



Tender Document

Automation of Driving Test Track for LMV & Motorcycle using Video Analytics and Smartphone Base System at Kolkata, Behala

Tender No.: CIRT/Kolkata/2026-27/01
Central Institute of Road Transport
Post Box No. 1897, Pune Nashik Road, Pune 411027
www.cirtindia.com

July 2026

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1 INVITATION OF BIDS

Sr. No.	Particulars	Details
1	Tender Reference No.	CIRT/Kolkata/2026-27/01
2	Tender Issuing Authority	Central Institute of Road Transport, Pune
3	Name of the Project & Site	Automation of Driving Test Track at Kolkata, Behala
4	Cost of the Tender	Rs. 1,000/- (Rupees One thousand only) plus GST through Demand Draft in favor of “DIRECTOR CIRT”. The cost of tender document should be paid along with the submission of the tender as per the schedule.
5	Earnest Money Deposit	Rs. 4,00,000/- (Rupees Four Lakh only) through Demand Draft in favor of “DIRECTOR CIRT”
6	Submission of Pre-bid queries (Pre Bid Query Format Refer Annexure 7)	• On or before 28th July 2027 by email • Email to be sent to stores@cirtindia.com
7	Pre-bid meeting	29 th July at 1100 a.m. (Online) Mention below
8	Last Date of submission of online bids	14 th Aug 2026 at 1600 hrs.
9	Physical Submission	18 th Aug 2026
10	Technical Bid Opening	20 th Aug 2026 at 1130 hrs @ CIRT, Pune
11	Commercial Bid Opening	Date would be finalized on conclusion of technical bid evaluation.
12	Address for Communication and Submission of Proposals	DIRECTOR Central Institute of Road Transport Post Box. 1897, Pune Nasik Road, Pune 411027
13	Download Request for Proposal & Upload e-tender	A copy of the tender document should be downloaded from http://www.cirtindia.com

Prebid Meeting Link: **Date:** 29th July 2026 **Time:** 1100 HRS

<https://teams.microsoft.com/meet/48392424533544?p=X0kC0RQpRUZYDYB3qk>

2 Notice Inviting Tender (NIT)

Central Institute of Road Transport, Pune

www.cirtindia.com

The Director, CIRT, invites online e-tenders under a 'Two-Bid System' for the following work from eligible bidders.

The Central Institute of Road Transport (CIRT), Pune, invites bids under a 'Two-Bid System' from reputed firms for the "Automation of Driving Test Track" at Kolkata. The tender consists of two parts: Technical Bid and Financial Bid. Only those bidders who qualify in the Technical Bid evaluation will have their Financial Bids opened.

Interested bidders may view and download the detailed tender documents from CIRT's e-Tender portal: www.tenderwizard.com/CIRT. All bids must be submitted online through the portal www.tenderwizard.com/CIRT.

The Director, CIRT, reserves the right to accept, reject, or cancel any bid(s) without assigning any reason whatsoever.

Head ASD

3 Instruction to Bidders (ITB)

- 3.1 Central Institute of Road Transport was established in 1967 as a joint initiative of the Association of State Road Transport Undertakings (ASRTU) and the then Ministry of Shipping and Transport, Government of India. As a technical organ of the ASRTU, CIRT is committed to improve the performance of State Road Transport Undertakings (SRTUs). Central Institute of Road Transport is herein after also referred as “CIRT” which term or expression unless excluded by or repugnant to the context or the meaning thereof, shall be deemed to include its successors and permitted assigns herein after called “Central Institute of Road Transport” or “CIRT” or “Institute”, issues this Request For Proposal, hereinafter called “RFP”.
- 3.2 The Request for Proposal is issued for inviting proposals (technical and commercial bids) for the Automation of Driving Test Track at Kolkata, Behala Software along with AMC for implementation at Kolkata, Behala.
- 3.3 A vendor submitting the proposal in response to RFP for this project shall hereinafter be referred to as “Bidder / System Integrator / Vendor / SI / Contractor” interchangeably.
- 3.4 While sincere efforts have been made to avoid errors in drafting the TENDER document, the bidders are advised to check the same carefully. No claim because of any errors detected in the TENDER document shall be entertained.
- 3.5 When two or more vendors join together and form a consortium to offer their products/services to CIRT as per the intent of this RFP, then the leader of the consortium, who submits the response to the RFP, on behalf of consortium and its members, shall be hereinafter as referred to as “Prime Bidder” or “Primary Bidder”. The Prime Bidder shall be the single point of contact/ reference for CIRT. Unless and until specifically mentioned, wherever the Bidder is referred means the “Prime Bidder” only.
- 3.6 The RFP document is neither an offer letter nor a legal contract, but an invitation for offers / responses. No contractual obligation on behalf of CIRT whatsoever shall arise from the RFP process unless and until a formal contract is signed and executed by duly authorized personnel from CIRT and the Bidder.
- 3.7 CIRT has no obligation to accept any or the lowest quote. The institute may decide not to accept any quote.
- 3.8 All offers of the Bidders shall be unconditional and once accepted whether with or without modifications by CIRT shall be binding between CIRT and such Bidder. This is also a binding document between CIRT and respondents till the completion of selection process and notification of award and till a contract is signed between CIRT and the System Integrator in

the process in case both parties initiate and expedite certain actions pending the execution of a contract.

3.9 CIRT may modify any / all of the terms of this RFP and shall be entitled to award the contract to a selected Bidder with / without modification of any conditions contained herein.

3.10 This RFP document is structured in such a way that the Bidders understand and acquaint themselves with Driving Skill Analysis through Automated Computerized system for Light Motor Vehicle & Motorcycle.

4 Submission of Bids

4.1 Availability of Tender Documents: All bid formats (Technical and Commercial) are available ONLINE at CIRT's e-Tender portal www.tenderwizard.com/CIRT. The vendors registered through CIRT's e-tender portal can only participate in this tender process. Tender document fee as prescribed in Invitation of bids.

4.2 The Tender Document be submitted in two parts:

4.3 The Tender Document be submitted in two parts:

- TECHNICAL BID – Technical Bid to be submitted online (all documents to be signed and scanned). Technical bids should have all necessary Annexure as mentioned in this Tender document.
- COMMERCIAL BID – Commercial Bid to be submitted online only. Commercial bid sent through hard copy will not be accepted and BIDDER shall be disqualified. The bidder should submit the PRICEBID only in the attached Excel Format in online mode. If financial bid document is not submitted as per CIRT format the bid will be subject to disqualification.

4.4 How to register by a vendor:

- a) The prospective bidders must register to the CIRT e-tender portal by paying Annual Registration Charge of Rs. 2,000/- (+) G.S.T. (as applicable) through e-tender portal by online payment. On completion of the registration process, the bidders will be provided with user ID and Password. After receiving the User ID and Password, bidders can log on to CIRT e-tender portal for uploading the tender documents.

4.5 b) Bid/Tender Processing Fee including G.S.T. (as applicable Non-Refundable) is payable online on the portal of CIRT e-tendering website for applying the tender online.

