No)
Physical Dimension	Form Factor	2U Rackmount with 1200W 80 Plus Platinum Redundant Power Supply	
OS	Windows	Win. Server 2022 Standard OEM Pack	
Regulation	BIS	Yes	
	CE	Yes	
	QCI	Yes	
	ISO	9001, 14001, 27001	
Operating Environment	Operating Temp.	0° C ~ 40° C (32° F ~ 104° F)	
	Non-operating Temp.	- 40° C ~ 70° C (-40° F ~ 158° F)	
	In/Non-operating Humidity	90%, non-condensing at 35° C	
Support	Warranty	3 Years Standard, Warranty details should reflect on OEM website	

vii. TECHNICAL SPECIFICATION OF UNIFIED COMMAND & CONTROL PLATFORM SOFTWARE

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
A1 — General Requirements			
A1.1	Platform Type	The UCC shall be an enterprise-class, IP-enabled, Cloud-ready application supporting seamless unification of Public Safety elements including VMS, ANPR/VNPR, Incident Management, Emergency Response, Criminal Tracking, Record Management, and Traffic Management under a single platform with future scalability.	
A1.2	Cloud Readiness	The platform must be Cloud-ready from Day 1 with the ability to host all or selected modules in a private cloud environment approved by MEITY.	
A1.3	High Availability & Failover	The platform must support native failover with both local and geographical redundancy for all modules. OEM must ensure scalability and high availability.	
A1.4	Unified Management	The UCC platform must deliver a true unified management experience for critical infrastructure — simplifying control room operations, minimizing total cost of ownership, and increasing operational efficiency for rapid decision-making.	
A1.5	Real-Time Monitoring	The platform shall maximize real-time monitoring and control efficiency from a single workstation through synchronized control of	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
		high-resolution blueprints, images, streaming camera data, and system alerts.	
A1.6	System Integration	The UCC shall allow simple and accessible integration with independent control systems through a single unification point with a consistent user interface.	
A1.7	Open Architecture	The UCC shall be open-architecture based, highly scalable, and capable of integrating multiple disparate systems on a common platform.	
A1.8	Common Operating Picture	The UCC shall provide a real-time Common Operating Picture (COP) involving all agencies using a simple operator-friendly interface.	
A1.9	Sensor Support	The system shall support various sensors including Cameras, GPS, Voice Devices, Storage Devices, and Sensor Inputs from utility applications/systems.	
A1.10	Dashboard & Workflows	The UCC shall provide a dashboard functionality to manage workflows by integrating information from different agencies and systems to facilitate responsive decision-making.	
A1.11	Cross-Agency Collaboration	The UCC shall provide a cross-agency collaboration tool to support instant communication between various user groups and authorities.	
A2 — UCC Architecture			
A2.1	IP & TLS Communication	The application shall be IP-enabled. All communication between servers and clients shall be based on standard TCP/IP protocol using TLS encryption with digital certificates to secure the communication channel.	
A2.2	Database Protection	The application shall protect against potential database server failure and continue operation through standard off-the-shelf solutions.	
A2.3	Client Scalability	The application shall support up to 1,000 simultaneous client connections with an unrestricted number of client installations.	
A2.4	Log Retention	The application shall support an unrestricted number of logs and historical transactions (events and alarms), limited only by available hard disk space.	
A2.5	Native Failover	The UCC application shall support native and off-the-shelf failover options without dependency on external applications for both hardware and application failover.	
A3 — Native Map Module (GIS & Offline Maps)			

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
A3.1	OGC Standard Formats	The GIS Map shall support standard file formats defined by the Open Geospatial Consortium (OGC) with export capability in PDF, JPG, and PNG.	
A3.2	Mixed Map Configuration	It shall be possible to configure a mixed set of maps comprising GIS, online providers, and private imported files, linked together.	
A3.3	Map-Centric Interface	The UCC shall provide a map-centric interface with the ability to Command & Control all system capabilities from a full-screen map interface.	
A3.4	Multi-Screen Map Span	The map shall be spannable across all screens of the UCC client station with synchronized pan/zoom and full Command & Control capabilities maintained across all screens.	
A3.5	KML Layer Support	The GIS Map shall support display of information layers in Keyhole Markup Language (KML) format.	
A3.6	Entity State Monitoring	It shall be possible to monitor the state of entities on the map with customizable icons for any entity.	
A3.7	Zone of Interest Selection	Users shall be able to draw a zone of interest on the GIS Map to display all entities within that zone simultaneously.	
A3.8	Popup Entity Display	The user shall be able to select and display content of multiple UCC entities on the map in popup windows.	
A3.9	Map Search Capabilities	The GIS Map shall provide search by entity name, street name, or point of interest; drag-and-drop entities; event-based response actions; and CCTV feed viewing upon event trigger.	
A4 — Alarm Management			
A4.1	User-Defined Alarms	The UCC shall support creation and modification of an unrestricted number of user-defined alarms with configurable time schedules and coverage periods.	
A4.2	Alarm Priority & Threshold	Users shall be able to set priority levels and reactivation thresholds for alarms.	
A4.3	Video Display on Alarm	Users shall be able to define whether to display live video, recorded video, still frames/snapshots, or a mix upon alarm trigger.	
A4.4	Alarm Grouping & Routing	Alarms shall be groupable by source and type. Notifications shall be routable to one or more recipients with configurable priority levels.	
A4.5	Email Notification	The UCC shall support alarm notification to email addresses using the SMTP protocol.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
A4.6	Alarm Instructions	The ability to create alarm-related instructions shall be supported through the display of an alarm event.	
A4.7	Alarm Actions	Users shall be able to acknowledge alarms, create incidents upon acknowledgement, put alarms to snooze, and spontaneously trigger alarms manually.	
A4.8	Notification View	All system messages (notifications, alerts, and alarms) shall be available from a Notifications View with sort and filter controls. Notifications shall also be visible in the Field Responder Mobile App or web portal.	
A5 — Real-Time Dashboard			
A5.1	Situational Awareness	The real-time dashboard shall provide situational awareness for authorities and senior officials displaying the current security situation at a glance.	
A5.2	Adaptive Monitoring UI	The Monitoring UI shall dynamically adapt to operator activity through configurable widgets grouped in the dashboard.	
A5.3	Widget Types	Dashboard widget types shall include: Image (JPG/PNG/GIF/BMP), Text (configurable font/size/colour/alignment), Tile (any UCC entity), Web Page (URL display), Entity Count, and Report results (total count, top results, or visual graph).	
A5.4	Drag & Drop Widgets	The software shall have drag-and-drop functionality for all widgets to enable priority-based arrangement by the operator.	
A5.5	Dashboard Privileges	Analysts/Operators shall view and modify dashboards only if granted appropriate privileges.	
A6 — Threat Level Indication			
A6.1	Colour-Coded Threat Display	The UCC shall display threat levels based on the number and criticality of alerts using colour-coded display, with a pre-defined escalation hierarchy. Threat situations shall be activatable from Web/Mobile clients by authorised users.	
A7 — Reporting			
A7.1	Report Types Supported	The UCC shall support: Alarm Reports, Video-Specific Reports (archive, bookmark, motion), ANPR/VNPR Reports (mobile ANPR, plate reads/hits, reads per zone), Configuration Reports, Generic Reports, Custom Reports, and Report Templates.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
A7.2	Custom Report Templates	Users shall be able to customise predefined reports and save them as new templates without any external reporting tool. Options include filters, report length, timeout period, column visibility, and sort order.	
A7.3	Data Filtering	The UCC shall support comprehensive data filtering for most reports based on entity type, event type, event timestamp, custom fields, and more.	
A7.4	Report Actions	The UCC shall support: printing reports, exporting to PDF/Microsoft Excel/CSV, and automatically emailing reports on a schedule to one or more recipients.	
A7.5	Drill-Down Reports	The user shall be able to click an entity within an existing report to generate additional drill-down reports from the Monitoring UI.	
A8 — Configuration User Interface			
A8.1	Role-Based Configuration	The Configuration UI shall allow administrators and authorised users to change the system configuration. All embedded system configurations shall be accessible via a single UI.	
A8.2	Home Page & Utilities	The Configuration UI shall have a home page with single-click access to various tasks and shall include troubleshooting utilities, import tools, and unit discovery tools.	
A8.3	Audit & History Reporting	The Configuration UI shall include a static reporting interface to view historical events by entity activity, audit trails of user/administrator changes, and entity configuration before/after values.	
A8.4	Shared Entities	Common entities such as users, schedules, and alarms shall be reusable across all embedded systems in the platform.	
A8.5	Unified Configuration Interface	A single unified interface shall be provided for configuration of Video, ANPR/VNPR, and Emergency Response systems.	
A9 — Mobile App (Smartphone & Tablet)			
A9.1	Mobile Platform Support	The UCC shall support mobile apps for off-the-shelf smartphones and tablets communicating over Wi-Fi or mobile networks using HTTP/HTTPS with TLS encryption.	
A9.2	Mobile App Functionalities	The mobile app shall provide: password change; task/action execution; camera and alert viewing; GIS/offline map navigation with live/recorded video and alarm access; live video streaming	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
		from smartphone camera to command centre; push notification for alarms; alarm acknowledgement/forwarding; device search on GIS map; and any required customisations.	
A10 — System Health Monitor			
A10.1	Health Monitoring	The UCC shall monitor system health, log health-related events, and calculate statistics.	
A11 — Audit & User Activity Trails			
A11.1	Audit Trail Generation	The UCC shall support audit trails consisting of logs of operator/administrator additions, deletions, and modifications, with the ability to query by user, change, entity, and time period.	
A11.2	Configuration Change Audit	Audit trail reports shall include detailed before-and-after values for all entity configuration changes.	
A11.3	User Activity Trails	The UCC shall log operator activity including login, camera viewed, badge printing, video export, and more.	
A11.4	Audit Report Export	The UCC shall support printing and exporting audit/activity trail reports to PDF, Microsoft Excel, or CSV.	
A12 — Third-Party System Integration			
A12.1	Directory Service Integration	MS Active Directory or equivalent integration shall be supported for centralised user management including user groups and access control.	
A12.2	Integration Methods	The UCC shall support multiple integration approaches: Software Development Kits (SDKs), Driver Development Kits (DDKs), REST-based Web Service SDK, RTSP Service SDKs, and Application Programming Interface (APIs).	
A12.3	Custom Development Provision	The UCC shall have provision to support custom development for the platform.	
A12.4	SDK/API Functions	SDKs/APIs shall provide programming functions to view and/or configure core entities such as users, user groups, alarms, custom events, and schedules.	
A13 — Cyber Security Requirements			
A13.1	Encrypted Communication	All communication between servers, clients, and external systems shall use standard TCP/IP protocol with TLS encryption and digital certificates.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
A13.2	Port Management	The application shall limit IP ports in use and provide administrators with the ability to configure these ports.	
A13.3	Secured Media Streams	VMS integrated with the UCC shall support only secured media stream requests (RTSPS/RTSP over TLS) with certificate-based, claims-based authentication using limited-lifetime security tokens, unless explicitly configured otherwise.	
A13.4	Cyber Security Best Practices	All required best practices for Cyber Security Standards must be followed and adopted in the development, deployment, and operational phases of the project.	
VIDEO MANAGEMENT SYSTEM (VMS)			
B1 — General & Architecture			
B1.1	Enterprise VMS Platform	The VMS shall be an enterprise-class, IP-enabled, server-client architecture application supporting seamless unification of Public Safety elements including Access Control, Communication Management, and Alarm Management.	
B1.2	ONVIF Compliance	The VMS shall support cameras using industry standards ONVIF Profile S, G, T, and M and shall comprise Management Servers, Recording Servers, and Client Interface as integral components.	
B1.3	Camera Scalability	The Video Management Server shall provide centralised management of all IP cameras. The database shall support more than 50,000 cameras/IP endpoints, scalable to 20,000.	
B1.4	IPv4/IPv6 & Multicast Support	The application shall handle both IPv4 and IPv6 Unicast and Multicast traffic with PIM-SM and PIM-DM support.	
B1.5	Direct Multicast Streaming	The VMS and associated clients shall support Direct Multicast of video streams from cameras to active viewing clients without routing through recording or other servers, optimising bandwidth and compute capacity.	
B1.6	MAC-Independent Licensing	There shall be no dependency on the endpoint MAC address for licensing, for ease of operations.	
B1.7	Recording Server Scalability	There shall be no limitation on the number of recording servers added to a single management/failover server. Any limitations must be clearly specified by the bidder.	
B2 — High Availability & Disaster Recovery			