4.6 Yes, Bidder should have valid Class III Digital Signature Certificate (DSC) device for participating in e-tender. For integrity of data its authenticity /non-repudiation of electronic records and in compliance with IT Act 2000. It is necessary for each user to have a Digital Certificate (DC), also referred to as Digital Signature Certificate (DSC) of Class III issued by a Licensed Certifying Authority (CA). The contact details for e-Tendering are furnished below:-

Tender Document for Automation of Driving Test Track using Video Analytics and Smartphone

Name of the Service Provider:

Contact Persons: Mr. Sanjay Chandak	Telephone / Moblie: 9665721619 Email : sanjay.kc@etenderwizard.com	For vendor Registration / DSC / Any other issue regarding eTender Process, uploading of tender documents please contact Tenderwizard
Tenderwizard Helpdesk :	Contact No: 080-45811365, 080-45982100 Email: twregdelhi@etenderwizard.com	

Note: Above contact details are only related to technical queries pertaining to submission / upload of E-Tender for any other queries plz. address to stores@cirtindia.com

5 List of documents to be submitted along with Technical Bid

- 5.1 Technical Documents to be enclosed in the closed Envelope superscribed as “Automation of Driving Test Track, Kolkata – Technical Bid” should be addressed to
The Director,
Central Institute Of Road Transport,
Post Box. No. 1896, Pune Nasik Road,
Bhosari, PUNE – 411 026”.
- 5.2 DD for EMD & Tender Fee in close envelop superscribed as “Tender Fee & EMD Fee”
- 5.3 All documents, Annexures as per the Pre-Qualification requirements.
- 5.4 Scanned copies of the Demand Drafts of Tender Fee and EMD may be uploaded on the tender portal.
- 5.5 Original Demand Drafts of Tender Fee and EMD may be submitted along with the hardcopies of the technical bid document during physical submission of bid.
- 5.6 Any Bid not accompanied with Tender Fee & EMD in the acceptable amount and form will be summarily rejected by the Authority as being non-responsive and Bids of such Bidder shall not be evaluated further.
- 5.7 Documents to be digitally signed and uploaded by the bidder on the e-tender portal.
- 5.8 MAF of equipment’s like Server, Desktop, UPS, NAS Device, RFID Reader, Cameras, PoE, and Networking Switches.
- 5.9 All pages of Tender documents and Addenda / Corrigenda (if any) must be signed with proper official stamp and date by the Bidder at the lower right-hand corner.

6 How Tenders Will Be Evaluated

- 6.1 The E-Tender is available on www.cirtindia.com website.
- 6.2 Any query regarding this project to be pre-communicated through email/ fax / hard copy on or before dates mentioned in Initiation of Bids. No other queries will be entertained after that. Email id for communication stores@cirtindia.com
- 6.3 Tender bid document along with fee should be submitted by prospective tenderer on or before as per the date mentioned in the Invitation of bids.

- 6.4 The commercial bid will be opened only after the scrutiny of technical bid has been completed and a short listing of technically acceptable bids has been made.
- 6.5 Financial bids of only technically qualified bidders will be opened.
- 6.6 Successful bidder shall submit the performance bank guarantee within 7 days on receipt of Letter of Intent / Work order.
- 6.7 The rates quoted should be in Indian Rupees only.
- 6.8 The Bidder should be Indian Company registered under the Indian Companies Act.

7. Confidentiality

- 7.1 To treat any information that will be shared wrt to the project by CIRT / IDTR as confidential and shall not disclose the same under any circumstances.
- 7.2 Not to make copies, publish (National or International) regarding this project without the written permission from the Director CIRT, Pune.
- 7.3 Not to disclose the same to third party.
- 7.4 If any application is made for receiving any award or any award to be received based on this work, it shall be essentially done in the name of CIRT & with the written consent of CIRT.
- 7.5 Late and incomplete tender is liable to be rejected. This institute shall not be responsible for any technical glitches while uploading the tender on E-Portal.
- 7.6 Tenders will be opened on due date at CIRT, Pune in the presence of the bidder or their representative with authorized letter.
- 7.7 CIRT reserves the right to cancel, reject or partially accept any of the tenders received without assigning any reason.
- 7.8 The rate shall be clearly indicating taxes, duty any other taxes laid by the Government of Public Body till date.
- 7.9 The bid offer should be kept valid for a minimum period of 180 days after the opening tender.
- 7.10 The schedule of probable quantities is liable to alterations, omissions, deductions or additions at the discretion of the Director CIRT.
- 7.11 At any time prior to the deadline for submission of bids the competent authority for any reason, may modify the RFP by amendment notified in the tender notice published in the website www.cirtindia.com at its discretion and may extend the deadline for the submission of bids.
- 7.12 CIRT / Dept. may terminate AMC giving two months' notice.
- 7.13 CIRT reserves the right to cancel the bid at any given point of time prior to opening of financial bids.
- 7.14 CIRT reserves to accept / cancel / reject / split-up the contract without assigning any reasons thereof.

8. Language of the Tender

The tender and all subsequent correspondence shall be in English. If any literature submitted by the tenderer is any other language, an English translation thereof should also be submitted, and the English translation shall prevail for interpretation of the tender.

9. Tendering Expenses

The tenderer shall bear all expenses incurred in or in relation to preparation, mailing and submission of its tender and its subsequent processing regardless of the conduct or outcome of the tendering process. All expenses for visits to site by the tenderer and their representatives will also be borne by them only.

10. Earnest Money Deposit (EMD)

- 10.1 An Earnest Money Deposit as mentioned in Tender Notice will have to be paid along with the tender by a crossed Demand Draft drawn on any Nationalised / Scheduled Bank in favour of the Director, CIRT and payable at Pune. The same should be submitted in a separate envelope superscribed as “EMD for ADTS System”. A scanned copy of the EMD should be uploaded on the tender portal. Tender without Earnest Money Deposit will be rejected. Request for exempting payment of Earnest Money Deposit will not be considered.
- 10.2 If the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender or extension thereto; his EMD will be appropriated. The successful tenderer’s earnest money will be appropriated if he does not sign the contract and furnish the performance security within the specified period.

11. Tender Validity

- 11.1 The tenders should remain valid for acceptance for a period of 180 days (One Eight Days) after the date of tender opening indicated in the tender document. If the day up to which the tenders are valid falls on/ is subsequently declared a holiday or closed day for the bidder, the tender validity shall be automatically extended up to the next working day.
- 11.2 This RFP document is non-transferable. This document is intended for limited circulation only and shall be given upon payment of the RFP price.

12. Basic Principle

CIRT reserves the right to have the financial and other data / credentials claimed by the bidder verified independently, if necessary, by a third party. If the data / credentials furnished are found to be incorrect, CIRT will reject the particular Tender summarily. CIRT also reserves the right to reject any Tender submitted by a party if it comes to know suo-moto of any adverse reports on the financial condition and other matters of the tenderer.

13. Preliminary Scrutiny of Tenders

The tenders will first be scrutinized to determine whether they are complete and meeting the essential and important requirements, conditions etc. as prescribed in the tender enquiry document. The tenders who do not meet the basic requirements are liable to be treated as unresponsive and ignored.

14. Notification of Award

Before expiry of the tender validity period, the Purchaser will notify the successful tenderer in writing, by registered / speed post or by fax (to be confirmed by registered / speed post) that its tender for goods & services has been accepted. EMD of all other bidders would be returned.

15. Contract Price

- 15.1 The Contract Price shall be the price for delivery at the place of installation, and it shall be firm and fixed price subject to variation in Indian duties and taxes but not subject to any escalation whatsoever. It shall also include the cost of Site Preparation & Services, Supply & Delivery, Installation & Commissioning, Transportation & Insurance, Inspection & Survey charges, Test and trials, Services of manufacturer's during warranty periods, Customs Duty and Central Excise Duty if & as leviable and all other taxes and duties as applicable.
- 15.2 The Contract Price shall not be subjected to any adjustment in respect of rise or fall in the cost of labour, materials, currency rate variation, devaluation or any other matter having implication on the cost of the execution of the Contract and adjustments for subsequent legislation, statute, ordinance, decree, law, regulation that may occur in the country in which the System is being manufactured.