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
B2.1	Native Failover	The VMS shall support native failover within the application with no dependency on any external application for both hardware and application redundancy, covering both management and recording servers.	
B2.2	Failover Time & Data Integrity	The Failover/Fallback Management Server shall be on hot standby and take over automatically within 1 minute with no loss of live or recorded video.	
B2.3	Geographic Disaster Recovery	The VMS server shall support disaster recovery scenarios with a geographically separate server taking over only if the primary server goes offline.	
B3 — Alarm Management			
B3.1	Alarm Configuration	Users shall be able to set alarm priority levels and reactivation thresholds, and define whether to display live video, recorded video, still frames/snapshots, or a mix, including Picture-in-Picture (PiP) mode.	
B3.2	Alarm Grouping & Notification	Alarms shall be groupable by source and type. Notifications shall be routable to one or more recipients with priority-level assignment, including email notification.	
B3.3	Alarm Actions	Users shall be able to acknowledge alarms, create incidents upon acknowledgement, put alarms to snooze, and spontaneously trigger alarms manually.	
B4 — Dashboard & Reporting			
B4.1	Native Dashboard	The VMS shall provide a native, flexible dashboard with the ability to modify views based on various parameters including alarms and incidents from edge camera analytics.	
B4.2	Adaptive Monitoring UI	The VMS Monitoring UI shall dynamically adapt to operator activity through configurable dashboard widgets, with drag-and-drop support for priority arrangement.	
B4.3	Report Types & Filtering	The platform shall support database reporting for all unified systems from a single interface with comprehensive data filtering by entity type, event type, event timestamp, and more.	
B4.4	Custom Report Templates	Users shall be able to customise predefined reports and save new templates with options for filters, report length, column visibility, and sort order — without an external reporting tool.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
B4.5	Report Display Widget	Reports shall be displayable within dashboards showing total results, top results, or visual graphs.	
B5 — Mobile & Field Operations			
B5.1	Smartphone Video Streaming	The VMS shall support using the smartphone camera to stream a live video feed to a video recorder in the system.	
B5.2	Field Operator Location & Collaboration	The system shall support locating mobile app users on the map and enable real-time messaging and collaboration between field staff and the central command centre.	
B6 — System Health Monitor			
B6.1	Health Monitoring & Statistics	The VMS shall monitor system health, log health-related events, calculate statistics, and provide dashboard-based health metrics including uptime and mean-time-between-failures (MTBF) for all entities and roles.	
B7 — Cyber Security Requirements			
B7.1	Encrypted Communication	All communication between VMS servers, clients, and external systems shall use TCP/IP protocol with TLS encryption and digital certificates.	
B7.2	Port Configuration	The application shall limit IP ports in use and provide administrators with the ability to configure these ports.	
B7.3	Cyber Security Standards	All Cyber Security best practices must be followed in development, deployment, and adoption phases.	
B7.4	Cyber Security Response Centre	The OEM shall have an online or offline Cyber Security Emergency Response Centre. Details must be available on the OEM's global website.	
B7.5	ISO 27001 Certification	The VMS OEM must be ISO 27001 certified. Copy of the certificate must be submitted with the technical bid.	
B7.6	UL 2900-2-3 Level 3 Certification	The VMS platform must hold UL 2900-2-3 Level 3 Cyber Security certification. Certificate must be provided with the technical bid.	
B7.7	BIS-ER / STQC Certification	The VMS platform must have BIS-ER/STQC certification atleast at the time of supply.	
B7.8	SOC Type 2 Report	The VMS platform must have a Cyber Security SOC Type 2 report, to be provided with the technical bid.	
B7.9	GDPR Compliance	The proposed platform must be GDPR compliant for data privacy.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
VIDEO SYNOPSIS / SUMMARISATION SYSTEM (VSS)			
C1 — Platform & Architecture			
C1.1	Open Platform	The VSS shall be a truly open platform, interfaceable with any ONVIF-compliant VMS system selected by the customer.	
C1.2	AI & Computer Vision	The system shall be based on computer vision and Artificial Intelligence (AI) technology enabling rapid video review, search, quantitative video insights, and smart alerting to shorten time-to-target for threat detection and safety optimisation.	
C1.3	Multi-Source Video Input	The system shall make live and recorded surveillance feeds from DVR/NVR/VMS/Mobile sources searchable, quantifiable, and actionable.	
C1.4	Deployment Flexibility	The system can be deployed on physical or virtual system architectures.	
C1.5	Web Browser Client	The system client module shall be accessible and functional in web browsers including Google Chrome and Firefox.	
C1.6	Open API	The system shall provide an Open API for integration with any third-party systems at no additional cost to the customer.	
C1.7	Single Sign-On (SSO)	The system shall support Single Sign-On (SSO) using Microsoft Active Directory, including user groups.	
C1.8	Centralised Administration	The system shall have a centralised, single web-based administration module to view and activate cameras, configure hosts, and manage related services.	
C2 — Video Processing Capabilities			
C2.1	Metadata Generation	The system shall generate usable metadata from recorded files (connected VMS platforms and offline video files) with full case management, multi-camera search, and appearance similarity analysis, supporting single or multiple file processing.	
C2.2	Object Extraction & Reconstruction	The system shall automatically extract all moving objects (People/Vehicles/Animals) from the original video and reconstruct/superimpose them in the original scene simultaneously, displaying events from different times without altering the original data.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
C2.3	Timestamp Visibility	The system shall display the timestamp at which a specific object appeared in the video, visible directly on the image of the subject/object.	
C2.4	Multi-Camera Person Tracking	The system shall follow the movement of people across multiple selected cameras in archived video in a time-synchronised fashion, with adjustable speed and number of events shown simultaneously.	
C2.5	Supported File Formats & Resolution	For offline/recorded feeds, the system shall support formats: AVI, MKV, MPEG4, MOV, WMV, DVR, ASF, RT4, DIVX, H.264, H.265/HEVC, MPEG-4, H.263, 3GP, DAV, MP4, FLV, TS, XBA, GE5, and more; at any resolution from CIF to 4K; at frame rates between 8–30 FPS.	
C3 — Object Search & Filtering			
C3.1	Time Range & Source Filtering	The system shall support limiting search criteria by specific time ranges and by specific CCTV camera feed source.	
C3.2	Object Classification	Post-analysis, reviewed video shall be classified into: People (Man/Woman/Child), Two-Wheeled Vehicles (Bicycle/Motorcycle), Other Vehicles (Car/Pickup/Van/Truck/Bus), and Animals.	
C3.3	People Attribute Search	The system shall support attribute-based people search including: total people count, bag type (backpack/handheld), hat, upper/lower wear length, colour (up to 12 colours), face appearance (mask/no mask).	
C3.4	Vehicle Attribute Search	The system shall support capturing and searching license plates of vehicles appearing in video feeds.	
C3.5	Advanced Object Filters	The system shall support object search based on: real-life size (in metres), speed (in KMPH), dwell time, area inclusion/exclusion (user-defined), path (user-defined), and filter tolerance adjustment.	
C3.6	Face Matching	The system shall detect faces of all people appearing in search results and match/identify them against a watchlist, imported external images, or images extracted from recorded video.	
C3.7	License Plate Matching	The system shall extract and read license plates from vehicles in search results and match/identify them against a watchlist or existing plates from video.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
C3.8	Heat Maps & Path Visualisation	The system shall display dwell time, background scene changes, object path lines, visual layers, and heat maps to identify object movement based on global filters.	
C4 — Case & Evidence Management			
C4.1	Bookmarking & Tagging	The system shall allow users to bookmark event clips for future reference and tag critical clips to prevent removal based on retention period settings.	
C4.2	Case Management & Chain of Clips	The system shall link separate video clips into a single case/chain. All video data shall be stored in a database for easy and quick operator review.	
C4.3	Customisability	The system shall be customisable to meet specific operational and forensic search requirements of the user environment.	
C5 — Implementation Experience			
C5.1	Proven India Deployment	The bidder must have successful implementation experience within India with the proposed UCC/VMS integration. Proof of Document (e.g., work order, completion certificate) must be submitted with the technical bid.	
INCIDENT MANAGEMENT (IM) MODULE			
D1 — Platform Integration			
D1.1	Native Module	The IM Module shall be seamlessly embedded as a native module within the UCC Platform.	
D1.2	Forward Compatibility	The UCC Platform and IM Module shall be forward-compatible so that upgrading one does not prevent the use of the other.	
D1.3	Sub-Component Compatibility	The IM Module shall be seamlessly compatible with all UCC Platform sub-components including VMS, Big Data Correlation tools, and third-party SDK/API integrations.	
D1.4	Operational Tools	The IM Module shall offer the following operational tools: Incident Management, Document Management, Rules Engine, Workflow Automation, Standard Operating Procedures (SOP), Incident Monitoring Operator Interface, and Incident Reports.	
D2 — Incident Creation & Management			
D2.1	Situational Intelligence	The IM Module shall provide a map-centric situational intelligence view combining incident history, operator comments, workflow and	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
		action logs, SOPs, relevant live/playback video, and an aggregated event sequence.	
D2.2	Incident Triggering	Incidents shall be triggerable manually or automatically based on a configurable correlation of events. Rules shall be configurable graphically or importable as scripts using logical AND/OR/NOT operators with occurrence, interval, and event filtering.	
D2.3	Incident Attributes	Each incident shall support: colour/icon (customisable); category (logical tree); location (entity or geographic coordinate); priority level; description; state; SOP; activity history; attached entities (auto-associated from triggering events); and attached documents/URLs.	
D2.4	Incident Ownership	The system shall support management of incident ownership — operators may explicitly request or release ownership. Ownership is assigned immediately upon starting work on an incident.	
D2.5	Supervisor View	Supervisors shall be able to view all incidents under their supervision, see ownership of each, and see real-time information about who is currently monitoring each incident.	
D2.6	Test Mode	The IM Module shall provide a test mode allowing authorised users to validate incident configuration parameters before activation.	
D2.7	Incident Detail Screen	Each incident shall have a configurable detail screen showing: a layout of live and playback video; the local map centred on incident location; and a full history including all events, system workflow activities, operator actions, and comments.	
D2.8	Operator Actions	Operators shall be able to: change incident state; forward/transfer the incident; edit description/priority/ownership; attach additional entities; link related incidents; attach document URLs.	
D2.9	Incident Dispatch	The IM Module shall support dispatching an incident to a specific user or user group to secure access to information.	
D2.10	Sub-Incidents	Incident supervisors shall be able to see all sub-incidents associated with a main incident.	
D3 — Standard Operating Procedures (SOP) & Workflow			
D3.1	SOP Guidance	The IM Module shall provide interactive, operator-acknowledged SOPs for each incident	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
		type. The SOP shall be dynamic, adapting next steps based on responses to previous steps.	
D3.2	SOP Skip & Justification	The IM Module shall allow skipping of SOP steps with mandatory justification capture. The supervisor shall be notified when a step is skipped.	
D3.3	Step-Level Document Links	Each SOP step shall be optionally associated with a document (URL, Word, PDF, or HTML format).	
D3.4	Time Tracking	The tool shall track elapsed time for each SOP step and total elapsed time from initial response to resolution. Visual indicators shall be displayed when time-to-response or time-to-resolution thresholds are exceeded.	
D3.5	Response & Resolution Thresholds	Configurable maximum time to initiate a procedure and minimum time to close an incident shall be enforced with automated actions on threshold breach.	
D3.6	Graphical Workflow Designer	The IM Module shall provide a native Workflow Engine with a graphical designer — no scripting competence shall be required to implement a workflow for each incident type.	
D4 — Audit, Logging & Configuration			
D4.1	Configuration Audit Trail	The IM Module shall log all configuration changes in an audit trail with before-and-after values.	
D4.2	User Activity Logging	The IM Module shall log all user activities executed while an incident is active.	
D5 — Document Management			
D5.1	Auto-Document Attachment	Documents shall be automatically attached to incidents if document properties match incident properties (type, schedule, location, user/user group).	
D5.2	SOP Document Linking	The IM Module shall offer the ability to automatically link a document to a specific SOP step.	
D5.3	Document File System	Document Management shall provide a file system to store documents and document URLs, supporting third-party file systems.	
D6 — Incident Reporting			
D6.1	Report Generation	The IM Module shall offer report management tasks with user-privilege-based access. Incident history shall be queryable by incident type, state, location, priority, time range, owner, description, and any combination thereof.	

Sl. No.	Category	Technical Specification	Compliance (Yes / No)
D6.2	Report Query Results	Report results shall include a list of incidents and a visual map showing incident locations. Multiple incidents at the same location shall be clustered on the map.	
D6.3	Read-Only Closed Incidents	Closed incidents shall be in read-only mode, with the exception of adding links to related incidents.	
D6.4	Operator Activity in Reports	The Report task shall include the user activity log for the time the operator owned/monitored the incident, providing a view of all actions taken toward resolution.	
D6.5	Visual Report Formats	The IM Module shall offer all reports in visual presentation formats (pie charts, lines, columns, rows) natively within the platform — no external tools required.	
D6.6	Supported Export Formats	The IM Module shall support report export in: HTML, PDF, XML, and XLS/CSV formats.	
D6.7	Custom & Profile Reports	The UCC Platform shall support customisable report templates (filters, length, timeout, column selection, sort order), profile reports (exportable/printable, filterable by profile ID, initiators, recipients, modification time, configurable columns), and automatic report emailing on a schedule.	
D6.8	Incident-Based Reports	Security operators shall be able to create incident reports for a shift covering video-related and other unified system incidents — standalone or tied to alarms — with the ability to link multiple video sequences, add entities/events/alarms, and use custom forms. Reports shall be exportable in Microsoft Word/Excel or Acrobat (PDF) format.	

viii. SPECIFICATION OF UCC APPLICATION SERVER

Parameter	Technical Specifications		Compliance (Yes/No)
Processor	Socket Type	Single socket LGA4189	
	Supported CPU Series	3rd Gen Intel Xeon Scalable Processor	
	CPU Populated	Intel Xeon Gold 5318Y Processor 16 Core (36M Cache, 2.10 Ghz)	
Chipset	PCH	Intel C621A	
Memory	Supported DIMM Qty	(8) DIMM slots	
	DIMM Type / Speed	DDR5 4800 MHz (1DPC) / 4000MHz (2DPC)	

Parameter	Technical Specifications		Compliance (Yes/No)
	Capacity	Should support up to 1,024GB RDIMM/ 2,048GB LRDIMM/ 2,048GB RDIMM 3DS/LRDIMM 3DS	
	Memory channel	8 Channels per CPU	
	Memory Capacity	2x32GB DDR4 RDIMM	
Expansion Slots	PCIe	((5) PCIe Gen.5 x16 slots	
LAN	Q'ty / Port	(2) GbE ports + (1) GbE dedicated for IPMI Intel I210-AT	
	Controller	Intel I210 -AT	
	PHY	Realtek RTL8211E	
Storage SATA	Drive Slots	4 x 3.5" Hot Swap Drive Slots in 1U Rack	
	Controller	Intel C621A	
	Speed	6Gb/s	
	RAID	RAID 0/1/10/5 (Intel RSTe)	
	Storage Capacity	2 x Enterprise SATA 980GB SSD 2.5"	
Storage NVMe	Connector (M.2)	(2) 22110/2280 (by PCIe Gen.3 interface)	
	Connector (U.2)	(1) SFF-8654 for (2) NVMe ports	
Graphic VGA	Connector type	D-Sub 15-pin	
	Resolution	Up to 1920x1200	
	Chipset	Aspeed AST2500	
Input /Output	USB	(2) USB2.0 ports (@ rear) / (2) USB3.0 ports (@ rear) / (2) USB3.0 ports (via cable)	
	COM	(1) DB-9 COM Connector	
	VGA	(1) D-Sub 15-pin VGA port (@ rear)	
	RJ-45	(2) GbE ports + (1) GbE dedicated for IPMI	
	Audio	(1) 2x5-pin header / (1) 3 holes Audio Jack connector	
System Monitoring	Chipset	Aspeed AST2500	
	Fan	Total (5) 4-pin headers	
	Temperature	Monitors temperature for CPU, memory & system environment	
	Voltage	Monitors voltage for CPU, memory, chipset & power supply	
	LED	Over temperature warning indicator / Fan & PSU fail LED indicator	
	Others	Watchdog timer support	
Audio	Chipset	Realtek ALC888S	
	Feature	2.1 ch	
Server Management	Onboard Chipset	Onboard Aspeed AST2500	
	AST2500 iKVM Feature	24-bit high quality video compression / Supports storage over IP and remote platform-flash / USB 2.0 virtual hub	
	AST2500 IPMI Feature	IPMI 2.0 compliant baseboard management controller (BMC) / 10/100/1000 Mb/s MAC interface	
BIOS	Brand / ROM size	AMI / 32MB	
	Feature	Hardware Monitor / Boot from USB device/PXE via LAN/Storage / Console Redirection / User Configurable FAN PWM Duty Cycle / SMBIOS	

Parameter	Technical Specifications		Compliance (Yes/No)
		3.3/PnP/Wake on LAN / ACPI 6.2 / ACPI sleeping states S5	
Physical Dimension	Form Factor	1U 4 Bay Model with 1200W 80 Plus Platinum Redundant Power Supply	
OS	Windows	Win. Server 2022 Standard OEM Pack	
Regulation	BIS	Yes	
	CE	Yes	
	QCI	Yes	
	ISO	9001, 14001, 27001	
Operating Environment	Operating Temp.	0° C ~ 40° C (32° F ~ 104° F)	
	Non-operating Temp.	- 40° C ~ 70° C (-40° F ~ 158° F)	
	In/Non-operating Humidity	90%, non-condensing at 35° C	
Support	Warranty	3 Years Standard, Warranty details should reflect on OEM website	

ix. SPECIFICATION OF PLUG-IN, DATABASE & E-CHALLAN SERVER

Parameter	Technical Specifications		Compliance (Yes/No)
Processor	Socket Type	Single socket LGA4189	
	Supported CPU Series	4th Gen Intel Xeon Scalable Processor	
	CPU Populated	Intel Xeon Gold 5318Y Processor 24 Core (36M Cache, 2.10 Ghz)	
Chipset	PCH	Intel C621A	
Memory	Supported DIMM Qty	(8) DIMM slots	
	DIMM Type / Speed	DDR4 ECC RDIMM /LRDIMM 3200	
	Capacity	Should support up to 1,024GB RDIMM/ 2,048GB LRDIMM/ 2,048GB RDIMM 3DS/LRDIMM 3DS	
	Memory channel	8 Channels per CPU	
	Memory Capacity	2x32GB DDR4 RDIMM	
Expansion Slots	PCIe	3 PCIe Gen.4 x16 + 2 PCIe Gen.4 x8 slots	
LAN	Q'ty / Port	(2) 10GbE + (1) 1GbE port + (1) GbE dedicated for IPMI	
	Controller	Intel I210	
	PHY	Realtek RTL8211E	
Storage SATA	Drive Slots	(8) 3.5"/2.5" hot swap HDD slots	
	Controller	Intel C621A	
	Speed	6Gb/s	
	RAID	RAID 0/1/10/5 (Intel RSTe)	
	Storage Capacity	2 x Enterprise SATA 480GB SSD 2.5" and 4 x Enterprise 3.5" SATA 6Gb/s HDD, 18TB, 7200 rpm	
RAID	Hardware RAID	12 Gb/s PCI Express SATA/SAS 4GB RAID Controller	
	Connector (M.2)	(2) 22110/2280 (by PCIe Gen.3 interface)	

Parameter	Technical Specifications		Compliance (Yes/No)
Storage NVMe	Connector (U.2)	(1) SFF-8654 for (2) NVMe ports	
Graphic VGA	Connector type	D-Sub 15-pin	
	Resolution	Up to 1920x1200	
	Chipset	Aspeed AST2500	
GPU	GPU Card	NVIDIA A2 16GB PCIe Gen4 Passive GPU	
Input /Output	USB	(2) USB2.0 ports (@ rear) / (2) USB3.0 ports (@ rear) / (2) USB3.0 ports (via cable)	
	COM	(1) DB-9 COM Connector	
	VGA	(1) D-Sub 15-pin VGA port (@ rear)	
	RJ-45	(2) 10GbE + (1) 1GbE port + (1) GbE dedicated for IPMI	
	Audio	(1) 2x5-pin header / (1) 3 holes Audio Jack connector	
System Monitoring	Chipset	Aspeed AST2500	
	Fan	Total (5) 4-pin headers	
	Temperature	Monitors temperature for CPU, memory & system environment	
	Voltage	Monitors voltage for CPU, memory, chipset & power supply	
	LED	Over temperature warning indicator / Fan & PSU fail LED indicator	
	Others	Watchdog timer support	
Audio	Chipset	Realtek ALC888S	
	Feature	2.1 ch	
Server Management	Onboard Chipset	Onboard Aspeed AST2500	
	AST2500 iKVM Feature	24-bit high quality video compression / Supports storage over IP and remote platform-flash / USB 2.0 virtual hub	
	AST2500 IPMI Feature	IPMI 2.0 compliant baseboard management controller (BMC) / 10/100/1000 Mb/s MAC interface	
BIOS	Brand / ROM size	AMI / 32MB	
	Feature	Hardware Monitor / Boot from USB device/PXE via LAN/Storage / Console Redirection / User Configurable FAN PWM Duty Cycle / SMBIOS 3.3/PnP/Wake on LAN / ACPI 6.2 / ACPI sleeping states S5	
Physical Dimension	Form Factor	2U Rackmount with 1200W 80 Plus Platinum Redundant Power Supply	
OS	Windows	Win. Server 2022 Standard OEM Pack	
Regulation	BIS	Yes	
	CE	Yes	
	QCI	Yes	
	ISO	9001, 14001, 27001	
Operating Environment	Operating Temp.	0° C ~ 40° C (32° F~ 104° F)	
	Non-operating Temp.	- 40° C ~ 70° C (-40° F ~ 158° F)	
	In/Non-operating Humidity	90%, non-condensing at 35° C	
Support	Warranty	3 Years Standard, Warranty details should reflect on OEM website	

x. **SPECIFICATION OF NGFW FIREWALL**

Sl. No.	Specifications	Compliance (Yes/No)
	1. General	
a.	The appliance-based security platform should support firewall, AVC, Anti malware, Anti-Bot, Ant-Spyware, URL and IPS functionality in a single appliance from day one.	
b.	Proposed appliance can be extendable up to 256 GB SSD.	
c.	Hardware Appliance based firewall with a multicore CPU architecture with a hardened 64-bit OS and capable of providing URL/Web Protection, Application Control, IPS, DOS/DDOS protection, SSL / TLS Inspection & zero-day protection in a single appliance.	
d.	The appliance should have minimum 8 x 10/100/1000 Base T Ethernet Port	
e.	The appliance should have minimum 2 x 2.5 SFP+ Port.	
f.	The appliance should have minimum 1 console and 2 x USB 3.0.	
	2. Sizing Parameters:	
a.	Should have 1.5 Gbps or more throughput with all features enabled Under Test Condition, 3 Gbps or more throughput in Real World/Prod Performance Under Test Condition and 1.5 Gbps or more Threat prevention throughput with enabling Application-ID/AVC, NGIPS, Anti-Virus, Anti-Spyware, Anti Malware, Zero- day attacks.	
b.	Firewall should have at least 1.5 Gbps of IPSec VPN throughput.	
c.	Firewall should have at least 3 Gbps of firewall inspection throughput.	
d.	Firewall should support at least 16K new connections per second or more and shall support at-least 1.2 Million concurrent session/connection with all application control enabled.	
e.	Proposed solution should support minimum 2 Gbps IPS throughput	
f.	Proposed solution should support minimum 600 Mbps of TLS/SSL inspection and decryption throughput	
g.	Proposed solution should support minimum 250K Deep packet inspection connection	
h.	Proposed solution should support minimum 33K SSL Deep packet inspection connection	
i.	No of VLANs - 200	
j.	Minimum IPSec VPN peers - 150	
	3. NG Firewall Features:	
a.	Should support manual NAT and Auto-NAT, Static NAT, Dynamic NAT, Dynamic PAT.	
b.	The firewall have the capability of identifying the network traffic of network hosts from both virtual and physical machines and their activities.	

Sl. No.	Specifications	Compliance (Yes/No)
c.	Should be capable of detecting and blocking IPv4 and IPv6 attacks including capabilities like DNS security / equivalent.	
d.	Solution should support capability to detect threats emerging from inside the network.	
e.	The solution must provide IP reputation feed that comprised of several regularly updated collections of poor reputation of IP addresses determined by the proposed security vendor.	
f.	The detection engine should support capability of detecting and preventing a wide variety of threats (e.g., network probes/reconnaissance, VoIP attacks, buffer overflows, P2P attacks, etc.).	
g.	The proposed firewall shall perform application-based signature matching beyond the traditional hash base signatures for AVC.	
h.	The proposed firewall shall be able restrict application traffic to its default ports to prevent evasive applications from running on non-standard ports.	
i.	The proposed firewall shall be able to protect the user from the malicious content upload or download by application/protocol by enforcing the total threat protection for known and unknown malicious content such as virus, malware or a bad URL.	
j.	Support NAT, PAT & Policy based NAT/PAT, Mapped IP (MIP) & Virtual IP(VIP).	
k.	IPSec and SSL VPN Tunnelling	
4	Data encryption support DES, 3DES, AES 128-, 256-bit	
5	Support stateful HA in Active-Active or Active-Passive Mode	
6	Tunnelling functionality Nat66 (IPv6-to-IPv6) & Nat 64 (IPv6-to-IPv4).	
7	IP address assignment features PPPoE, DHCP	
8	The proposed firewall should support Bi-directional raw TCP inspection that scans raw TCP streams on any port .	
9	The Firewall should support deep packet SSL to decrypt HTTPS traffic for scanning(IPS, Gateway Antivirus, Content Filtering, Application control) transparently for future requirement and then re-encrypt and send to destination if no threat found.	
10	Firewall must support Cloud based / On Prem Advanced Threat Protection solution from day one and both the solution should from same OEM.	
11	The firewall should have ability to prevent potentially malicious files from entering the network and those files sent to the sandbox for analysis to be held at the gateway until a verdict is determined.	
12	IPv6 features Syn Cookie, Syn-proxy DoS attack detection, SIP, RTSP, ALG's, BGP4, DHCPv6 Relay, GRE IPv4 to IPv6 tunnelling.	
13	System management and configuration Using web GUI/client based (without any limitation in number of clients), Command Line interface (console/SSH).	

Sl. No.	Specifications	Compliance (Yes/No)
14	Supporting Protocols FTP, SMTP, HTTP, HTTPS, SNMP, UDP, ICMP, RPC, DNS, DHCP, ARP, TCP, POP3, IGMP, PIM.	
15	Authentication protocols RADIUS, LDAP methods	
16	Routing protocols Static, RIP, OSPF, OSPFv3 and BGP, BGPv6.	
17	content filtering JAVA & ActiveX blocking	
18	Proposed FW shall also support:	
a.	DoS & DDoS prevention	
b.	TCP reassemble for fragmented packet protection	
c.	Brute Force attack mitigation	
d.	SYN cookie protection	
e.	Zone / Interface based IP spoofing	
f.	Malformed packet protection	
g.	Stateful packet inspection	
h.	Detail logging and packet capture	
19	Should have facility to block the URL's based on categories, granular control like Allow/Block, Bandwidth Management, Passphrase override, Notify. URL database should have at least 15-20 million sites and 80 + categories	
20	Should support deep packet SSL to decrypt HTTPS traffic for scanning(IPS, Gateway Antivirus, Content Filtering, Application control) transparently for future requirement and then re-encrypt and send to destination if no threat found.	
21	The Appliance OEM must have its own threat intelligence analysis center and should also use the global footprint of security deployments for more comprehensive network protection	
22	The proposed system should have future flexibility to access a cloud-based management system to manage Firewall.	
23	Proposed Appliance should support SD WAN features without adding any additional hardware components & Necessary licenses, if required, need to be provisioned from day 1.	
24	The Firewall Solution must have option of Onprem / Cloud based dedicated centralized analytics, logging, reporting & Management from same OEM for future requirement. The solution should support customized reporting with the capability to create scheduled reports. The reporting platform must be accessible via a web-based interface / client-based GUI (without any limitation in number of client).	
25	Should detect and prevent hidden attacks that leverage cryptography, blocks encrypted malware downloads, ceases the spread of infections, and thwarts command and control (C&C) communications and data exfiltration. Should protect against DDoS/DoS attack using both Layer 3 SYN proxy and Layer 2 SYN blacklisting technologies. It protects against DOS/DDoS through UDP/ICMP flood protection and connection rate limiting	

Sl. No.	Specifications	Compliance (Yes/No)
26	The proposed firewall should support Bi-directional raw TCP inspection that scans raw TCP streams on any port and bi-directionally to detect and prevent both inbound and outbound threats. Solution should have single-pass DPI architecture simultaneously scans for malware, intrusions and application identification and ensuring that all threat information is correlated in a single architecture.	
27	The Firewall Solution must have option of Onprem / Cloud based dedicated centralized analytics, logging, reporting & Management from same OEM for future requirement. The solution should support customized reporting with the capability to create scheduled reports. The reporting platform must be accessible via a web-based interface / client-based GUI (without any limitation in number of client).	
28	The firewall should have ability to prevent potentially malicious files from entering the network and those files sent to the sandbox for analysis to be held at the gateway until a verdict is determined.	
29	IPv6 features Syn Cookie, Syn-proxy DoS attack detection, SIP, RTSP, ALG's, BGP4, DHCPv6 Relay, GRE IPv4 to IPv6 tunneling.	
30	Solution shall support cloud based Sandboxing technology for preventing zero day threats with detecting 99.99% of previously unknown threats. Latest published report must be available in publicly.	
31	The Firewall should support both for analysis of a broad range of file types, either individually or as a group, including executable programs (PE), DLL, PDFs, MS Office documents, archives, JAR, and APK plus multiple operating systems including Windows, Android, Mac OS X and multi-browser environments. Should have ability to prevent potentially malicious files from entering the network and those files sent to the sandbox for analysis to be held at the gateway until a verdict is determined.	
32	Should have ability to prevent potentially malicious files from entering the network and those files sent to the sandbox for analysis to be held at the gateway until a verdict is determined.	
33	Should have continuously updated database of tens of millions of threat signatures residing in the sandbox servers and referenced to augment the capabilities of the onboard signature database, providing deep packet inspection with extensive coverage of threats. Should support min 20K DPI signatures, 70 millions Cloud AV signatures and 3500+ Application Signatures from day 1.	
	34. Warranty and Support	
a.	All Required features of new firewall, on-prem management & reporting software should be done by OEM.	
b.	License for NGFW high availability with next generation firewall security applications, including intrusion protection, application control, URL filtering, Anti-Bot, Anti-Virus, DNS protection, advanced	

Sl. No.	Specifications	Compliance (Yes/No)
	threat protection, Anti-Spam, and Basic 24x7 Support.	
c.	The License for Management, Reporting and any other license required to meet the above features should be provided from day 1 for min. period 5 (five) years.	
d.	The proposed solution including Firewall, Transceivers, Sandboxing, ZTNA, Management & Reporting must be from the same OEM for better correlation.	
e.	A 5-year comprehensive warranty and support for hardware, software updates and patches shall be offered directly from the OEM	
f.	The bidder/OEM must offer Cyber warranty/insurance along with the proposed NGFW firewall for covered losses that lead to business interruption from Non-volumetric DDOS attack and Unauthorized remote access types of events.	
g.	OEM should have TAC and R&D center in INDIA. The proposed solution should support 24x7 remote technical support by OEM through chat/email / remote access.	
	35. Industry Standard/Certification	
a.	Supply, Installation, Integration, testing commissioning and training as per site requirements shall be done by the product certified Engineer of bidder/ OEM.	
b.	The product shall comply minimum 30% and Above Local content or higher.	
c.	The proposed appliance should come from firewall appliance family which has more than 5 years of ICSA labs certification/NSS/NDP/ Indian Standard, IC3S/Common Criteria.	
d.	OEM should have scored a minimum of 97% in Exploit Block rate and 93% in Security Effectiveness in the last NSS Lab report for NGFW (2019).	
e.	The firewall should have FIPS 140-2/3, IPv6/USGv6 and Common Criteria/EAL4+ certified certifications from day one.	
f.	The certificate of authorization (MAF) for this bid must be submitted with bid. Bidders need to submit MAF from respective OEM is mandatory, otherwise authority should have right to cancel the Bidder.	
g.	During Technical evaluations or Prior to Price bid open, Bidder need to do 7-15 Days POC if asked; POC will be at our premises and during POC if found product is not complying with mentioned requirement than authorities has the right to reject the bid during technical evaluations.	

xi. SPECIFICATION OF 216 TB SINGLE CTRL. TRUE UNIFIED STORAGE.

Sl. No.	Technical Specification	Compliance (Yes/No)
1	Proposed storage system should have 3U Rack mountable &	

Sl. No.	Technical Specification	Compliance (Yes/No)
	should support minimum 12x 2.5"/3.5" SATA/SAS HDD . System component like power supplies, cooling fans, controllers, host boards, HDD/SSD drives should be cable less & modular in design to lower maintenance complexity.	
2	should have at least 1x Intel Xeon 2.2Ghz or higher CPU	
3	System should have Default 32GB DDR4 memory & expandable up to 64GB	
4	System should have at least 4x1 GbE & 2x 10G SFP+ ports	
5	System Should have 1 number of replaceable modular Card Slot per.	
6	Below Cards should be supported in each slot and possible to inter change the card without the need to change or upgrade the storage controller	
7	2 x 16 Gb/s FC 4 x 8 Gb/s FC 2 x 10 Gb/s iSCSI (RJ45) 4 x 10 Gb/s iSCSI (SFP+) 4 x 1 Gb/s iSCSI 2 x 40GbE/iSCSI ports (QSFP) 2 x 12Gb/s SAS ports	
8	Initially Quoted with 4x1GbE & 2x 10G SFP+ ports	
9	Support drives including SSD, SATA or SAS HDD in the same enclosure	
10	2.5" SATA SSDs 3.5" 7200 rpm SATA HDD	
11	Storage Capacity: Should be quoted with minimum 216 TB after RAID6 + Hot Spare with 7200RPM Enterprise class HDD and each individual drive capacity should not be more than 18TB.	
12	Proposed storage should have true unified storage architecture. should support File, Block and Object storage within the same system and it should support Scale out feature with at least 4 appliances or more in single cluster (single namespace) without adding additional node, File Gateway or metadata controller for file level, cloud level access or for Scale out feature . All these protocols should be supported and licenses for full storage capacity should be quoted for the duration of the product lifecycle NFS, CIFS/SMB, AFP, FTP, SFTP, WebDAV, REST API, 1Gb/s, 10Gb/s and (RJ-45, SFP+), 10Gb/s FCoE, 8Gb/s, 16Gb/s Fibre Channel.	
13	Storage should be able to separate the File Level share folder control with file protocols for secure file sharing process (like share a folder on HTTP or FTP only and share another on CIFS or AFP only.	
14	Automated support request Proposed Storage should have option to automatically create support ticket with relevant logs with the OEM support in case of critical event.	