16. Force Majeure

- 16.1 The Bidder shall not be liable for any penalisation if there is delay and / or failure in fulfilling his obligations under the contract as a result of an event of Force Majeure. For this purpose, Force Majeure means an event beyond the control of the Bidder and not involving the Bidder's fault or negligence and not brought about at the instance of the Bidder claiming to be affected by such event or which if anticipated or foreseeable, could not be avoided or provided for and which has caused the non-performance or delay in performance. Such events may include, but are not restricted to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, and freight embargoes.
- 16.2 If a Force Majeure situation arises, the Bidder shall notify the Purchaser in writing of such conditions and the cause thereof within five days of occurrence of such event. Unless otherwise directed by CIRT/IDTR in writing, the Bidder shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of

Force Majeure for a period exceeding thirty days, penalty provisions as per clause 25 shall become applicable. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, CIRT/IDTR may at their option terminate the contract and forfeit the Performance Bank Guarantee.

- 16.3 Within ten (10) days after completion of the tests and inspection, CIRT shall notify the Bidder by Email / post/courier or by fax of its acceptance of the tests including Facility, if the Systems satisfy the requirements of this contract and the specifications. However, in the tests and inspection should any defects come to notice in the Systems or machineries and accessories and/ or the Systems or any part or equipment thereof does not conform to the requirement of this contract and/ or the specifications, the Bidder shall take necessary steps to correct such defects and/ or non-conformity within a reasonable period or period of time mutually agreed to. However, such periods would be subject to liquidated damages.

17. Bid Disqualification

- 17.1 The Bid is not submitted in accordance with the provisions specified in this document.
- 17.2 Non-submission of EMD.
- 17.3 If the bidder provides options for the equipment's, hardware components or any other infrastructure in the proposals.
- 17.4 During validity of the bid, or its extended period, if any, the Bidder increases his quoted prices.
- 17.5 The Bidder qualifies the bid with his own conditions.
- 17.6 Bid is received in incomplete form.
- 17.7 Bid is received after due date and time.
- 17.8 Bid is not accompanied by all requisite documents.
- 17.9 Information submitted in Technical Bid is found to be misrepresented, incorrect or false, accidentally, unwittingly or otherwise, at any time during processing of the contract (no matter at what stage) or during the tenure of the contract including the extension period if matter at what stage) or during the tenure of the contract including the extension period if any.
- 17.10 Commercial bid is enclosed in the same envelope consisting of hard copy of the technical bid.
- 17.11 In case of equipment being offered have deviations from the specification laid down in this RFP which cannot be accepted by CIRT. The Bidder shall describe in what respect and to what extent the equipment, Hardware and System Software and the networking solution being offered differ / deviate from the specifications, even though the deviations may not be very material. Bidder must state categorically whether or not his offer conforms to specifications and indicate deviations, if any.

18. Use of Contract Documents and Information

- 18.1 The bidder shall not, without the Purchaser's prior written consent, disclose the contract or any provision thereof including any specification, drawing, sample or any information

furnished by or on behalf of the Purchaser in connection therewith, to any person other than the person(s) employed by the Bidder in the performance of the contract emanating from this tender enquiry document. Further, any such disclosure to any such employed person shall be made in confidence and only so far as necessary for the purposes of such performance for this contract.

18.2 The bidder shall not, without the Purchaser's prior written consent, make use of any document or information, except for the sole purpose of performing this contract.

18.3 Except the contract issued to the Bidder, each and every other document mentioned herein above, shall remain the property of the Purchaser and, when advised by the Purchaser, all copies of all such documents shall be returned to the Purchaser on completion of the Bidder's performance and obligations under this contract.

19. Patent Rights

The Bidder shall, at all times, indemnify the Purchaser, free of cost, against all claims which may arise in respect of goods & services to be provided by the Bidder under the contract for infringement of any right protected by patent, registration of designs or trademarks. If any claim of alleged breach of patent registered designs, trademarks, etc., is made against the purchaser, he shall notify the Bidder about it and the Bidder shall, at his own expenses take care of its settlement without any liability to the Purchaser.

20. Copyrights

This tender document is the property right of Central Institute of Road Transport. It may not be copied, distributed or recorded on any medium, electronic or otherwise, without written permission thereof. The use of the contents of this document, even by the authorized personnel / agencies for any purpose other than the purpose specified herein, is strictly prohibited and shall amount to copyright violation and thus, shall be punishable under the Indian Law.

21. Dispute Resolution and Jurisdiction

21.1 In case of dispute between both the parties, the same will be referred to the sole Arbitrator as per the Arbitration and Conciliation Act 1946 as amended by Arbitration and Conciliation (Amendment) Act 2015. The Arbitrator will be appointed by DIRECTOR, CIRT at their discretion. The venue of the arbitration proceeding will be at Pune and the cost of the arbitration proceeding will be borne by each of the parties as to 50%. The language of the arbitration proceeding will be in English.

21.2 Subject to the above, the Courts at Pune, Maharashtra shall have exclusive jurisdiction in respect of all matters arising out of the Contract up to the date of handover. For disputes arising after handover and pertaining exclusively to the operation and maintenance phase, the competent courts having jurisdiction over Kolkata, West Bengal shall have jurisdiction.

21.3 Upon successful commissioning and formal handover of the Automation system to the Transport Department, Government of West Bengal, all rights and obligations related to

operation, maintenance, warranty support, defects liability, and performance of the system shall vest with the Transport Department, Government of West Bengal. Any disputes arising after such handover and directly related to the operation, maintenance, warranty, or performance of the installed system shall be resolved between the Contractor and the Transport Department, Government of West Bengal, in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and amendments thereto.

22. Introduction of System

- 22.1 The Technology used to assess the driving skill of the applicant shall be Smartphone, & overhead camera. The computer hardware to be used with latest specification of the equipment to be installed at the proposed site and will have following features:
- 22.2 A system of requisite number of overhead video cameras, smart phone, surveillance cameras for the tracks and one Camera at Registration Counter.
- 22.3 Automation using hybrid system

Smartphone	● Smartphone will be installed inside the vehicle to capture applicant photo and identify. ● Seat Belt Detection
Overhead Camera	● Driving Test Parameters for LMV / Motorcycle ● Test Completed Partially ● Standard Direction Followed ● Stoppage's Detection (Circle fill with black color) ● Average Speed in kmph ● Forward Detection (Smooth line with direction arrow) ● Reverse Detection (Dotted / Dash line) ● Kerb Hit / Vehicle out of track /

- 22.4 Once the applicant test is completed the Automated System should transfer Smartphone Images from Smartphone through secured wireless to the Server / Control Room.
- 22.5 Computer system to receive information from the Overhead cameras, Traffic Signal, smart phones etc. installed on the test tracks to monitor the vehicle movement inside and outside.
- 22.6 The application software will evaluate driving skill of the applicant as per the parameters mentioned in the RFP.
- 22.7 On completion of test, the result shall be generated which can be stored in the database, retrieving reports in pdf format.
- 22.8 The database to be maintained financial year wise for future reference during the contract tenure.
- 22.9 The system saves and retrieves the history of all tests conducted for the candidate.
- 22.10 A computer graphical printout can be given to the candidate which gives information on various driving parameters such as standard direction, reverse, stoppage, kerb hit (Vehicle

out of track), vehicle speed, test duration, graphical layout etc. which is not possible in manual system.

23. Methodology

The test track will be of either tar road / cement road / paver block with clear marking of boundary. The test track automation consists of LMV & Motorcycle category vehicle i.e.