Sl. No.	Technical Specification	Compliance (Yes/No)
15	System should be scalable to minimum 432 drives by using 12G SAS connected expansion enclosure.	
16	Support inbuilt file system which can support single volume size up to 2PB. License for full capacity should be quoted upfront	
17	Cloud - Support cloud provider: Amazon S3, Aliyun, Microsoft Azure, Openstack Swift, Google Cloud. If any additional hardware is required for cloud integration it should be quoted for the full capacity upfront	
18	Cloud Disaster Recovery automatically make the hidden snapshot to cloud, allow administrator to use the last snapshot for roll-back.	
19	Support deduplication/compression feature before data migrate to cloud provider	
20	Storage should support Automated Storage Tiering, SSD Cache, Thin Provisioning, Volume Mirror/Copy, Block level Remote replication, File level Remote Replication (Rsync), Snapshot.	
21	Storage should offer IDR or similar technology for superior RAID protection and recovery compared to generic RAID which helps increasing integrity and system efficiency while keeping data secure against errors and loss.	
22	Intelligent multi-level drive spin-down	
23	Relative humidity: 5 to 95% non-condensing, operating and non-operating	

xii. SPECIFICATION OF WORKSTATIONS FOR OPERATOR

SL. No.	Parameter	Description	Compliance (Yes/No)
1	Processor	Core i9 13th generation with min 3.2 GHz clock speed, 8 MB cache or better	
2	Chipset	Suitable Intel	
3	RAM	32 GB DDR4 or better	
4	HDD	1 TB SATA/SSD	
5	Drive Controllers	Integrated 6-channel SATA 3Gb/s controller, RAID 0, 1 and 5 capable. One port enabled for e-SATA.	
6	Optical Drive	DVD-R/W	
7	Keyboard & Mouse	USB Keyboard & Mouse	
8	Audio	Integrated Audio	
9	Bays/Slot	2 external 5.25-inch bays, 2 internal 3.5- inch HDD bays Minimum 2 PCI Express slots & 2 PCI slots	
10	RTS	6 USB 2.0, 1 microphone in, 1 headphone out, 1 D-SUB & 1 DVI-D/HDMI compatible with supplied monitor	
11	LAN ports	2 Nos Gigabit Ethernet Ports	
12	Networking	Integrated Gigabit Ethernet Card with	

SL. No.	Parameter	Description	Compliance (Yes/No)
		Management capabilities	
13	Graphics Card	Graphics Controller with additional Graphics card of 6GB	
14	Ports	4 or more USB ports with minimum 2 ports supporting USB 3.0	
15	Operating System	latest Windows Professional version 64 bit or equivalent or higher	
16	Power Supply	230 VAC +/- 10%, 50 Hz	
17	Monitor	24" LED latest state of art monitor; make: reputed	
18	Software	1. System Software Manager should be available free of cost. 2. Symantec or any other OEM approved Antivirus software with minimum 3 years validity after installation. If licence renewal during these 3 years is reqd, it will be done by the bidder free of cost before validity expiry. Regular updates & the latest virus definitions will be supplied by the bidder free of cost during this period	

xiii. SPECIFICATION OF LAYER 3 MANAGED CORE SWITCH

S. No.	General Specifications	Compliance (Yes/No)
1.1	General Features :	
1.1.1	Switch shall be 1U to 3U and rack mountable in standard 19" rack.	
1.1.2	Switch shall have 16 GB RAM and 16 GB Flash	
1.1.3	Switch should support optional SSD to host 3rd party container based application.	
1.1.4	Switch shall have hot swappable 1:1 redundant internal power supply and redundant fan.	
1.1.5	Switch must have dedicated port, in addition to asked uplink ports. Should support for minimum 400 Gbps of stacking throughput.	
1.1.6	Shall support In Service Software Upgrade (ISSU) to provide an upgrade of the entire platform or an individual task/process without impacting hardware forwarding. ISSU supports upgrades, downgrades, and rollbacks.	
1.2	Performance :	
1.2.1	Switch must have non-blocking switch fabric and forwarding rate	

S. No.	General Specifications	Compliance (Yes/No)
1.2.2	Switching system shall have minimum 32K MAC Addresses and 512 VLANs.	
1.2.3	Switch should support minimum 4K ACLs, 8K Multicast and 30K IPv4, 15K IPv6 Routes..	
1.2.4	Switch shall support application visibility and traffic monitoring with minimum 60 K sflow/jflow/netFlow entries.	
1.2.5	Packet buffer : 16 MB	
1.2.6	The offer product series should be IPv6 logo certified from day one	
1.3	Functionality :	
1.3.1	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES), 802.3x, 802.1p, 802.1Q, 1588v2	
1.3.2	Should support AES-256 support with MACSEC-256 encryption algorithm on hardware	
1.3.3	Support BGP, MPLS, IS-IS, VRF, VXLAN, NAT, OSPF Routed Access, Policy-Based Routing (PBR), PIM SM, and Virtual Router Redundancy Protocol (VRRP)	
1.3.4	Shall have 802.1p class of service, marking, classification, policing and shaping. Should support strict priority queuing.	
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, IGMP, Netconf/YANG.	
1.3.6	Switch should support port security, DHCP snooping, Spanning tree root guard, First Hop Security.	
1.3.7	IPv6 support in hardware, providing wire rate forwarding for IPv6 network	
1.3.8	Should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.	
1.3.9	Eight egress queues per port for different types.	
1.3.10	During system boots, the system's software signatures should be checked for integrity. System should capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.	

S. No.	General Specifications	Compliance (Yes/No)
1.4	Interface	
1.4.1	24 × 10/100/1000 Mbps RJ45 Ports with 1G / 10G / 25G / 40G High-Speed Uplink Support SFP / SFP+ / SFP28 / QSFP+	
1.5	Certification:	
1.5.1	Switch shall conform to UL 60950, IEC 60950, CSA 60950, EN 60950 Standards	
1.5.2	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.	

xiv. SPECIFICATION OF 24 PORT POE MANAGED SWITCH WITH 4 SFP PORT

S. No.	General Specifications	Compliance (Yes/No)
1.1	General Features:	
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.	
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1. *	
1.1.3	Switch should have minimum 2 GB RAM and 2 GB Flash.	
1.1.4	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 48 Gbps of stacking throughput with 8 switches in single stack.	
1.2	Performance:	
1.2.1	Switch shall have minimum 128 Gbps of switching fabric and 95.23 Mpps of forwarding rate. *	
1.2.2	Switch shall have minimum 16K MAC Addresses and 250 active VLAN.	
1.2.3	Should support minimum 11K IPv4 routes or more	
1.2.4	Switch shall have 1K or more multicast routes.	
1.2.5	Switch should support at least 16K flow entries	
1.2.6	Switch should support 128 or more STP Instances.	
1.2.7	Switch should have 6MB or more packet buffer.	
1.3	Functionality :	
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.	
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF, VRRP, PBR and QoS features from Day1	
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.	

S. No.	General Specifications	Compliance (Yes/No)
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.	
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .	
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.	
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.	
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.	
1.3.9	During system boots, the system's software signatures should be checked for integrity. System should capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.	
1.4	Interfaces	
1.4.1	Switch shall have 24 nos. 10/100/1000 Base-T ports and additional 4 nos. SFP+ uplinks ports.	
1.4.2	All 24 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 370 W.	
1.5	Certification:	
1.5.1	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.	
1.5.2	Switch shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.	
1.5.3	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.	
1.5.4	OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure for last 2 years before releasing this RFP.	

xv. SPECIFICATION OF FIELD SWITCH 8 PORT POE MANAGED SWITCH WITH 2 SFP PORT

S. No.	General Specifications	Compliance (Yes/No)
1.1	General Features:	
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.	

S. No.	General Specifications	Compliance (Yes/No)
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1. *	
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash.	
1.1.4	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 20 Gbps	
1.2	Performance:	
1.2.1	Switch shall have minimum 128 Gbps of switching fabric and 95.23 Mpps of forwarding rate. *	
1.2.2	Switch shall have minimum 16K MAC Addresses and 250 active VLAN.	
1.2.3	Should support minimum 11K IPv4 routes or more	
1.2.4	Switch shall have 1K or more multicast routes.	
1.2.5	Switch should support at least 16K flow entries	
1.2.6	Switch should support 128 or more STP Instances.	
1.2.7	Switch should have 6MB or more packet buffer.	
1.3	Functionality :	
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.	
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF, VRRP, PBR and QoS features from Day1	
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.	
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.	
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .	
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.	
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.	
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.	
1.3.9	During system boots, the system's software signatures should be checked for integrity. System should capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.	
1.4	Interfaces	

S. No.	General Specifications	Compliance (Yes/No)
1.4.1	Switch shall have 8 Nos .10/100/1000 Based- T Ports additional 2 Nos SFP Uplink Ports	
1.4.2	All 8 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 120 W.	
1.5	Certification:	
1.5.1	Switch shall conform toUL (UL 62368), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A Standards for Safety requirements of Information Technology Equipment.	
1.5.2	Switch shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.	
1.5.3	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.	
1.5.4	OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure for last 2 years before releasing this RFP.	

xvi. SPECIFICATION OF CAT6 UTP CABLE OUTDOOR ARMoured

SL. No.	Descriptions	Compliance (Yes / No)
1	Cat 6 cable should be Double Jacket and suitable for outdoor installation	
2	This cable should meet the requirements of TIA/EIA-568-C.2 and ISO/IEC 11801 channel performance up to minimum 85mtr	
3	Cable should be UV Resistant	
	Cable outer Jacket should be PE and inner jacket should be PVC	
4	Color of Jacket: Black	
5	Conductor: Solid Bare Electrolytic Grade Copper	
6	Cable conductor should be 23AWG	
7	Insulation: Polyethylene	
8	Insulation Diameter 1.04 ± 0.05 mm	
9	Sequential Marking: At Every Meter	
10	Thickness of Inner Jacket: $0.45 \text{ mm} \pm 0.05 \text{ mm}$	
11	Thickness of Outer Jacket: $0.55 \text{ mm} \pm 0.05 \text{ mm}$	
12	Approximate OD: 7.1 mm	
13	Packaging: Reel of 305Mtr	
14	ISO 45001:2018 & ISO 14064-1: 2006 certified. Certificates must be submitted along with the bid.	
15	Electrical Properties:	
16	Conductor Resistance (DC): 9.38Ω ohms /100mtr@20°C. Max.	
17	Resistance Unbalance: 5 % Max.	
18	Mutual Capacitance: 5.6 nF/100 mtrs Max.	

SL. No.	Descriptions	Compliance (Yes / No)
	Capacitance Unbalance Pair/Ground: 330pF/100M MAX	
19	Delay Skew: ≤ 45 nS/100M	
20	Normal Velocity of Propagation: 69%	
21	Impedance: $100 \pm 15\% \Omega$	
22	Mechanical Properties:	
23	Bend Radius: 8 X Cable Diameter	
24	Storage Temperature: -20°C to 60°C	
25	Operating Temperature: -20°C to 60°C	
26	Cat 6 cable should be Double Jacket and suitable for outdoor installation	
27	This cable should meet the requirements of TIA/EIA-568-C.2 and ISO/IEC 11801 channel performance up to minimum 85mtr	

xvii. SPECIFICATION UTP PATCH CORD - 3 MTR

SL.No.	Descriptions	Compliance (Yes / No)
1	Category 6 UTP Patch Cord – 3Mtr	
2	The work area equipment cords shall, at a minimum comply with proposed TIA/EIA-568-C.2 Commercial Building Cabling Standards Transmission Performance Specifications for 4 pair Category 6 Cabling. UL Listed & ETL Verified	
3	Equipped with modular 8-position modular plugs on both ends, wired straight through with standards compliant wiring.	
4	OEM should have ISO 14064-1: 2006 certification	
5	Mechanical Feature of Cable:	
6	Conductor size: 24 AWG multi-strands bare copper	
7	Jacket: FR-PVC	
8	Mechanical Feature of Plug:	
9	Operating life: Minimum 750 insertion cycles	
10	Contact blade: Copper Alloy	
11	Operating temperature: -10°C to 60°C	
12	Factory Crimped Patch Cord with Factory Moulded Boot	

xviii. SPECIFICATIONS 6 CORE FIBER OPTIC CABLE

Sl. No	Technical Specification	Compliance (Yes/No)
1	6 Core Single Mode Outdoor Armored Fiber Optic Cable	
2	Corrugated Steel tape Armored	
3	Central loose tube with jelly compound, Glass Yarns In between steel Tape & Loose Tube	
4	Sequential meter marking	

Sl. No	Technical Specification	Compliance (Yes/No)
5	The fiber should fulfil the requirement of IEC 793-2:1992, EN 188101, ITU-T Recommendation G.652	
6	Outer Diameter: 9.0±0.3mm	
7	Thickness of HDPE Jacket: 1.8±0.2mm	
8	Pulling Tension: Short Term (1000N)	
9	Crush Load: 2000N/100mm	
10	Bend Radius: Short Term (20D)	
11	The fiber type is a Matched Cladding Single Mode	
12	Fiber dual coated with acrylate coating.	
13	The fiber is optimized for operation at 1310 nm and at 1550 nm.	
14	Nominal Mode Field Diameter: 9.2 µm	
15	Cladding Diameter: 125 µm	
16	PMD (ps/km): 0.2	
17	Cable Cut-off Wavelength: 1260nm	
	Attenuation (of cable with fibers):	
18	At 1310 nm: <= 0.36 dB/km	
19	At 1550 nm : <= 0.22 dB/km	

xix. FIBER RACKMOUNT LIU LOADED TYPE 24 PORT

S. No.	Parameter	Specification	Compliance (Yes/No)
1	Type	1U, 19 Inch Rack Mount Fiber Enclosure (LIU) including Splice Trays and Adapter Strips which accepts loose tube & distribution cable	
2	Fiber Interface Unit	Fiber Patch Panel Typically used in Server rooms, Network rooms, Data Centers 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.	
3	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.	

S. No.	Parameter	Specification	Compliance (Yes/No)
		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	
4	Material	Panel be constructed with SPCC (Cold rolled steel sheet)	
5	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)	
6	Adapter Types	Pigtails consist of LC, SC, FC, ST, MTRJ, and E2000 Connectors.	
7	Pigtails Type	Pigtails shall be constructure with bend Insensitive Fiber	
8	Insertion Loss	≤0.2 dB (Single mode)	
9	Return Loss	≥50 dB (UPC), (Single mode) , ≥60 dB (APC) (Single mode)	
10	Repeatability	≤0.1dB	
11	Durability	≤0.2 dB, 1000mattings	
12	Ferrule Material	Zirconia Ceramic	
13	Operating Temperature	-25 °C to +70 °C	
14	Regulatory Compliances	Compliant as per RoHS Directive 2011/65/EU and (EU) 2015/863	
		OEM should be an ISO9001, ISO 14001 and ISO 45001 should have its Manufacturing units, Components and Finished Goods Warehouse in India. All Related documents to be submitted.	
		The Proposed OEM should be a member of BICSI and should have a CDCP and a PMI-PMP / RCDD on the OEM's payroll sitting in India whose services can be utilized for this project.	
		OEM offered must be in India / SAARC for at-least 10 years or more. Should have Indian Technical Support Centre, Warehouse and RMA center in India.	

xx. 1000 BASE 1310NM SM TRANSCEIVER MODULE

SL. No	Specification	Compliance (yes/ No)
1	1000Base-LX Single Mode SFP Transceiver with Duplex LC Connector	
2	Support IEEE802.3z 1000BASE-LX	
3	At least 10Km distance support on single mode fiber interface	
4	Output TX Optical Power MAX.: -3dBm MIN.: -8 dBm	
5	Output RX Optical Power MAX.: -3dBm MIN.: - 24 dBm	
6	Sensitivity -24dBm	
7	Cable Type single-mode 9/125um fiber	
8	Operating wavelength: 1310nm	
9	Should be same make as switches.	

xxi. SPECIFICATION OF Cat6 UTP PATCH PANEL 24 PORT

SL.No.	Descriptions	Compliance (Yes / No)
1	24-Port Cat6 Fully loaded UTP Patch Panel	
2	Patch Panel made of powder coated steel, in 24 port configurations.	
3	Allow for a minimum of 200 re-terminations without signal degradation below standards compliance limit.	
4	Have port identification numbers on the front of the panel.	
5	IDC: Suitable for 22-26 AWG stranded and solid wire compatible with both 110 & Krone punch down tools	
6	The Cat-6 transmission performance is in compliance with the ANSI/TIA/EIA 568C.2 standard	
7	ISO 45001:2018 & ISO 14064-1: 2006 certified. Certificates must be submitted along with the bid.	
8	Mechanical Characteristics:	
9	Plastic Housing: PBT + Glass Fiber, UL94V-0 rated	
10	Jack Connector	
11	Operating Life: Minimum 750 insertion cycles	
12	Material: Phosher bronze with nickel plated	
13	Contact Plating: 50μ" Gold plated on plug contact area	
14	IDC Connector	
15	Plastic Housing: Polycarbonate	
16	IDC Contact Plating: Phosphor bronze with tin plated	
17	Wire Accommodation: 22-26 AWG solid	
18	Contact resistance: 20Milliohms	
19	Insulation resistance: 100 Mega Ohms @ 500V DC	

xxii.

xxiii. Specifications of ON-LINE UPS – 1KVA

SI No	Characteristic	Specification	Compliance Yes/No
1.	Capacity	1KVA, 800 Watt (1Ø input/ 1Ø output)	
2.	Topology	True Online Double Conversion UPS	
3.	Technology	IGBT Based	
4.	INPUT		
5.	Input Facility	1Ø, 2-wire & Ground, (Phase & Nuetral + Ground)	
6.	Input Voltage Range	1Ph,L-N+PE (175 to 270 Vac on full load)	
7.	Input Frequency Range	45 ~55Hz	
8.	Input Power Factor	≥0.99	
9.	OUTPUT		
10.	Power Factor	0.8	
11.	Nominal Output Voltage	220/230/240Vac shall be available with +/-1% regulation in battery mode	
12.	Voltage regulation	± 1% static, ± 5% for Dynamic Load	
13.	Nominal Frequency	50Hz±2% (Synrchonized to Mains)	
14.	Waveform	Sine wave	
15.	Crest factor	3:1	
16.	Total harmonic distortion (THDv)	< 3% (linear load); <5% (nonlinear load)	
17.	Output Short Circuit Protection	Electronic, trip	
18.	Transfer time	Mains mode to battery mode: 0 ms; Inverter mode to bypass mode: < 4ms	
19.	Maintenance Bypass	Automatic & Manual	
20.	Output Connection	Terminal at bottom or Indian Socket	
21.	DC Ripple factor	≤1%	
22.	Efficiency	Overall (AC to AC) : ≥87%	
23.	Overload Protection	>100% ~ 110%: for 5 mins;	
24.		>110% ~ 125%: for 1 min;	
25.	Surge Protection Device (SPD):	Type 2 , Single Phase Two pole , AC - SPD	
		Suitable for TNS System (1Ph+N) ,	
		Un - 230 VAC	
		Uc - 320V	
		I _{max} - 40kA	
		I _n - 20kA	

SI No	Characteristic	Specification	Compliance Yes/No
		Up - <= 1.5kV	
		1. Should have Reversible installation facility : reversible chassis to allow cable entry from above or below	
		2. Should have clear display of protection end of life of cartridge.	
		3. Two types of terminal : for rigid or flexible cable and for fork type comb bus bar.	
		4. Should have thermal disconnection system.	
		5. Should have Cartridge security System : vibration proof insertion 'click' effect .	
		6. Should have individual Mechanical cartridge Coding for safety system to avoid possible cartridge replacement error.	
BATTERY & BATTERY BANK CHARGER			
26.	DC BUS voltage	36VDC or Higher	
27.	Battery Configuration	Minimum VAh should be 936 VAh for 30mins Battery Backup	
28.	Batteries Type	SMF BATTERY	
29.	Battery Make	Exide/HBL/Quanta	
30.	Battery re-charge time (After complete discharge) to 90% capacity	8-10 Hours , UPS Charger should be 10% of the Battery Ah Capacity	
31.	Battery Housing	Should be compact and space saving MS Steel Open Racks complete with interconnectors	
32.	Interfaces	Should support DOS/UNIX/WINDOWS OS, RS 232 Connector should be available	
33.	Cold Start	should be provided	
34.	Environmental		
35.	Operating Temperature	0-50 deg C with full load	
36.	Type of Cooling	Forced Air	
37.	Noise Level	<55 dBA at 1 meter distance	
38.	Auto Start, Cold Start & EPO	Shall be available	
39.	Humidity	0%-95% non condensing	
40.	INGRESS PROTECTION	IP 20	
41.	MEASUREMENTS (ON LCD)	Input & Output Voltage, Input & Output Frequency, Bypass: Voltage & Frequency, Battery Level Indicator, Load Level indicator,	

SI No	Characteristic	Specification	Compliance Yes/No
		Fault codes, , Overload, Short circuit, Low Battery.	
42.	CERTIFICATIONS		
43.	BIS	BIS Certificate to be submitted for the quoted Model	
44.	CERTIFICATIONS	ISO 9001:2015(Quality Management System), ISO14001:2015(Environmental Management System) , ISO45001:2018 (Occupational Health & Safety Management System) , ISO 20000-1:2018(Information Technology Service Management System), ISO 27001:2022(Information Security Management System) , ISO50001:2018 (Energy Management System), IEC /EN 62040-1-1 (Safety) IEC/EN-50091-1-1 (General & Safety Requirements) , IEC/EN 60950 (Information Technology Equipment Safety) , IEC/EN-50091-2 (EMC Safety) IEC/EN 62040-2 (EMC Emission) IEC 62040-3 (Performance & Design) IEC 60146 (Design & Manufacture) IEC/EN 61000-4-1 level4 IEC/EN 61000-4-2 level4 IEC/EN 61000-4-3 level4 IEC/EN 61000-4-4 level4 IEC/EN 61000-4-5 level4 IEC/EN 61000-4-6 level4	
45.	Test Certificates	Test Report of UPS should be enclosed conducted from reputed NABL accredited Laboratory for the quoted model complying all technical parameters conducted within last 5 years from the date of opening of Bid.	
46.	SUPPORT		
47.	Web/Window base Support	It is mandatory to provide online centralized call tracking system Like OVSD (Open view Service Desk) for monitoring of logged calls viewing through web / windows-based access for at least 2 officials.	
48.	Eligibility Criteria		

SI No	Characteristic	Specification	Compliance Yes/No
49.	FACTORY License	UPS OEM should have their Factory License Certificate & the same has to be submitted during bid submission	
50.	OEM should have Average Turnover of Rs.250 Crores in last three Financial Year. OEM should have earned Profit during the last 3 Financial Year & It should have Positive Net Worth during last 3 Financial Year	Audited Balance Sheet of Last 3 Years along with Auditors Report to be enclosed.	

xxiv. SPECIFICATION OF ON-LINE UPS-20KVA

SI No	Characteristic	Specification	Compliance Yes/No
1	Capacity	20KVA, 16000 Watt (3Øinput/ 3Ø output)	
2	Topology	True Online Double Conversion UPS Tower Mount	
3	Technology	IGBT Based	
4	Isolation Transformer	UPS should have inbuilt Isolation Transformer	
	INPUT		
5	Input Facility	3Ø, 4-wire & Ground, (3 Phase & Nuetral + Ground)	
6	Nominal Voltage	3 x 400 VAC (3Ph+N)	
7	Input Voltage Range	3Ph,N+E (330 to 460 Vac on full load)	
8	Input Frequency Range	45 ~55Hz	
9	Input Power Factor	≥0.88	
	OUTPUT		
10	Power Factor	0.8	
11	Nominal Output Voltage	380/400/415Vac shall be available with +/-1% regulation in battery mode	
12	Voltage regulation	± 1% static, ± 5% for Dynamic Load	
13	Nominal Frequency	50Hz±2% (Synrchronized to Mains)	
14	Waveform	Sine wave	
15	Crest factor	3:1	
16	Total harmonic distortion	< 5% (linear load); <7% (nonlinear	

SI No	Characteristic	Specification	Compliance Yes/No
	(THDv)	load)	
17	Output Short Circuit Protection	Electronic, trip	
18	Transfer time	Mains mode to battery mode: 0 ms; Inverter mode to bypass mode: < 4ms	
19	Maintenance Bypass	Automatic & Manual	
20	Output Connection	Terminal at bottom or Indian Socket	
21	Efficiency	Overall (AC to AC) : ≥87%	
22	Overload Protection	>100% ~ 110%: for 1 mins; >110% ~ 125%: for 30 secs;	
23	Surge Protection Device (SPD):	Type 2 , Three Phase Four pole , AC - SPD	
		Suitable for TNS System (1Ph+N) ,	
		Un - 415 VAC	
		Uc - 520V	
		Imax - 40kA	
		In - 20kA	
		Up - ≤ 1.5kV	
		1. Should have Reversible installation facility : reversible chassis to allow cable entry from above or below	
		2. Should have clear display of protection end of life of cartridge.	
		3. Two types of terminal : for rigid or flexible cable and for fork type comb bus bar.	
		4. Should have thermal disconnection system.	
		5. Should have Cartridge security System : vibration proof insertion 'click' effect .	
		6. Should have individual Mechanical cartridge Coding for safety system to avoid possible cartridge replacement error.	
	BATTERY & BATTERY BANK CHARGER		
24	DC BUS voltage	384 VDC or Higher	
25	Battery Configuration	Minimum VAh should be 24960 VAh for 30 mins Battery Backup	
26	Batteries Type	SMF BATTERY	
27	Battery Make	Exide/HBL/Quanta	
28	Battery re-charge time	8-10 Hours , UPS Charger should be	

SI No	Characteristic	Specification	Compliance Yes/No
	(After complete discharge) to 90% capacity	10% of the Battery Ah Capacity	
29	Battery Housing	Should be compact and space saving MS Steel Open Racks complete with interconnectors	
30	Cold Start	should be provided	
	Environmental		
31	Operating Temperature	0-40 deg C with full load	
32	Type of Cooling	Forced Air	
33	Noise Level	<55 dBA at 1 meter distance	
34	Auto Start, Cold Start & EPO	Shall be available	
35	Humidity	0%-95% non condensing	
	INGRESS PROTECTION	IP 20	
36	MEASUREMENTS (ON LCD)	Input & Output Voltage, Input & Output Frequency, Bypass: Voltage & Frequency, Battery Level Indicator, Load Level indicator, Fault codes, , Overload, Short circuit, Low Battery.	
	CERTIFICATIONS		
37	CERTIFICATIONS	ISO 9001:2015(Quality Management System), ISO14001:2015(Environmental Management System) , ISO45001:2018 (Occupational Health & Safety Management System) , ISO 20000-1:2018(Information Technology Service Management System), ISO 27001:2022(Information Security Management System) , ISO50001:2018 (Energy Management System), IEC /EN 62040-1-1 (Safety) IEC/EN-50091-1-1 (General & Safety Requirements) , IEC/EN 60950 (Information Technology Equipment Safety) , IEC/EN-50091-2 (EMC Safety) IEC/EN 62040-2 (EMC Emmission) IEC 62040-3 (Performance & Design) IEC 60146 (Design & Manufacture) IEC/EN 61000-4-1 level4 IEC/EN 61000-4-2 level4 IEC/EN 61000-4-3 level4 IEC/EN 61000-4-4 level4	

SI No	Characteristic	Specification	Compliance Yes/No
		IEC/EN 61000-4-5 level4 IEC/EN 61000-4-6 level4	
	SUPPORT		
38	Web/Window base Support	It is mandatory to provide online centralized call tracking system Like OVSD (Open view Service Desk) for monitoring of logged calls viewing through web / windows based access for at least 2 officials.	
	Eligibility Criteria		
39	FACTORY License	UPS OEM should have their Factory License Certificate & the same has to be submitted during bid submission	
40	OEM should have Average Turnover of Rs.250 Crores in last three Financial Year. OEM should have earned Profit during the last 3 Financial Year & It should have Positive Net Worth during last 3 Financial Year	Audited Balance Sheet of Last 3 Years along with Auditors Reprt to be enclosed.	

xxv. SPECIFICATIONS OF SURGE PROTECTION DEVICES

SL .No	Parameter	Specifications	Compliance (Yes/No)
1	Nominal voltage	48V	
2	MCOV	64V	
3	Load current	1.5A	
4	Frequency	250MHz	
5	Impulse current rating(10/350µS)	1kA	
6	Nominal discharge current(8/20µS), C2	3kA	
7	Total discharge current(8/20µS)	20kA	
8	Voltage protection level	<100V @ 3kA	
9	Insertion loss	<1dB @ 250MHz	
10	POE Compliance	Type 1&2 according to IEEE802.3af,at and Type3&4 POE according to IEEE802.3bt	
11	Mounting	DIN rail and surface mount	
12	Connection cable	STP and UTP cable	
12	Ambient temperature	-40Deg C to +75Deg C	

13	Compliance	Design complies with ANSI/TIA568.2-D, TIA/EIA-568- B.2-1, IEC61643-21. Testing in progress	
14	Certification	Tec	

xxvi. Specification of 4K LED 65” Display

SL. No	Specification		Parameter	Compliance (Yes/No)
1	General features	Screen Size	65	
		Brightness (cd/m ²)	440	
		Dynamic Contrast Ratio	300,000:1	
		Display resolution (H x V, pixels)	3840 x 2160	
		HDR (High Dynamic Range) compatibility	Yes (HDR10,HLG,Dolby Vision)	
		Aspect Ratio	16:9	
		Portrait/Tilt Compatibility	Yes	
2	Display features	Dimming type	Frame Dimming	
		Display Device	LCD	
		Backlight type	Direct LED	
		TRILUMINOS Display	TRILUMINOS PRO	
		Color gamut (DCI-P3)	92%	
		Picture Processor	4K HDR Processor X1	
		Operation time	24/7	
		Deep Black Non-Glare coating	No	
		Viewing Angle (Right/Left)	178 (89/89) degree	
		Viewing Angle (Up/Down)	178 (89/89) degree	
3	Video Specs	Video Processing	4K X-Reality PRO	
		Motion enhancer	Motionflow XR 240 (Native 60Hz)	
4	Audio Specs	Speaker Position	Down Firing	
		Audio Power Output	10W + 10W	
5	Professional features	Pro mode	Yes	
		HDMI auto wake-up	Yes	

SL. No	Specification		Parameter	Compliance (Yes/No)
		HTML5 platform	Yes	
		Multicast/IPTV	Yes	
		Operating System	Android TV	
		On-board Storage (GB)	16GB	
6	Network Specs	Wi-Fi Direct	Yes	
		Wi-Fi Certified	Yes	
		Wireless LAN	Integrated	
7		On Screen Clock	Yes	
		Sleep Timer	Yes	
		On/Off Timer	Yes	
		Chromecast built-in	Yes	
		Apple AirPlay	Yes	
8	Control Specs	IP Control	Yes	
		RS-232C Control	Yes	
		HDMI-CEC	Yes	
9	Inputs and outputs	HDCP	HDCP2.3 (for HDMI1/2/3/4)	
		Composite Video Input (s)	1 (Side, Mini jack)	
		HDMI inputs total	4 (4Side)	
		Analog Audio Input (s) (Total)	1 (Side Analog Conversion)	
		Digital Audio Output (s)	1 (Side)	
		USB ports	2 (Side)	
		Ethernet inputs	1 (Side)	
10	Environment specs	Rated Power Consumption	230 W	
		Power Consumption (in Standby)	0.5 W	
		Dynamic Backlight Control	Yes	

xxvii. Specification of 4K Video Wall Panel

SL. No	Specification of 2 X 2 Video wall		Compliance (Yes / No)
1	BEZEL SPECIFICATONS		
1	Resolution	It should support a minimum 1920 x 1080	
2	Size	The diagonal size of the display should be at least 55 inch or bigger	