- LMV Track
 - Gradient Track
 - H - Track
 - Parallel Parking
- Serpentine Track (Motorcycle)

Necessary hardware such as camera will be fitted on a pole to capture videos of the candidate taking the driving test. Software will interface with camera hardware which collects vehicle path information on real time basis as the vehicle moves on the test tracks. It plots and traces the path taken by the vehicle on test tracks on a two-dimensional image display on a computer console. Appropriate best fit algorithms for plotting the path traced by the vehicle need to be developed. The system performs several computations for determining driving competency of the driver such as number of forwards and reverses, Standard Direction, Kerb hit (Vehicle moving outside the test track), average speed, time taken to complete the test, standard directions followed, stoppage during test etc. for each test.

Once applicant completes the test and system receives images from smart phones, the system must generate the test result in less than one minute without any manual intervention.

24. Scope of Work

- 24.1 The scope of the Bidder is to study and develop the Automated Driving Test System.
- 24.2 The system should automate the process of evaluating the driving skills of the applicant driving vehicles on Gradient Track, H-Track, Parallel Parking and serpentine track (motorcycle).
- 24.3 The Bidder shall be required to estimate the required products and services given in this RFP. The Bidder has to take total responsibility for working out macro and micro level details of the project plan and the requirements and make provisions to utilize the existing infrastructure as per the information furnished in RFP.
- 24.4 Bidders shall be required to implement the proposed systems and provide support and maintenance for all the systems for a period of 5 years from the date of roll out.
- 24.5 The Bidder shall be required to submit a project plan considering the entire scope expressed in the RFP document or scope deemed necessary and manage the project execution.
- 24.6 The Bidder to train the MVIs to operate the system. Team of approx. 5 to 6 people.
- 24.7 Two full time technical person to be deputed on site for smooth operation of system.
- 24.8 The system to compute driving analysis online, display test path, driving speed and display violations if any on console installed in the control room.
- 24.9 The system should store database test result, Video from the Camera, Smartphone images for the period of three months. The Database result to be maintain throughout the contract period and to be maintained year wise.

25. TEST PROCEDURE FOR LMV & Motorcycle

- 25.1 Registration Module: Applicant details will be stored in the system such as App Unique ID, Appointment Number, Appointment Date, Applicant Name, Applicant Photo (Captured through Web Cam), Birth Date, Gender, Driving School Name, Batch ID if any etc, type of Test RTO or Other will be stored in the database. The details of registration page will be shared with L1 bidder during development stage.
- 25.2 The system to be interlink with Sarathi portal.
- 25.3 The Transaction table will store App. ID, test date and time for category of vehicles and other test parameters.
- 25.4 The Video Analytics camera should be embossed with Applicant ID, Test Date (dd-mm-yyyy) and Time (HH:MM:SS) format.
- 25.5 On Test Track: Before start of the test, the Smartphone will be installed in the vehicle LMV, the user will enter applicant ID, the system will fetch the data from the server. The system should validate the applicant through face recognition and identifications.
- 25.6 There will be two types of users i.e. One Operator and another Admin. The operator will have limited access, and Admin will have full access of the system. There should be no limit for creating the User ID.
- 25.7 Test videos should emboss date (dd-mm-yyyy, time stamp (HH:MM: SS) and User ID. The video stream to contain the user id and need to be protected for any alternatives if video files are updated system should recognize such update.
- 25.8 The applicant data will be searched on ID / Name / Date.
- 25.9 System downtime to be recorded in the system.
- 25.10 Two Technical persons to be deputed by the bidder full time who will handle hardware and software day to day issues, the system will be operated by the Dept.

26. Test Observations

- 26.1 The system should save the vehicle tracking data from all devices like cameras, Smartphone, Traffic signal and any other electronic system used in the test track. It must also save the evaluation results with time stamps and applicant's personal details along with the video, images of the test tracks. The system should be able to retrieve the history of all tests. The system should provide easy retrieval of data through software for audits and evidence as and when required.
- 26.2 Test result to be derived in a printable, graphical cum text format / pdf format. This result indicates the performance of the applicant with reference to the pass / fail parameters such as Standard Direction, Vehicle speed, reverses, kerb hit detection, test duration, stoppages etc.

27. Standard Operating Procedure

Detailed description of the testing process is outlined below.

Step 1: Entry

- (i) The applicant is required to be available at the Driving Testing Center Two hours before the scheduled test time.
- (ii) Security personnel shall be made available at all times at the entry by the department.
- (iii) The security personnel shall check the appointment acknowledgement of the applicant before allowing him/her to enter the premises of the Driving Testing Center.

- (iv) On successful verification of the appointment acknowledgement, the security personnel shall direct the applicant to Counter A.

Step 2: Counter A

- (i) Authorized personnel of the Dept. shall always be available at this counter for the verification of documents and applicant identity.
- (ii) One Desktop computer with Web camera shall always be made available at this counter for the applicant / driver registration. One manpower to be deputed by the SI.
- (iii) On successful verification of applicant's identity, photograph shall be captured by the web camera through System.
- (iv) The RFID Card will be issued to the applicant.
- (v) The applicant shall be directed to 'Counter B'

Step 3: Counter B – Waiting Area / Training Classroom

- (i) Waiting area shall be equipped with a LED Television which will continuously play orientation videos of LMV & Motorcycle.
- (ii) The television should display an informative video of driving test procedure along with road safety awareness videos.
- (iii) The applicant will then proceed to the Test track.

Step 4: Counter C – Test Track

- (i) One person / operator from dept. will be deputed by the dept. in the testing range to clear the track and for overall monitoring. The applicant shall wait in the queue at the test track. The smartphone will be installed. The applicant or operator will enter applicant ID, the mobile app. will validate and will continuously monitor applicant authenticity. A snapshot of the applicant will be captured at least two randomly by the system for each test and will be stored in the database for the audit purpose. All Video files to be maintain for 90 days. The Video files should be embossed with date, time, applicant id.
- (ii) If due to any reason smart phone is unable to recognize the applicants manually it can be overridden but such cases records to be strictly maintain in the system for future audit purpose.
- (iii) The smart phone should detect presence of seatbelt.
- (iv) At the start of the test Traffic Signal is mounted, the traffic signal will turn green as soon as applicant identity is verified. Before turning signal into green system should also verify if test track is empty without any manual intervention and then system to be ready to assess the driving skill of the applicant. The applicant must move on the test track as directed by the traffics signal & road signs and as indicated.
- (v) The start and stop of all the tracks to be controlled by induction loop. The time recorded by the induction loop shall be considered for the test evaluation.
- (vi) At the end of test VMS shall display test result pass / fail / re-test.

- (vii) If the message displays “Re-test” due to technical glitches in hardware & software, the candidate shall again appear for re-test. There should be entry in the system for such applicant re-test with reason.
- (viii) On completion of the test, the applicant shall move to the tracks’ exit.

Step 5: Counter D –Track Exit

- (i) One personnel shall always be made available at the exit test track by the dept.
- (ii) After completion of ground test applicant requires to hand over RFID Tag, Smartphone of the center.
- (iii) The applicant shall be directed to exit the Driving Test Center on completion of the driving test.

Step 6: Test Report

- (i) Before generating final test result by the system. The Dept. person may review the entire test and provision in the software to be provided for any additional input / test observation.
- (ii) The Test result generated by the system for driving skill will be observed by the Dept. (Test Result View, Video Footage, Smartphone images) and if found any software errors / technical glitches and will be notified in the system and test shall be cancelled with proper justification.

Step 7: Exit

- (i) The candidate shall then move towards the exit of the Driving Testing Center.