SL. No	Specification of 2 X 2 Video wall		Compliance (Yes / No)
3	Pixel Pitch	Should be greater than or equal 0.63mm	
4	Brightness	Minimum 500 NIT	
5	Contrast	Minimum 1200: 01	
6	Display Colors	8 bit - 16.7M	
7	Light Source	LED	
8	Response Time	It should have a response time of 8 ms. or better	
9	Viewing Angle	The Horizontal Viewing angle should be 178° & the Vertical viewing angle should be 178°	
10	Video	NTSC, PAL, SECAM 480i, 480p, 720p, 1080i, 1080p,	
11	Standard Inputs	It should have at least	
		RGB: DVI-D, Display Port 1.2	
		VIDEO : HDMI1, HDMI2	
		AUDIO: Stereo Mini Jack	
		USB: 01 port	
12	Standard	It should have at least	
	Outputs	RGB: Display Port 1.2 (for Looping)	
		AUDIO: stereo Mini Jack	
13	Control	Thru RS-232/RS-422/IR/ Ethernet	
14	Input Voltage	AC 100~240V@50/60 Hz	
15	Power Consumption per panel	Should be < 250W	
16	Standby Mode	Should be <0.5W	
17	Temperature Per Panel	0°C - 40°C	
18	Operating Life	> =50,000 hours	
19	Combined Bezel	0.88 mm or better	
20	Haze/Anti-Glare	Minimum 25% or More	
21	Installation	Wall Mount bracket and necessary cables should be supplied along with the displays	
22	IP rating	IP5x	
23	Depth of the display	less than 100 mm,	
24	Certification	BIS/UL/FCC/CE	
25	Wall Mount Bracket	To be provided during Installation	

xxviii. SPECIFICATION OF 15U WATER & DUST PROOF OUTDOOR RACK

Sl.No	Specification	Compliance (Yes/No)
1	Size of Enclosure 15U	

Sl.No	Specification	Compliance (Yes/No)
2	Depth of the Enclosure Up to 500 (mm)	
3	Basic Frame should be steel	
4	Top & Bottom Cover should be Welded to Frame, Field Cable entry exit from bottom	
5	Front Door should be lockable steel door	
6	Mounting Angle should be 19" made of formed steel	
7	Std. Equipment Mounting should be ISO standard	
8	Standard Finish should be power coated	
9	Rack Standard should be IP5X	
10	PDU should be 5 socket 5Amp	
11	Rigid frame that can be fixed to the pole	
12	Front Door with Filter, Louver & T type Lock	
13	90CFM, 230V AC Fan should be 2 nos	
14	front door Self-adhesive thermal foam from inside	
15	Pole Mounting Brackets at rear side	
16	Standard Finish should be power coated	
17	Operating Temperature should be 60 degree Celsius	

xxix. Specification of 42U Indoor Rack

Sl.No	Technical Specification	Compliance (Yes/No)
1	42U, 19" 800 mm Width, 1000mm Depth, Floor Standing Steel Networking Enclosure	
2	It should be confirmed to DIN 41494 or equivalent standard	
3	It should be welded construction with steel frame	
4	Front Door: Lockable Toughened Glass Door	
5	19" mounting angle made of formed steel	
6	Basic Frame: Steel Powdered coated standard finish	
7	Top & Bottom welded cover with vented & cable entry exit cut outs	
8	2 pair of 19" mounting rails	
9	1U Cable Manager	
10	Provision to mount the cooling fans on the top panels 4 Nos FAN 180CFM	
11	Mounting Option: Castor wheels (Front 2 wheels with Break and rear without break) Or Levelers or Base plinth	
12	Horizontal Power Distribution Unit with 6 x 5/15 Amp sockets Round Pin, 230 Volts AC	
13	Mounting Hardware set.	

Annexure - III

Bill of Materials

Sl. No.	Description	Qty	UOM
1	Hardware Supply Items		
1.01	Management, Recording, Mobile, ALPR, SQL Database, Failover, Federation & Failover / Redundant & plugin Server with Microsoft server licenses and RPS as per specification	4	Nos
1.02	Minimum 216TB Raw Recording Storage with dual power supply as per specification	1	Nos
1.03	Workstation with Intel i7 14 th Gen or higher, 32 GB RAM, 8 GB Graphics card RTX 5060, 1 TB SSD, 2TB HDD & windows 11 Professional as per specification	2	Nos
1.04	Dual Monitor Stand	2	Nos
1.05	22" Monitor Full HD With HDMI Cable and mounting accessories	4	Nos
1.06	EDGE AI enabled IP 5 MP Bullet Camera with IR, motorised varifocal Lense POE Supported as per specification	83	Nos
1.07	AI enabled 5 MP IP PTZ camera, min 30x Zoom, min 150 mrt IR PoE Supported as per specification	9	Nos
1.08	FRS (facial recognition system) Bullet Camera motorised varifocal Lense POE Supported as per specification	6	Nos
1.09	ANPR Setup - EDGE based AI ML Bullet Camera for ANPR as per specification	10	Nos
1.1	Industrial Grade Giga POE++ Injector as per specification	10	Nos
1.11	60W IP Public Announcement System as per specification	4	Nos
1.12	Layer 3- Managed Switch 24-port copper with 8 SFP & SFP++ port and stackable cables as per specification	2	No
1.13	L2 Fully Managed 24 Port Giga PoE Switch PoE Output with 4 SFP Port. (Outdoor use) as per specification	4	No
1.14	L2 Fully Managed 8 Port Giga PoE Switch PoE Output with 2 SFP Port. (Outdoor Use) as per specification	25	Nos
1.15	High End Security Firewall with HA 5 years subscription as per specification	2	Nos
1.16	Ransomware Protection with End point security & Server Antivirus package for all the servers and workstation as per specification	1	Lot
1.17	24 port LIU with loaded as per specification	27	No
1.18	LC-LC Patch Cord as per specification	25	Nos
1.19	SC-LC Patch Cord as per specification	76	Nos
1.2	1000 Base 1310nm SM Transceiver Module as per specification	72	Nos
1.21	10 G Transceiver Module with FC Patch cord	8	Nos
1.22	Cat 6 factory made patch cord 5 Mtr	25	Nos
1.23	Cat 6 factory made patch cord 3 Mtr	40	Nos

Sl. No.	Description	Qty	UOM
1.24	Cat 6 factory made patch cord 2 Mtr	30	Nos
1.25	Cat 6 double jacketed UTP Cables Outdoor as per specification	28	Box
1.26	OFC - 6 Core SM-Type Armored cable with Laying, Termination accessories as per specification	33	km
1.27	Cantilevers for camera mounting	50	Nos
1.28	15U Water & Dust proof Metal Outdoor Rack with PDU, Fan etc. with chemical earthing materials as per specification	25	Nos
1.29	Water & Dust proof Metal Outdoor Back box for Camera	98	Nos
1.3	1 KVA Online UPS with external battery for 1 hour power backup at rack location. as per specification	25	Nos
1.31	20 KVA Online UPS with External Battery Rack, Cables etc. for 2-hour power back up as per specification	1	Nos
1.32	SPD for Power Line with accessories as per specification	25	Nos
1.33	PoE SPD for Cameras with accessories	216	Nos
1.34	Minimum 98" FHD Display, Connector, Bracket with accessories and installation as per specification	2	Nos
1.35	Video Display Controller with cables & accessories	1	Nos
1.36	Floor Mount Heavy duty 42U rack, 800 X 1000 MM with all accessories as per specification	2	Nos
1.37	Conduit for cable laying	1	Lots
1.38	Heavy Duty 6.5 Meter Galvanized VNPR Pole with Cantilever and Chemical Earthing materials	8	Nos
1.39	Heavy Duty 5 Meter Galvanized CCTV Camera Pole and Chemical Earthing materials	35	Nos.
1.4	Industrial Air-Conditioner for Server Room for 24 X7 running with failover	2	Nos
1.41	Establishment of Data Center and Command & Control Room including required furniture, flooring, Firefighting system, water leak detector, Pest control, Acoustic wall panelling, Access control all doors, necessary electrical works, proper chemical earthing, for both building and data center appliances.	1	Lot
2	Software & Licenses Supply		
2.01	Unified command and control (UC2) platform software License as per specification	1	Nos
2.02	Video Management Software (VMS) License as per specification	1	Nos
2.03	GIS Map Integration License	1	Nos
2.04	3 rd Party Plugins Application Integration License	1	Nos
2.05	IP camera connection License as per specification	98	Nos
2.06	Mobile and Web Client connection License as per specification	1	Lot
2.07	License for vehicle number plate reading setup	10	Nos
2.08	FRS software and hardware complete setup as per specification	1	Set

Sl. No.	Description	Qty	UOM
2.09	Federation Connectivity License. (for Central Operation, Monitoring & Management at Angul DPO)	1	Nos
2.1	SIP License for IP PA System	4	Nos
2.11	SIP Integration License for Central IP PA Console with UCC platform at Talcher and DPO, Angul	1	Nos
2.12	AI based Video Analytics Solutions	1	Nos
2.13	MS SQL Enterprise Database License	2	Nos
2.14	e-Challan Generation application with Reporting Dashboard	1	Nos
2.15	e-Challan Application Integration with Vahan Database	1	Nos
2.16	Intelligent Traffic enforcement License for Triple Riding, No-helmet, Wrong way Driving for e challan generation.	1	Lot
3	Service Work		
3.01	CAT 6 Cable Laying inside conduit, clipping, dressing with termination.	8540	Mtr
3.02	Outdoor Rack foundation, Fixing and Chemical Earthing	25	Nos
3.03	Electricity Connection Chrges for field locations	25	Nos
3.04	Field Location proper Civil Foundation and Mechanical works, Electrical Cabling for CCTV Camera Pole	35	Nos
3.05	Strong Civil Foundation and Mechanical works, Electrical Cabling for Heavy duty VNPR Pole-Cantilever	8	Nos
3.06	Project Management, documentation, planning, supervision, Installation, Testing, Integration, and Commissioning, Go live of the project with detailed training of Operators of Talcher Command & Control Room and Supervisorial training to officials at DPO, Angul. .	1	Lot
4	O&M Charges		
4.01	On-site Comprehensive Support service with manpower and electricity charges of field locations for 1st year	1	Lot
4.02	On-site Comprehensive Support service with manpower and electricity charges of field locations for 2nd year	1	Lot
4.03	On-site Comprehensive Support service with manpower and electricity charges of field locations for 3rd year	1	Lot
4.04	On-site Comprehensive Support service with manpower and electricity charges of field locations for 4th year	1	Lot
4.05	On-site Comprehensive Support service with manpower and electricity charges of field locations for 5th year	1	Lot

Annexure – IV

Procedure To Participate in Online Bidding E-Procurement

1. Participating in The Bid in the E-Procurement Portal: The Bidder intending to participate in the bid is required to register in the Portal using his /her active personal/ official e-mail ID as his Login ID and attach his/her valid Digital Signature Certificate (DSC) to his/her unique Login ID. The DSC used must be of appropriate class (Class II or Class III) issued from a registered Certifying Authority such as n-Code, Sify, TCS, MTNL etc. He/She has to submit the relevant information as asked for about the firm/ Bidder. The portal registration of the bidder/ firm is to be authenticated by the State Procurement Cell after verification of original valid certificates/ documents such as (i) PAN and (II) Registration Certificate (RC)/ GST Registration Certificate and GSTIN (for procurement of goods) of the concerned bidder. The time period of validity in the portal is at par with validity of RC/ GST Registration Certificate and GSTIN. Any change of information by the bidder is to be re-authenticated by the State Procurement Cell. After successful authentication bidder can participate in the online bidding process.

Bidder not registered with Government of Odisha, can participate in the e-procurement after necessary enrolment in the portal but have to subsequently register themselves with the appropriate registering authority of the State Government before award of the work as per prevalent registration norms of the State.

a. To log on to the portal the Bidder is required to type his/her username and password. The system will again ask to select the DSC and confirm it with the password of DSC. For each login, a user's DSC will be validated against its date of validity and also against the Certificate Revocation List (CRL) of respective CAs stored in system database. The system checks the unique ID, password and DSC combination and authenticates the login process for use of portal.

b. The tender documents uploaded by the Tender Inviting Officer in the website <https://tendersodisha.gov.in> will appear in the section of "Upcoming Tender" before the due date of tender sale. Once the due date has arrived, the tender will move to "Active Tender" Section of the homepage. Only a small notification will be published in the newspaper specifying the work details along with mention of the specific website for details. The publication of the tender will be for specific period of time till the last date of submission of bids as mentioned in the 'Invitation for Bid' after which the same will be removed from the list of Active tenders. Any bidder can view or download the bid documents from the web site.

c. Bidder exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidence towards his eligibility for such exemption.

d. The software application has the provision of payment of cost of tender document through payment gateways of authorized bankers by directly debiting the account of the bidders.

1.1. Furnishing scanned copy of such documents is mandatory along with the tender documents otherwise his/her bid shall be declared as non-responsive and thus liable for rejection.

1.2. In the case of any failure, malfunction, or breakdown of the electronic system used during the e- procurement process, the tender inviting officer shall not accept any responsibility for failures or breakdowns other than in those systems strictly within their own control.

1.3. Any third party/company/person under a service contract for operation of e-procurement system in the State or his/their subsidiaries or their parent companies shall be ineligible to participate in the procurement processes that are undertaken through the e-procurement system irrespective of who operates the system.

1.4. For submission of Bids through the E-Procurement Portal, the bidder shall upload the scanned copy/copies of document in prescribed format wherever warranted in support of eligibility criteria and qualification information. The online bidder shall have to produce the original documents in support of the scanned copies and statements uploaded in the portal before the specified date as per DTCN.

1.5. Each bidder shall submit only one bid for one package. A bid is said to be completed if accompanied by cost of bid document and appropriate bid security. The system shall consider only the last bid submitted through the E-Procurement portal.

1.6. The bidder may ask questions related to tender online in the e-procurement portal using his/her DSC, provided the questions are raised within the period of seeking clarification as mentioned in tender call notice/Bid. The Officer inviting the Bid/ Procurement Officer-Publisher will clarify queries related to the tender.

1.7. The details of documents pertaining to the works available with the officer inviting the Bid as well as in the office of the Executive Officer as mentioned in the Contract Data will be open for inspection by the bidders. The bidder is required to download all the documents for preparation of his bid. It is not necessary for the part of the Bidder to up-load other Bid documents (after signing) while up-loading his bid. He is required to upload documents related to his eligibility criteria and qualification information and Bill of Quantities duly filled in. It is assumed that while participating in the bid, the bidder has referred all the documents. Seeking any revision of rates or backing out of the bid claiming for not having referred to any or all documents provided in the Bid by the Officer Inviting the Bid will be construed as plea to disrupt the bidding process and in such cases the bid security shall be forfeited.

1.8. Any addendum / corrigendum/ cancellation of tender shall be published on the website <https://tendersodisha.gov.in> , notice board and through paper publication and such notice shall form part of the bidding documents.

1.8.1. The system generates a mail to those bidders who have already uploaded their tenders and those bidders if they wish can modify their tenders. The bidders are required to watch the website till last date and time of bid submission for any addendum/ corrigendum/ cancellation thereof. Tender inviting authority is not responsible for communication failure of system generated mail.