28. System Test Configuration Parameters

- a) Define Standard Path
- b) Number of reverses allowed.
- c) Number of forward allowed.
- d) Number of stoppages allowed.
- e) Test duration in seconds.
- f) Define Speed limit.
- g) Number of kerb hits allowed.

- 28.1 The system should provide real-time visual indication of every applicant's position on the test track.
- 28.2 The system should give a real time indication of violations.
- 28.3 The system should provide statistical reports of the tests conducted approx. 25 to 30 customized reports. The format will be shared with L1 bidder.
- 28.4 The software should provide facility to take regular backup / restore of the database.
- 28.5 Database to be stored in the encrypted format. Video files, configuration files, pass/fail parameters, software output files etc. to be secured properly.
- 28.6 In order to have valid time stamps on the data, the Servers / Computers at the testing station, shall be synchronized within internet timings and cameras and other devices to synchronize timing with Servers & Computes installed in control room.
- 28.7 The Video data retention period limited to 90 days after this data will be overwritten or deleted.
- 28.8 The system should generate alerts if any wrong result is generated due to technical problem.
- 28.9 Test working days Monday to Saturday as per office timings of the Dept.

29. Driving Skill Compliance for LMV & Motorcycle

Track	Driving Skill Test Requirements	Compliance Yes / No	Bidder's comments, if No
A	Registration Module		
1.	User Registration Form with Photo capture		
2.	Integration with Smartphone & Camera		
3.	Database MS-SQL Standard Edition, perpetual license with 10 CAL License		
B	Smartphone App Features		
4.	Smartphone to access the applicant through face recognition and identification.		
5.	Seat Belt Detection.		
6.	Video to emboss with Applicant ID, Date & Time, GPS Location.		
A.	Gradient Track Driving Test Parameters		
7.	Standard parameters to be detected by the System		
8.	o Test attempted (Yes / No)		
9.	o Standard Direction Followed		
10.	o Stoppage's if any - (Circle fill with black color)		
11.	o Forward Detection (Smooth line with direction arrow)		
12.	o Reverse Detection (Dotted / Dash line)		
13.	o Rollback (Approx. 6 to 12 inches)		
14.	o Compute Test Time in seconds		

Tender Document for Automation of Driving Test Track using Video Analytics and Smartphone

Track	Driving Skill Test Requirements	Compliance Yes / No	Bidder's comments, if No
15.	o Plot Test Graph 2D		
16.	o Marks allocation based on performance		
17.	Kerb Hit / Out of Track		
18.	Report in pdf format		
19.	Play back test recorded with captured video and video analytics output, with applicant ID, Name, Test ID, RTO Code, Time and status of Traffic signal (Green / Yellow / Red)		
B.	H- Track Driving Test Parameters		
20.	Standard parameters to be detected by the System		
21.	o Test attempted (Yes / No)		
22.	o Standard Direction Followed		
23.	o Stoppage's if any - (Circle fill with black color)		
24.	o Forward Detection (Smooth line with direction arrow)		
25.	o Reverse Detection (Dotted / Dash line)		
26.	o Compute Test Time in seconds		
27.	o Plot Test Graph 2D		
28.	o Marks allocation based on performance		
29.	Kerb Hit / Out of Track		
30.	Report in pdf format		
31.	Play back test recorded with captured video and video analytics output, with applicant ID, Name, Test ID, RTO Code, Time and status of Traffic signal (Green / Yellow / Red)		
C	Parallel Test Driving Parameters		
32.	Standard parameters to be detected by the System		
33.	o Test attempted (Yes / No)		
34.	o Standard Direction Followed		
35.	o Stoppage's if any - (Circle fill with black color)		
36.	o Forward Detection (Smooth line with direction arrow)		
37.	o Reverse Detection (Dotted / Dash line)		
38.	o Compute Test Time in seconds		
39.	o Plot Test Graph 2D		
40.	o Marks allocation based on performance		
41.	Kerb Hit / Out of Track		
42.	Report in pdf format		

Tender Document for Automation of Driving Test Track using Video Analytics and Smartphone

Track	Driving Skill Test Requirements	Compliance Yes / No	Bidder's comments, if No
43.	Play back test recorded with captured video and video analytics output, with applicant ID, Name, Test ID, RTO Code, Time and status of Traffic signal (Green / Yellow / Red)		
D.	Motorcycle		
44.	Face Recognition and applicant identification (Note Smartphone will not be mounted on the vehicle)		
45.	Test attempted (Yes / No)		
46.	Standard Direction Followed		
47.	Forward Detection		
48.	Test Duration (Start Time & End Time in seconds)		
49.	Vehicle Stoppage (for more than 3 seconds) for Foot down / Stopping / Halting.		
50.	Vehicle out of Track Detection / Kerb Hit Detection		
51.	Plot Test Graph 2D		
52.	Report in pdf format		
53.	Play back test recorded with captured video and video analytics output, with applicant ID, Name, Test ID, RTO Code, Time and status of Traffic signal (Green / Yellow / Red)		
54.	<i>During Test</i>		
55.	<i>System to detect two-wheeler.</i>		
F	End Test		
56.	VMS to be installed on all tracks to display Test Result – Pass / Fail with applicant ID / Name Scrolling or Retest message if due to any technical failure.		
57.	Note: System should plot vehicle path / trajectory, legends to be used like i.e. vehicle going out of the track should mark as Cross Sign in red color& vehicle if stopped in should mark with circle fill with black color. The vehicle path if moving in forward direction should be of different color and when reversing should be of different color and should be clearly visible on the system as well as on monochrome printout. Dotted / Dashed line can be used for depicting vehicle moving in reverse direction.		
H	UTILITIES		

Track	Driving Skill Test Requirements	Compliance Yes / No	Bidder's comments, if No
58.	Login to System		
59.	Login to Administration		
60.	System to be protected against any tampering		
61.	Daily backup of Database & Video		
62.	Video Retention Period 90 days		
63.	Database Retention period year wise to be maintained for the entire contract period.		
64.	Animated Video (Pass & Fail cases for Eight Track)		
65.	Install Strong Access Point to transfer data from Smartphone to Control room.		

30. Technical Evaluation Parameters

- 30.1 Minimum 70% marks are required to score to qualify for financial bid opening.
Any proposal not complying with the requirements of the Technical criteria will not be processed further.
- 30.2 Commercial evaluation can thereafter be on 'L1' basis amongst the technically qualified Bidders

31. PRE-QUALIFICATION CRITERIA

Following documents are to be submitted in the technical document.

Sr No	Criteria	Supporting Documents
1	The bidder (or all consortium partners) must be a registered company in India, registered under the Companies Act 1956. The bidder should be operating in India for the last five years as on 31/03/2024	• Copy of the Certificate of incorporation /Registration issued by the relevant statutory authority. • Copy of Memorandum and Articles of Association. • Any other relevant documents.
2	Annual Turnover • The bidder must have a minimum annual average turnover of Rs. 55 Lakh from IT/ITES/ICT/Telecom Sector in last	• CA certificate as per Annexure 1 along with copy of the audited Profit & Loss Statements for the respective years.

Sr No	Criteria	Supporting Documents
	five financial years 2021-22, 2022-23, 2022-23, 2023-24, 2024-25	• Copy of Memorandum and Articles of Association of each member.
3	The bidder should have valid quality certification. • ISO 9001:2008 or equivalent • ISO 27001:2013	Copies of the valid certificates as on bid submission date from authorized agencies
4	The bidder (all consortium partners in case of consortium) should submit valid documentary proof of GST/Sales Tax/VAT registration number and the details of income tax registration (PAN).	• Copy of PAN Card • Copy of GST
5	Any bidder (or member of a consortium) debarred / black-listed by Central / State Government/ PSU / IDTR, shall not be allowed to participate in this tender.	Bidder (all members in case of consortium) need to submit an affidavit in this regard as per Annexure 2.