All the volumes/documents shall be uploaded / provided in the portal by the Officer inviting the bid. The bidder shall carefully go through the document and prepare the required documents and upload the scanned documents in Portable Document Format to the portal in the designated locations of Technical Bid. He will fill up the rates of items or percentage in the BOQ downloaded for the work in designated Cell and uploads the same in designated locations of Financial Bid. Bidders are to submit only the original BoQ uploaded by publisher after entering the relevant fields without any alteration/deletion/modification. Multiple BoQ submission or any alteration/ deletion/ modification to the original protected BoQ uploaded by publisher shall lead to cancellation of bid. In case of item rate tender, bidders shall fill in their rates other than zero value in the specified cells. In the percentage rate tender, the bidder quoting Zero value is valid and will be taken as Schedule of Rates. Submission of document shall be effected by using DSC of appropriate class.

1.8.2. In the case of any bid where unit rate of any item/items appear unrealistic, such bid will be considered as unbalanced and in case the bidder is unable to provide satisfactory explanation such a tender is liable to be disqualified and rejected.

1.8.3. To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the tender inviting authority at his discretion extend as necessary the deadline for submission of bids.

2. PAYMENT OF EMD/ BID SECURITY AND COST OF BID DOCUMENTS: The Bidder shall furnish,

as part of his Bid, a Bid security for the amount mentioned under NIT/Contract Data in online mode. Non-submission of bid security within the designated period shall debar the bidder from participating in the on-line bidding system and his portal registration shall be cancelled. His name shall also be informed to the registering authority for cancellation of his registration.

2.1 The EMD or Bid Security payable along with the bid as mentioned in the bid document.

2.2. deleted.

2.3 The tender accepting authority will verify the originals of all the scanned documents of the successful lowest bidder only within 5 days of opening of the tender (price bid). In the eventuality of failure on the part of the lowest successful bidder to produce the original documents, he will be debarred in future from participating in tender for 3 years and will be blacklisted by the competent authority. In such a situation, successful L-2 bidder will be required to produce his original documents for consideration of his tender at the negotiated rate equal to L1 bidder.

2.4 Bidder exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidence towards his eligibility for such exemption.

2.5 Government of Odisha has introduced e-payment gateway into the portal for payment of cost of Bid and Bid Security/ Earnest Money Deposit. The process of using e-payment gateway is mentioned in the "Procedure for Electronic receipt, accounting and reporting of Cost of Tender Paper and Earnest Money Deposit on submission of bids".

3. **FORMAT AND SIGNING OF BID: (Logging to the Portal)**-The Bidder/ Bidder is required to type his/her Login ID and Password. The system will again ask to select the DSC and confirm it with the password of DSC as a second stage authentication. For each login, a user's DSC will be validated against its date of validity and against the Certificate Revocation List (CRL) of respective CAs stored in system database. The system checks the unique Login ID, Password and DSC combination and authenticates the login process for use of portal.

The bidder can download the tender of his choice and save it in his system and undertake the necessary preparatory work off-line and upload the completed tender at his convenience within the final date and time of submission. The bidder shall only submit single copy of the required documents and Price Bid in the portal. In the Financial bid, the bidder cannot leave any figure blank. He has to only write the figures; the words will be self-generated. The Bidders are advised to upload the completed Bid document well ahead of the last date & time of receipt to avoid any last moment problem of power failures etc.

3.1. The Bidder shall go through the Bid carefully and list the documents those are asked for submission. He shall prepare all documents including Declaration form, price bid etc. and store in the system.

3.2. The bidder shall log on to the portal with his DSC and move to the desired tender for uploading the documents in appropriate place one by one simultaneously checking the documents. Once the Bidder makes sure that all the documents have been up-loaded in appropriate place, he clicks the submit button to submit the bid to the portal.

3.2.1. The bids once submitted cannot be retrieved or corrected. Tender cannot be pre-opened and cannot be submitted after due date and time. Therefore, only after satisfying that all the documents have been uploaded, the Bidder should activate submit button.

3.2.2. In the e-procurement process each processes are time stamped. The system can identify each individual who has entered the portal for any bid and the time of entering the portal.

3.2.3. The Bidder should ensure clarity of the document up loaded by him to the portal especially the scanned documents by taking out sample printing. Non-submission of legible documents may render the bid non-responsive. However, the Officer inviting the Bid if so, desires can ask for legible copies or original copies for verification within a stipulated period provided such document in no way alters the Bidder's price bid. If the Bidder fails to submit the original documents within the stipulated date, his bid security shall be forfeited.

SUBMISSION OF BID: -

3.3. The bidder shall carefully go through the tender and prepare the required documents. The bid shall have a Technical Bid and a Financial Bid. The Technical bid generally consists of GSTIN, PAN, Registration Certificate, Affidavits, Profit Loss statement, Joint venture agreement, List of similar nature of works, work in hand , list of machineries and any other information required by OIT. The Financial Bid shall consist of the Bill of Quantities (BOQ) and any other price related information/ undertaking including rebates.

3.4. Bidders are to submit only the original BOQ (in .xls format) uploaded by Procurement Officer Publisher (Officer Inviting Tender) after entering the relevant fields without any alteration/ deletion/ modification. Multiple BOQ submission by bidder shall lead to cancellation of bid. In case of items rate tender, bidders shall fill in their rates other than zero value in the specified cells without keeping it blank. In the percentage rate tender the bidder quoting zero percentage is valid and will be taken at par with the estimated rate of the work put to tender.

3.5. The bidder shall upload the scanned copy/ copies of document in support of eligibility criteria and qualification information in prescribed format in Portable Document Format (PDF) to the portal in the designated locations of Technical Bid.

3.6. The bidder shall write his name in the space provided in the specified location in the Protected Bill of Quantities (BOQ) published by the Officer Inviting Tender. The bidder shall type rates in figure only in the rate column of respective items(s) without any blank cell in the rate column in case of item rate tender and type percentage excess or less up to two decimal places only in case of percentage rate tender.

3.7. The bidder shall log to the portal with his/ her DSC and move to the desired tender for uploading the documents in appropriate place one by one simultaneously checking the documents.

3.8. Bids cannot be submitted after due date and time. The bids once submitted cannot be viewed, retrieved, or corrected. The Bidder should ensure correctness of the Bid prior to uploading and take print out of the system generated summary of submission to confirm successful uploading of bid. The bids cannot be opened even by the OIT or the Procurement Officer Publisher/ opener before the due date and time of opening.

3.9. Each process in the e-procurement is time stamped and the system can detect the time of log in of each user including the Bidder.

3.10. The Bidder should ensure clarity/ legibility of the document uploaded by him to the portal.

3.11. The system shall require all the mandatory forms and fields filled up by the Bidder during the process of submission of the bid/ tender.

3.12. The bidder should check the system generated confirmation statement on the status of the submission.

3.13. The bidder should upload sufficiently ahead of the bid closure time to avoid traffic rush and failure in the network.

3.14. The Tender Inviting Officer is not responsible for any failure, malfunction or breakdown of the electronic system used during the e-procurement process.

3.15. The Bidder is required to upload documents related to his eligibility criteria and qualification information and Bill of Quantity duly filled in. It is not necessary for the part of the bidder

to upload the other Bid documents (after signing) while uploading his bid. It is assumed that the bidder has referred all the documents uploaded by the Officer Inviting the Bid.

3.16. The Bidder will not be able to submit his bid after expiry of the date and time of submission of bid (server time). The date and time of bid submission shall remain unaltered even if the specified date for the submission of bids declared as a holiday for the Officer Inviting the Bid.

3.17. The 'Online bidder' shall digitally sign on all statements documents, certificates uploaded by him, owning responsibility for their correctness/ authenticity as per IT ACT 2000. If any of the information furnished by the bidder is found to be false/ fabricated/ bogus, his EMD/BID Security shall stand forfeited and his registration in the portal shall be blocked and the bidder is liable to be blacklisted.

4. SECURITY OF BID SUBMISSION:

4.1. All bid data uploaded by the Bidder to the portal will be encrypted by the DSC of the opener(s).

The system shall require all the mandatory forms and fields filled up by the Bidder during the process of submission of the bid/tender.

4.2. The Bid shall be received in encrypted format by the system which can only be decrypted / opened by the authorized openers only on or after the due date and time.

5. DEADLINE FOR SUBMISSION OF THE BIDS :

5.1. The online bidding will remain active till the last date and time of the bid submission. Once the date and time (Server date and time) is over, the bidder will not be able to submit the bid. The date & time of bid submission shall remain unaltered even if the specified date for the submission of bids declared as a holiday for the Officer inviting the Bid.

RESUBMISSION AND WITHDRAWAL OF BIDS :

5.2. Resubmission of bid by the Bidders for any number of times before the final date and time of submission is allowed.

5.3. Resubmission of bid shall require uploading of all documents including price bid afresh.

5.4. If the bidder fails to submit his modified bids within the pre-defined time of receipt, the system shall consider only the last bid submitted.

6. LATE BIDS:

6.1. The system shall reject submission of any bid through portal after closure of the receipt time. For all purpose the server time displayed in the e-procurement portal shall be the time to be followed by the bidder and concerned officers.

7. MODIFICATION AND WITHDRAWAL OF BIDS:

7.1. In the E-Procurement Portal, it is allowed to modify the bid any number of times before the final date and time of submission. The bidder shall have to log on to the system and resubmit the documents as asked for by the system including the price bid. In doing so, the bids already submitted by the bidder will be removed automatically from the system and the latest bid only will be admitted. But the bidder should avoid modification of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure. If the bidder fails to submit his modified bids within the designated time of receipt, the bid already in the system shall be taken for evaluation.

7.2. In the E-Procurement Portal, withdrawal of bid is allowed. But in such case, he has to write a letter with appropriate reasons for his withdrawal addressed to the Officer inviting the bid and upload the scanned document to portal in the respective bid before the closure date and time of receipt of the bid. The system shall not allow any withdrawal after expiry of the closure time of the bid.

8. OPENING OF THE BID:

8.1. Bid opening date is specified during tender creation or can be extended with corrigendum. This date is available in IFB, tender document as well as the home page of portal. Bid opening can be done by the authorized users which are defined during the tender publication / approval stage. The bids are encrypted using their public keys and can be decrypted only on or after the Bid Opening due date and time. The bid openers private key will be required to open the bids and all the openers have to log on to the portal during that time.

8.1.1. The bidders who participated in the online bidding can witness opening of the bid from any system logging on to the portal with the DSC away from opening place. Bidders are not required to be present during the bid opening at the opening location if they so desire.

8.1.2. Each activity is date and time stamped with user details. For time stamping, server time is taken as the reference.

8.2. In the event of the specified date of bid opening being declared a holiday for the Officer inviting the Bid/, the bids will be opened at the appointed time on the next working day.

8.3. In case bids are invited for more than one package, the order for opening of the "Bid" shall be that in which they appear in the "Invitation for Bid".

8.4. The Bid openers, who have been pre-defined shall log on to the portal with their respective DSC. Unless all the Officers who have been declared as Opening officers, log on the portal with their DSC the Tender cannot be opened.

8.5. In case of non-responsive tender, the officer Inviting tender should complete the e-Procurement process by uploading the official letter for cancellation/ re-tender.

EVALUATION OF BIDS: -

All the opened bids shall be downloaded and printed for taking up evaluation. The officer authorized to open the tender shall sign and number on each page of the documents downloaded and furnish a certificate that “the documents as available in the portal containing. nos. of pages”.

8.5.1. After opening of technical bid, the bidder may be asked in writing / online (in their registered e-mail ID) to clarify on the uploaded documents provided in the Technical Bid, if necessary, with respect to any doubts or illegible documents required for Technical Evaluation. The Officer Inviting Tender may ask for any other document of historical nature during Technical Evaluation of the tender. Provided in all such cases, furnishing of any document in no way alters the bidders price bid. Non submission of legible documents may render the bid non- responsive. The authority inviting bid may reserve the right to accept any additional document.

8.5.2. The bidders will respond in not more than 7 days of issue of the clarification letter, failing which the bid of the bidder will be evaluated on its own merit.

8.5.3. Immediately, on receipt of these clarifications, the Evaluating Officers; predefined in the system for the bid, will finalize the list of responsive bidders. They will log on to the site with their DSC and record their comments on the technical evaluation page in the system. The Officer Inviting the Bid if also the accepting authority, shall log on to the system with his digital signature and check the technical evaluation. He can either accept or pass on to the evaluating officers for re-evaluation. Upon acceptance of technical evaluation by the Accepting authority in the system, the system shall automatically generate letter to all the responsive bidders and the system shall forward the letter to all the responsive bidder that their technical bid has been evaluated responsive with respect to the data/information furnished by him and the letter shall also intimate him the date & time of opening of financial bid. The system shall also inform the non-responsive bidders in their e-mail ID that their bid has been found non-responsive.

8.6. The Technical evaluation of all the bids shall be carried out up as per the information furnished by the Bidders. But evaluation of the bid does not exonerate the bidders from checking their original documents and if at a later date the bidder is found to have misled the evaluation through wrong information, action as per relevant clause of DTCN shall be taken against the bidder/Bidder.

8.7 The Procurement Officer-Evaluators will evaluate bid and finalized list of responsive bidders. Opening of price bid and evaluation of lowest bidder is subject to satisfaction of other qualification information.

8.7.1 The financial bids of the technically responsive bidders shall be opened on the due date of opening. The Procurement Officer-Openers shall log on to the system in sequence and open the financial bids.

8.7.2 The Financial Bid will be opened on the notified date & time in the presence of bidders or their authorized representative who wish to be present.

8.7.3 At the time of opening of “Financial Bid”, the names of the bidders whose technical bids were found responsive will be announced and the bids of only those bidders will be opened. The remaining bids will be rejected.

8.7.4 The responsive bidders’ name, the bid prices, the item wise rates, the total amount of each item in case the item rate tender and percentage above or less in case of percentage rate tenders will be announced. any discounts and withdrawals, and such other details as the officer inviting the tender may consider appropriate, will be announced by him or his authorized representatives at the time of opening.

8.7.5 Rebate/discount offer if any uploaded to the system shall be declared and recorded first.

8.7.6 The Financial bid of the bidders shall be opened one by one by the designated officers.

The system shall auto-generate the Comparative statement.

8.7.7 The Bidder can witness the principal activities and view the documents/summary reports for that work by logging on to the portal with his DSC from anywhere.

8.7.8 Procurement Officer-Openers shall sign on each page of the download BOQ and the Comparative Statement and furnish a certificate to that respect.

8.7.9 System provides an option to Procurement Officer Publisher for reconsidering the rejected bid with the approval of Executive Officer.

8.7.10 Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any effort by a bidder to influence the officer inviting the bid, processing of bids or award decisions may result in the rejection of his bid.

9. CLARIFICATIONAND NEGOTIATION OF BIDS:

9.1. For examination, evaluation, and comparison of bids, the officer inviting the bid may, at his discretion, ask the lowest bidder for clarification of his rates including reduction of rate on negotiation and breakdowns of unit rates.

9.2. On opening of the price bid the system shall arrange the financial bids in order of their value (L1 first, followed by L2, L3) for subsequent evaluation. The evaluation status (Sheet) will be visible to all the participating bidders after opening on their respective logins. Each activity is recorded in the system with date and time stamping.

9.3. The competent authority is not bound to accept the lowest or any other tender and reserves the authority to reject any or all the tenders without assigning any reason.

10. NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT:

10.1. In the E-Procurement Portal, the system shall generate the template of award letter and the Officer Inviting the Bid shall mention the amount of Performance Security and

additional security required to be furnished in the letter and intimate the bidders in his e-mail ID.

10.2. The Executive Officer shall notify acceptance of the work prior to expiry of the validity period by cable, telex or facsimile or e-mail confirmed by registered letter. This letter of Acceptance will state the sum that the Executive Officer will pay the Bidder in consideration of execution and completion of the works by the Bidder as prescribed by the contract and the amount of performance security and Additional Performance Security required to be furnished. The issue of the letter of Acceptance shall be treated as closure of the Bid process and commencement of the contract.