32. Selection of SI

- 32.1 The response to **Request for Proposal** in the form of BID are requested for the item(s) in complete accordance with the documents/attachments as per the following guidelines. The bidders would be shortlisted based on the Technical score and SI would be selected based on lowest commercial quote offered by the shortlisted bidders.
- 32.2 Prior to the detailed evaluation of the Technical Bids, CIRT shall determine whether each bid is (a) complete, (b) is accompanied by the required information and documents and (c) is substantially responsive to the requirements set forth in the RFP document. Only those bidders, who fulfill all the qualifications mentioned in the section “Qualification Criteria” of the tender, shall be eligible and qualified for further technical scrutiny as per the Evaluation Framework given below.
- 32.3 Bidders should obtain minimum 70% in the technical evaluation to qualify for opening of the Commercial Bid. The purchaser’s evaluation in this regard shall be final and binding on the Bidder.

33. EVALUATION FRAMEWORK

Tender Document for Automation of Driving Test Track using Video Analytics and Smartphone

- 33.1 The Authority shall examine and evaluate the qualification of each Bid upon determining its eligibility. The Authority will evaluate the Bid Documents to assess the Bidder's capability of establishing and maintaining the ADTS.
- 33.2 The Bidder must meet Qualification Criteria as specified in the RFP in order to qualify for short listing of authorization.
- 33.3 In case the Bidder is not able to submit the documents required to demonstrate capability as provided in the RFP and/or the Bidder is not able to satisfy the Authority with regards to clarifications/information/confirmations sought from the Operator(s), the Authority, at its sole discretion, can consider such Bids to be ineligible and will not be process further.
- 33.4 The Bids/Eligibility and Qualification Submission of the Bidder determined to be responsive, meeting Eligibility and Qualification Criteria shall be declared Eligible and Qualified Bids (the "Eligible and Qualified Bids"/ "Eligible and Qualified Bidder").
- 33.5 Bidders who have qualified as per the Pre-Qualification Criteria of this RFP document shall be evaluated and scored by the RFP Evaluation Committee based on a weighted point system, assessing each bidder's ability to satisfy the requirements set forth in the RFP Document. The criteria for the evaluation are as follows:

S. No.	Criteria	Marks	Maximum Marks
1	The Bidder (Lead Partner in case of Consortium) must have Average Annual Turnover of last 3 (three) financial years amounting to Rs. 55 Lakhs (2022-23, 2022-23, 2023-24)		10
2	The Bidder (Lead partner in case of consortium) should have a positive net worth in financial year 22-23 or 23-24 as per the audited reports:		10
3	- One similar project completed costing INR Rs.155 lacs. - OR - Two similar projects completed costing INR Rs.95 lacs each. - OR - Three similar projects completed costing INR Rs.56 lacs each. (Work order / Purchase order to be shared)		10
	Similar work means system developed using video analytics technology for evaluating Driving skill of the applicants for LMV Vehicles in outdoor environment in last Ten years for any IDTR/DTC/RDTC/STUs/Transport Dept.		-
4	The Bidder (Single bidder or both consortium members put together in case of consortium) must have implemented video analytics automation solution of at least one site, in any of the State IDTR/ DTC/ RDTC/ STUs/Transport Dept. for LMV using Video Analytics system for Eight Track, H-Track or S-Track and Gradient Track. (Minimum two projects)		10
5	The Bidder must possess a valid (as on the date of submission of the bid) quality certification ISO 9001:2015 / ISO 27001 / CMMI level 3 certification		10
	Anyone Certification ISO 9001:2015 / ISO 27001 / CMMI level 3	2	
	Any two of ISO 9001:2015 / ISO 27001 / CMMI level 3	5	
	All three Certifications ISO 9001:2015 / ISO 27001 / CMMI level 3	10	
6	Automation System implemented using Video Analytics, using overhead cameras.	50	

S. No.	Criteria	Marks	Maximum Marks
	The Bidder (Single bidder or both consortium members put together in case of consortium) must have implemented video analytics automation solution of at least one driving testing track in any of the Transport Dept. / STUs / UT / IDTR / DTC in India for LMV category vehicle using Video Analytics system for any one site i.e. Eight Track, H-Track or S-Track, Gradient Track. The bidder is required to show demo online or CIRT officers may visit site for verification of the system.		
A	Smartphone Application	-	
	Applicant Face Detection	4	
	Seat Belt Detection	4	
B	LMV Track	-	
	Standard Direction	5	
	Plotting the 2D vehicle path	4	
	Identification of stops	4	
	Duration of the test in an individual track	4	
	Kerb hit / Vehicle Out of Track	4	
	Identification of reverse movement	4	
C	Motorcycle	-	
	Standard Direction	5	
	Plotting the 2D vehicle path	4	
	Identification of stops	4	
	Helmet Detection	4	
	Total Marks		100

34. COMMERCIAL BID EVALUATION

- 34.1 Commercial bid of only those bidders who has obtained minimum 80% score in Technical Evaluation shall be opened.
- 34.2 The contract will be awarded to the qualified bidder whose responsive bid is determined to be the lowest evaluated commercial bid and fulfils all tender conditions.
- 34.3 Costs of capital investments quoted in the project should not exceed more than 60% (Sixty) percent of total costs of the fixed scope of the project. In case the bidder quotes higher figures/prices towards capital costs the same shall be restricted to 60% (Sixty) percent and the balance shall be made a part of Quarterly OPEX payments. Accordingly, all the module/ schedule of CAPEX cost will be reduced proportionately.
- 34.4 In commercial bid evaluation if L1 bidder does not agree to take order then subsequently L2 and L3 will be given chance to execute the order provided they matches the L1 bidders price.
- 34.5 Any figures (price) if left blank by the bidder in Financial BoQ will be considered as '0' (zero).
- 34.6 Financial Bid format – “BOQ Format”(Annexure-8)

35. NOTIFICATION OF AWARD

- 35.1 Prior to the expiration of the period of bid validity, the purchaser will notify the successful Bidder that its bid has been accepted.
- 35.2 On Behalf of Director CIRT, Head ASD / RCC shall facilitate signing of the contract within the period of 10 days approx. of the notification of award. However, it is to be noted that the date of commencement of the project and all contractual obligations shall commence from the date of issuance of Purchase order/ Letter of Acceptance, whichever is earlier. All reference timelines as regards the execution of the project and the payments to the implementation agency shall be considered as beginning from the date of issuance of the Purchase order / Letter of Acceptance, whichever is earlier.
- 35.3 The notification of award will constitute the formation of the Contract. Upon the successful Bidder's, furnishing of Performance Bank Guarantee the purchaser may notify each unsuccessful Bidder and return their EMD's.

36. ACCEPTANCE OF CONTRACT

- 36.1 Purchaser notifies the successful Bidder that its bid has been accepted, the work order will be issued by CIRT. The L1 bidder is required to give an acceptance letter within one week from the date of issue of work order or else work order will be canceled, and order may be placed to L2 bidder if L2 bidder matches L1 price and so on. EMD of L1 bidder will be forfeited.
- 36.2 The rates in Work Order will be valid from the date of the issue of Work Order till the completion of the work. No representation in this regard will be entertained.

37. REJECTION CRITERIA

Besides other conditions and terms highlighted in the tender document, bids may be rejected under following circumstances:

- 37.1 Bids received through Fax / E-Mail.
- 37.2 Bids which do not confirm unconditional validity of the bid as prescribed in the Tender.
- 37.3 If the information provided by the Bidder is found to be incorrect/ misleading at any stage / time during the Tendering Process.
- 37.4 Any effort on the part of a Bidder to influence the purchaser's bid evaluation, bid comparison or contract award decisions.
- 37.5 Bids received by the purchaser after the last date for receipt of bids prescribed by the purchaser.
- 37.6 Bids without signature of person (s) duly authorized on required pages of the bid.
- 37.7 Bids without power of authorization and any other document consisting of adequate proof of the ability of the signatory to bind the Bidder.
- 37.8 Technical Rejection Criteria
- 37.9 Technical Bid containing commercial details.
- 37.10 Revelation of Prices in any form or by any reason before opening the Commercial Bid
- 37.11 Failure to furnish all information required by the Tender Document or submission of a bid not substantially responsive to the Tender Document in every respect.
- 37.12 Bidders not quoting for the complete scope of Work as indicated in the Tender documents, addendum (if any) and any subsequent information given to the Bidder.
- 37.13 Bidders not complying with the Technical and General Terms and conditions as stated in the Tender Documents
- 37.14 The bidder does not commence the work within 30 days from the date of issue of work order.
- 37.15 The Bidder not confirming unconditional acceptance of full responsibility of providing services if the bid does not conform to the timelines indicated in the bid.

38. COMMERCIAL REJECTION CRITERIA

- 38.1 Incomplete Price Bid
- 38.2 Price Bids that do not conform to the Tender's Price Proposal format.
- 38.3 Total price quoted by the Bidder does not include all statutory taxes and levies applicable.
- 38.4 If price bids of item found unbalanced.
- 38.5 If there is an arithmetic discrepancy in the commercial bid calculations the purchaser shall rectify the same. If the Bidder does not accept the correction of the errors, its bid will be rejected.

39. SYSTEM IMPLEMENTATION PLAN

- 39.1 Bidder is required to submit, detail plan implementation with track layout with location of camera detail installation procedure in picture format (preferably Color Printout). Appropriate legend to be displayed in all drawings.
- 39.2 System Architecture Designed Hardware & Software.
- 39.3 Bidder may be called for the presentation of past project handled in Video Analytics at his own cost.

40. PROJECT TIMELINESS

- 40.1 Project Timeline 3 months from the date of issue of work order. Maximum deviation one month will be granted beyond that penalty will be applicable.

41. WARRANTY

- 41.1 Warranty on all Hardware & Software Components - 3 years
- 41.2 Comprehensive AMC Two Years on all components after expiry of Warranty Periods.
- 41.3 The software should be thoroughly tested and free from any bugs, malware, malicious code etc.
- 41.4 The warranty period for Hardware & Software will start the successful demonstration of the system.

42. MANPOWER SUPPORT

- 42.1 The selected firm shall depute two manpower resource full time to support the following activities at the test centers.
- 42.2 Troubleshooting of Hardware & Software in coordination with backend team of the vendor.
- 42.3 Ensuring smooth functioning of the overall solution.
- 42.4 If any camera breakdown should be able to replace the same.
- 42.5 Handle all queries related to system Test.
- 42.6 Driving tests shall be conducted and monitored by the dept. staff / representative as well as it will be assisted by the bidder manpower technically and during operation.

43. Site visit and verification of information

Proposers are encouraged to submit their respective Proposals after visiting the Authority's Offices wherever possible and ascertaining for themselves the availability and condition of driving licensing test demand/traffic, location, civil infrastructure, availability of power, and its sensitivity, applicable laws and regulations, and any other matter considered relevant by them. It shall be deemed that by submitting a Proposal, the Proposer has:

- 43.1 made a complete and careful examination of the Proposal Documents.
- 43.2 accepted the risk of inadequacy, error or mistake in the information provided in the Proposal Documents or furnished by or on behalf of the Authority relating to any of the matters referred to in Clause above;
- 43.3 satisfied itself about all matters, things and information including matters referred to in Clause hereinabove necessary and required for submitting an informed Proposal, execution of the contract in accordance with the Proposal Documents and performance of all of its obligations there under;
- 43.4 acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the Proposal Documents or ignorance of any of the matters referred to RFP provision hereinabove shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from the Authority, or a ground for termination of the Contract Agreement by the Service Provider(s);
- 43.5 acknowledged that it does not have a Conflict of Interest; and
- 43.6 agreed to be bound by the undertakings provided by it under and in terms hereof.

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

- 43.8 Annexure 9 Enclosed for Track Layout.

44. Hand back on Termination or Expiry / Completion of Contract Tenure

The Authority shall retain the title and ownership of ADTS in relation to the Project under this agreement.

44.1 Upon Termination

Upon Termination for any reason whatsoever or Expiry/Completion of Contract Tenure, the Operator shall to the extent instructed by the Authority shall cease all further work as instructed by the Authority in the Termination/Contract Closure Notice and the Operator shall carry out works for the sole purpose of securing, preserving and protecting that part of the Works already Executed.

- 44.1.1 In case of termination, the security deposit paid by the Operator shall be forfeited by the Authority and all balance dues if any will not be paid to the Operator.

- 44.1.2 Upon termination or Expiry/Completion of Contract Tenure, the selected operator shall

- a) Transfer entire IT, civil and electrical infrastructure of ADTS including but not limited to test tracks, control room, ADTS hardware & software, cameras, IT accessories & equipment, integration of system etc. to the Authority. Operator will not have any rights on this transferred property stated above and the transferred property shall become a property of the Authority solely for its further use and the operator will not have any right on it.
- b) Comply with and confirm to the divestment requirement and the provisions of “divestment of rights” shall apply mutatis mutandis.

45. Payment Terms for Capital Items

Sr. No.	Payment Milestones for Setup cost	Payment Percentage Including Taxes
1	On Installation of Hardware, Registration Software, Smartphone application, functional testing of Software and Hardware Inspection for all the tracks and output result.	80%
2	After one month from the date of commissioning of system and successful testing.	20%

Note: All payments will be released subject availability of project funds.

46. AMC Payment

- 46.1 Quarterly payment after successful completion of quarter, including manpower payment.
- 46.2 During AMC period Preventive Maintenance to be carried out in each quarter for Cameras and other components.
- 46.3 Note: The system will be operated as per need basis. If system is not in operation for certain period, it must be maintained properly and any expenses arising out of it will be incurred by the bidder.
- 46.4 Note: The AMC payment will be released by the Transport Dept. once system is handed over to the Dept. after successful commissioning.

47. Penalty:

- 47.1 Penalty for delay in work completion
 - 47.1.1 Project Timeline starts from the receipt of Performance Bank Guarantee. Maximum deviation of one month is permitted failing which a penalty liquidated damages will be calculated as below:
 - a. 0.5% to 1.0% of the contract value per week of delay, subject to a maximum to 10% of the contract value.
- 47.2 Penalty for the errors during operation
 - 47.2.1 The successful bidder shall be liable for the penalty of Rs. 500/- per incidents of any kind of system errors during the operation of the Automated driving test tracks.
- 47.3 Penalty for other cases
 - 47.3.1 In the event that any fraud, malpractice, misrepresentation, unauthorized activity, security breach, data tampering, or other unethical practices attributable to the Contractor, its employees, agents, or subcontractors are detected in connection with the provided solution, whether within or outside the premises of site, the Contractor shall be liable for:
 - 47.3.2 A penalty up to 10% of the Contract Value for such misconduct.
 - 47.3.3 Recovery of actual losses/damages suffered arising from such acts.
 - 47.3.4 Invocation of the Performance Bank Guarantee, either wholly or partly.
 - 47.3.5 Termination of the Contract for default.
 - 47.3.6 Debarment/blacklisting from participation in future tenders of CIRT / Transport Dept. for a period as deemed appropriate by the Competent Authority.
 - 47.3.7 Initiation of appropriate civil, criminal, or statutory proceedings under applicable laws, including the Information Technology Act, 2000 and its amendments.