10.3. The Bidder after furnishing the required acceptable Performance Security and Additional Performance Security, "Letter of Proceed" or "Work Order" shall be issued by the Executive Officer with copy thereof to the Procurement Officer-Publisher. The Procurement Officer-Publisher shall upload the summary and declare the process as complete.

10.4. If the L1 bidder does not turn up for agreement after finalization of the tender, then he shall be debarred from participation in bidding for three years and action will be taken to blacklist the Bidder. Besides the consortium/ JV/firm where such an agency/ firm already happens to be or is going to be a partner/ member/ proprietor, he/ they shall neither be allowed for participation in bidding for three years nor his/ their application will be considered for registration and action will be initiated to blacklist him/ them. In that case, the L2 bidder, if fulfils other required criteria would be called for drawing agreement for execution of work subject to condition that the L2 bidder negotiates at par with the quoted by the L1 bidder, otherwise the tender will be cancelled.

10.5 The tender inviting authority will reject a proposal for award if he determines that the bidder recommended for award has been engaged in corrupt or fraudulent practices in competing for the contract in question. He will report to the next higher authority. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the Bidders who resort to canvassing will be liable for rejection.

11. BLOCKING OF PORTAL REGISTRATION

1.1 If the registration Certificate of the Bidder is cancelled/ suspended by the registering authority/ blacklisted by the competent authority his portal registration shall be blocked automatically on receipt of information to that effect.

1.2 The portal registration blocked in the ground mentioned in the above Para- 11.1 shall be unblocked automatically in receipt of revocation order of cancellation/ suspension/ blacklisting from the concerned authority.

1.3 The Officer Inviting Tender shall make do inquiry and issue show cause notice to the concerned Bidder who in turn shall furnish his reply, if any, within a fortnight from the date of issue of show cause notice. Thereafter the Officer Inviting Tender is required to issue an intimation to the defaulting bidder about his unsatisfactory reply and recommend to the Chief Manager (Tech) for blocking of portal registration within 10 days of intimation to the defaulting bidder regarding his unsatisfactory reply with intimation to the Registering Authority and concerned Heads of Office if any of the following provisions are violated.

1.3.1 Fails to furnish original Technical Documents before the designated officer within the stipulated date and time.

1.3.2 Backs out from the bid on any day after the last date of receipt of tender till expiry of the bid validity period (including till the extended bid validity period)

1.3.3 Fails to execute the agreement within the stipulated date.

1.3.4 If any of the information furnished by the bidder is found to be false/ fabricated/ bogus. Accordingly, the officer Inviting Tender shall recommend to the Chief Manager (Tech) State Procurement Cell, Odisha for blocking of portal registration of bidder and simultaneously action shall also be initiated by OFFICER INVITING TENDER for blacklisting as per Appendix-XXXIV of OPWD code Volume-II.

The minimum period of blocking of Portal Registration shall in no case be less than 180 days.

Procedure for Electronic receipt, accounting and reporting of Cost of Tender Paper and Earnest Money Deposit on submission of bids

1. The State Government have formulated rules and procedures for electronic receipt, accounting, and reporting of the receipt- of Cost of Tender Paper and Earnest Money Deposit on submission of bids through the procurement portal of Government of Odisha i.e., "<https://tendersodisha.gov.in>".

2. Electronic receipt of cost of tender paper has been successfully tested through SBI payment gateway. Now it has been decided to introduce electronic receipt of Cost of Tender Paper and Earnest Money Deposit on submission of bids through payment gateway of designated banks such as SBI/ICICI Bank/HDFC Bank for all Government Departments, State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc. in phases (ANNEXURE-1). The process outlines as well as accounting and reporting structure are indicated below:

a) It will be carried out through a single banking transaction by the bidder for multiple payments like Cost of Tender Paper and Earnest Money Deposit on submission of bids.

b) Various payment modes like Internet banking/ NEFT/RTGS of Designated Banks and their Aggregator Banks as well can be accessed by the intending bidders.

c) Reporting and accounting of the e-receipts will be made from a single source.

d) Credit of receipts into the Government accounts and to the designated Bank account of the participating entities indicated in Para 2 above would be faster.

3. Only those bidders who successfully remit their Cost of Tender Paper and Earnest Money Deposit on submission of bids would be eligible to participate in the tender/bid process. The bidders with pending or failure payment status shall not be able to submit their bid. Tender inviting authority, State Procurement Cell, NIC, the designated Banks shall not be held responsible for such pendency or failure.

4. Banking arrangement:

- a) Designated Banks (SBI/ICICI Bank/HDFC Bank) payment gateway are being integrated with e-Procurement portal of Government of Odisha (<https://tendersodisha.gov.in>)
- b) The Designated Banks participating in electronic receipt, accounting and reporting of Cost of Tender Paper and Earnest Money Deposit on submission of bids will nominate a Focal Point Branch called e-FPB, who is authorized to collect and collate all e-Receipts. Each such branch will act as the Receiving branch and Focal Point Branch notwithstanding the fact that the bidder might have debited his account in any of the bank's branches while making payment.

5. Procedures of bid submission using electronic payment of tender paper cost and EMD by bidder:

- a) Log on to e-Procurement Portal: The bidders have to log onto the Odisha e-Procurement portal (<https://tendersodisha.gov.in>) using his/her digital signature certificate and then search and then select the required active tender from the "Search Active Tender" option. Now, submit button can be clicked against the selected tender so that it comes to the "My Tenders" section.
- b) Uploading of Prequalification/Technical/Financial bid: The bidders have to upload the required Prequalification /Technical/Financial bid, as mentioned in the bidding document and in line with Works Department office memorandum no.7885, dt.23.07.2013.
- c) Electronic payment of tender paper cost and EMD: Then the bidders have to select and submit the bank name as available in the payment options
 - i. A bidder shall make electronic payment using his/her internet banking enabled account with designated Banks or their aggregator banks.
 - ii. A bidder having account in other Banks can make payment using NEFT/RTGS facility of designated Banks.

Online NEFT/RTGS payment using internet banking of the bank in which the bidder holds his account, by adding the account number as mentioned in the challan as an interbank beneficiary.

- d) Bid submission: Only after receipt of intimation at the e-Procurement portal regarding successful transaction by bidder the system will activate the 'Freeze Bid Submission' button to conclude the bid submission process.
- e) System generated acknowledgement receipt for successful bid submission: System will generate an acknowledgement receipt for successful bid submission. The bidder should make a note of 'Bid ID' generated in the acknowledgement receipt for tracking their bid status.

6. Settlement of Cost of Tender Paper;

a) Cost of Tender Paper: In respect of Government receipts on account of Cost of Tender Paper, the e-Procurement portal shall generate a MIS for the State Procurement Cell (SPC). The MIS will contain an abstract of the cost of tender paper collected with reference to Bid Identification Number. The State Procurement Cell shall generate Bank-wise-head-wise challans separately for Cost of Tender Paper and instruct the designated Banks to remit the money to the State Government account under different heads. In respect of the cost of tender paper received through the e-procurement portal, the remittance to the Cyber Treasury account will be made to the Head of Account 0075-Misc, General Services-800-Other Receipts -0097-Misc. Receipts- 02237-Cost of Tender Paper.

b) For the time being, the State Procurement Cell (SPC) will use over the counter payment facility of the Odisha Treasury portal. Thereafter, remittance through NEFT & RTGS will be facilitated through the Odisha Treasury portal.

c) Similarly, in case of State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc., Cost of Tender Paper, the e-Procurement portal shall generate a MIS for the State Procurement Cell (SPC). The MIS will contain an abstract of the cost of tender paper collected with reference to Bid Identification Number. The State Procurement Cell shall generate Bank-wise list of challans and instruct the designated Banks to remit the money through the Odisha Treasury portal. The cost of tender papers will be credited to the registered Bank account of the concerned State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc.

d) Bank will refund (in case the Tender Inviting Authority (TIA) issues such instructions) the tender fee, EMD to the bidder, in case the tender is cancelled before opening of Bid as per direction received from TIA through e-procurement system.

e) Back-end Transaction Matrix of Electronic receipt of Cost of Tender Paper and Earnest Money Deposit on submission of bids is enclosed in the Annexure - 1.

7. Settlement of Earnest Money Deposit on submission of bids:

a) The Bank will remit the Earnest Money Deposit on submission/cancellation of bids to respective bidder's accounts as per direction received from TIA through e-Procurement system.

8. Forfeiture of EMD:

Forfeiture of Earnest Money Deposit on submission of bid of defaulting bidder is occasioned for various reasons.

a) In case the Earnest Money Deposit on submission of bid is forfeited, the e-Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender inviting authority.

b) The Tender inviting authorities of the Government Departments will deposit the forfeited Earnest Money Deposit on submission of bid, in the State Government Treasury under the appropriate head (8782-Cash Remittances and Adjustments between the officers rendering accounts to the same Accounts Officer-102-P.W.Remittances-1683-Remittances-91028-Remittances into Treasury) after taking the amount as a revenue receipt in their Cash

Book under the head 0075- Misc. General Services-00-101 - Unclaimed Deposits-0097-Misc, Receipts-02080-Misc. Deposits and submit the detail account to DAG (Puri) as a deposit of the Division.

c) By clicking submit button, system will initiate the forfeiture of EMD. System will not allow the evaluator to edit the initiation after clicking the submit button. Forfeiture option can be carried out in phased manner like one bidder at a time.

9. Role of the Banks:

a) Make necessary provision / customizations at their end to enable the provision for online payments / refunds as per this document.

b) Provide necessary real-time message to bidders regarding successful or unsuccessful transactions during online payment processes and redirect them to e-Procurement website with necessary transaction reference details enabling them to submit their bids.

c) The bank shall ensure transfer of funds from the pooling account to the Government Head/current account of PSUs/ULBs within the next bank working day as per the directions generated from e-Procurement portal.

d) Bank should provide timely reports and reference details to NIC enabling them to carry out their role as stated below.

e) e) Refund of amount to bidders as per the XML file provided by e-Procurement system on the next bank working day from the date of generation of the XML file and provide a confirmation to NIC on the same.

10. Role of State Procurement Cell:

a) Communicate requirements of Government departments/ State PSUs/ Autonomous Bodies/ ULBs online payment requirements to National Informatics Centre / the authorized Banks for mapping/ customization.

b) In every working day, the State Procurement Cell shall generate MIS from the e-Procurement portal to ascertain the tender paper cost received in the e-Tendering process separately bank- wise for the Government Department and the PSUs/ULBs. The SPC shall generate bank-wise separate online challans from the Odisha Treasury portal and make the remittance through over-the-counter facility or NEFT/RTGS (as and when this functionality is available in Treasury portal) and issue instruction to the bank for remittance of the receipt to the State Government account.

c) The State Procurement Cell shall be responsible for providing challan details and MIS in respect of the remittance towards tender paper cost to the Tender inviting authorities for their record.

d) State Procurement Cell shall monitor the progress of e-Tendering by different Government departments / State PSUs/ Autonomous Bodies / ULBs through an MIS. State Procurement Cell shall monitor and send monthly progress reports to the Government.

- e) The e-Procurement system will generate a consolidated refund & settlement XML file as an end of the day activity.
- f) e-procurement system will provide a web service for payment gateway (PG) provider to pull the encrypted refund and settlement details in XML file against a day.
- g) Similarly, payment gateway (PG) provider will provide a web service to pull the refund and settlement status against a day
- h) e-procurement system will update the status accordingly for reconciliation report.

11. Role of National Informatics Centre:

- a) Customize e-Procurement software and webpages of Government of Odisha (<https://tendersodisha.qov.in>) to enable the provision for electronic payment.
- b) The NIC, Odisha will modify / rectify the errors in electronic data relating to the Chart of Account. c) NIC will provide an interface to organizations to download the electronic receipt data.
- d) Enable automatic generation of daily XML files from e-Procurement system and ensure delivery of the same to the authorized Banks for enabling automatic refund/settlement of funds.
- e) NIC shall enable the e-Procurement portal to generate MIS as required for the State Procurement Cell to make remittance of the tender paper cost to the State Government account using the Odisha Treasury portal.

12. Role of Cyber Treasury:

- a) The cost of the tender paper deposited by the SPC using the Odisha Treasury Portal which will be accounted for by the Cyber Treasury, and it shall submit the accounts to A.G (O) as per the established process.
- b) The Cyber Treasury will provide MIS as required to the SPC for the purpose of accounting and reconciliation of the electronic remittances made to the State Government account.

13. Redressal of Public grievances:

- a) The State Procurement Cell, Odisha, National Informatics Centre, Odisha and the e-FPB will have an effective procedure for dealing with, public complaint for e-Receipt related matters. In case, any mistake is detected by any of the stakeholders in reporting of receipt of tender paper cost and EMD, either suo moto or on being brought to its notice, the State Procurement Cell, Odisha, National Informatics Centre, Odisha unit, Cyber Treasury and the bank will promptly take steps for rectification. The e-Focal Point Branch of the participating Banks, National Informatics Centre, Odisha and the State Procurement Cell, Odisha will notify the contact number and address of the Help Desk for resolution of any dispute regarding e-Receipt.

14. Applicability and modification of existing rules / orders:

The modalities prescribed in this Office Memorandum for downloading of tender paper, submission and rejection of bid, acceptance of Bids as well as refund and forfeiture of earnest deposit will be applicable for electronic submission of bids through e-procurement portal. Existing provisions regulating cost of tender paper, earnest money deposit in OPWD Code and OGFR would stand modified to the extent prescribed.

15. These arrangements would be made effective after signing of MoU between the designated Banks and the State Procurement Cell, firming up of Banking arrangements and technical integration between designated Bank and e-Procurement Portal.

Back-end Transaction Matrix of Electronic receipt and remittance of Cost of Tender Paper and Earnest Money Deposit on submission of bids.

	Cost of Tender Paper on submission of bids	Earnest Money Deposit on submission of bids
Government Departments	I. The payment towards the cost of Tender Paper, in case Government Departments, shall be collected in separate Pooling accounts opened in Focal Point Branch called- FPB of respective designated banks [as stated in Para2] at Bhubaneswar on T+1_day. II. With reference to the Notice Inviting Bid Identification Number, the amount so realized is to be remitted to Government Account under the Head of Account 0075-Misc. General Services-800-Other Receipts-0097-Misc. Receipts-02237- Cost of Tender Paper through Odisha Treasury Portal after opening of the bid.	I. In case of tenders of Government Departments, amount towards Earnest Money Deposit on submission of bids shall be collected in a pooling account opened for this purpose at Focal Point Branch called e-FPB of respective designated banks at Bhubaneswar and the banks will remit the amount to respective bidder's account within two working days on receipt of instruction from TIA through refund and settlement of e-procurement system. II. In case of forfeiture of Earnest Money Deposit on submission of bids, the e-Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender inviting authority within two working days of receipt of instruction from TIA.
State PSUs Statutory Corporations, Autonomous Bodies and Local Bodies.	I. In case of State PSUs, Statutory corporations, Autonomous Bodies and Local Bodies etc. the amount towards Cost of Tender Paper, on submission of bids shall be collected in separated pooling accounts opened in Focal Point Branch called e-FPB of respective designated Banks at Bhubaneswar on T+1 days. II. The Paper cost will be transferred to the respective current accounts of concerned State PSUs, Statutory Corporation, Autonomous Bodies and Local Bodies etc. after opening of bid.	I. Amount towards EMD on submission of bids shall be collected in a separate pooling account of Focal Point Branch called e-FPB of respective designated banks at Bhubaneswar and the banks will remit the amount to respective bidder's account on receipt of instruction from TIA through refund and settlement of e-procurement system within two working days from receipt of such instruction. II. In case of forfeiture of Earnest Money deposit on submission of bids, the e-Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender inviting authority within two working days of receipt of instruction from TIA.