48. Transfer of Ownership / Responsibility Clause

- 48.1 The tender is being invited by the Central Institute of Road Transport (CIRT) for procurement, installation, commissioning, and comprehensive Annual Maintenance Contract (AMC) support of the specified IT hardware and associated systems for a total AMC period of five (5) years including one year warranty.

- 48.2 The bidders shall note that CIRT's role is limited to procurement, installation, commissioning, acceptance of the equipment, and project implementation support during the initial establishment phase of the Centre.
- 48.3 Upon completion of the implementation phase, and/or at any time as decided by CIRT, the Centre, along with all procured assets, rights, obligations, warranties, AMC entitlements, and related documentation, may be formally handed over to the concerned State Government authority, Govt. of West Bengal, or any other agency nominated by the Government of West Bengal.
- 48.4 The successful bidder shall, without any additional cost or change in commercial terms, recognize such transfer and continue to provide AMC, warranty support, maintenance services, spare parts, upgrades (where applicable), and all contractual obligations for the balance contract period directly to the State Government authority/agency taking over the Centre.
- 48.5 Following the handover, CIRT shall have no operational liability or day-to-day responsibility in respect of the Centre. All service requests, preventive maintenance schedules, payments due for the balance period (if structured accordingly under the contract), and operational coordination shall be undertaken with the successor authority as designated through a formal handover communication issued by CIRT.
- 48.6 Participation in this tender shall be deemed as unconditional acceptance by the bidder of the above transfer arrangement. No claim for additional compensation, revision in AMC charges, or modification of contractual terms shall be entertained on account of such transfer.
- 48.7 The bidder shall ensure that all OEM warranties, AMC agreements, licenses, and support arrangements are transferable to the successor organization without any restriction, penalty, additional fee, or requirement for fresh contracting.

49. User Acceptance Test

Sample test size vol. 100 tests of LMV & 100 test for motorcycle will be carried out in daytime.

Sr. No.	Test Parameters	System Accuracy (in %)	
		LMV	Motorcycle
1.	Test not attempted	100%	100%
2.	Standard Direction path line	98%	98%
3.	Reverse Detection Line (Dashed Line) (Approx. 6 to 12 inches above)	98%	98%
4.	Forward Detection Line (Continue Line with direction arrow)	98%	98%
5.	Reverse Count (if more than 6 to 12 inches)	98%	98%
6.	Vehicle Out of Track Detection / Kerb Hit (Cross Sign) - Pole Sensor Accuracy.	96%	96%
7.	Stoppage's if any - (Circle fill with black color) (If vehicle stopped more than 3 seconds)	98%	98%
8.	Compute Time Taken To complete test	99%	99%

Sr. No.	Test Parameters	System Accuracy (in %)	
		LMV	Motorcycle
9.	Plot Test Graph	98%	98%
10.	Mark allocation based on performance. (Arithmetical)	100%	100%
11.	Synchronization of Video Footage and Driving Path	98%	98%
12.	Registration Module	99%	99%
13.	MIS Reports	100%	100%

Note: The bidder needs to arrange the vehicle for testing.

50. SYSTEM COMPONENTS SPECIFICATION

50.1 Servers/ Workstation Specification

Sr. No.	Minimum Specification – Server / Workstation / Desktop	Compliance (Yes/No)
1	Renowned Brand of Workstation / Server / Desktop with Genuine Software during the contract period and after handover too.	
2	Operating System: Genuine Operating System	
3	Power Supply: 230V +/- 10% single phase, 50 Hz AC	
4	Certifications i) Windows and Linux OS certification. ii) Energy Star Compliant, TCO or equivalent, ROHS (Restriction of Hazardous Substances). Safety Certification: iii) FCC (Federal Communications Commission) for EMI and UL/CE for Safety	
5	Features: System Health monitoring Tool	
6	Pre-failure Alert	
7	LED Test Track Viewing OEM Monitor 24"	
8	Rack Mountable Server, Workstation	
9	OEM Authorization letter	
10	Configuration to be designed as per solution provided. Separate Annexure giving configuration and specification details required.	
11	OEM warranty Support 3 years on site (3-3-3) with 2 business days if any failure in the hardware	
12	Bidder to provide Configuration of Server / Workstation as per the solution design.	

50.2 Desktop Specification

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make	Reputed OEM Desktop manufactured/supplied under Make in India policy	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
2.	Model	To be specified by bidder	
3.	Processor	Intel Core i5 13th Generation or higher / AMD Ryzen 5 equivalent or higher	
4.	Chipset	OEM Compatible Chipset	
5.	RAM	16 GB DDR4/DDR5, expandable up to 64 GB	
6.	Storage	Minimum 512 GB SSD	
7.	Graphics	Integrated Graphics or Dedicated Graphics as per application requirement	
8.	Network Interface	10/100/1000 Mbps Ethernet Port	
9.	Audio	Integrated Audio Controller	
10.	Ports	Minimum 4 USB Ports, HDMI Port, DisplayPort or equivalent video output, RJ45 LAN Port	
11.	Security	Hardware TPM 2.0	
12.	Keyboard	OEM USB Keyboard	
13.	Mouse	OEM USB Optical Mouse	
14.	Monitor	24-inch LED Monitor, Full HD (1920×1080), HDMI Input	
15.	Operating System	Genuine Microsoft Windows Professional Edition	
16.	Health Monitoring	OEM Hardware Diagnostic and Health Monitoring Utility	
17.	Alert Features	Pre-Failure Alert for HDD/SSD, Memory and Hardware Components	
18.	Energy Efficiency	Energy Star Certified or Equivalent	
19.	Environmental Compliance	RoHS Compliant	
20.	Standards	BIS Certified wherever applicable	
21.	OEM Authorization	Manufacturer Authorization Form (MAF)	
22.	Power Supply	230V ±10%, 50Hz AC	
23.	Warranty	Minimum 5 Years Comprehensive OEM Onsite Warranty	
24.	Support Response	Next Business Day or Better	
25.	Country of Origin	Mandatory Declaration	
26.	Make in India Compliance	Product shall comply with latest Public Procurement (Preference to Make in India) Order	
27.	Local Content	OEM/Bidder shall submit Local Content Declaration	
28.	GFR Compliance	Bidder shall comply with Rule 144 (Land Border Sharing Restrictions) and subsequent amendments	

50.3 Web Camera Specification

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder with datasheet and brochure	
2.	Camera Type	USB Web Camera	
3.	Image Sensor	Minimum 2 MP CMOS Sensor	
4.	Video Resolution	Full HD 1920 × 1080 (1080p)	
5.	Frame Rate	Minimum 30 fps at Full HD Resolution	
6.	Connectivity	USB 2.0 or higher	
7.	Microphone	Built-in Microphone	
8.	Indicator	LED Indicator for Power/Camera Status	
9.	Power Supply	Powered through USB Port	
10.	Cable Length	Minimum 1.5 Meter USB Cable	
11.	Mounting Arrangement	Adjustable Clip / Monitor Mounting Kit	
12.	Compatibility	Compatible with Windows and Linux Operating Systems	
13.	Certifications	BIS, CE, FCC or Equivalent	
14.	Accessories	USB Cable, Mounting Clip/Stand and User Documentation	
15.	OEM Authorization	Manufacturer Authorization Form (MAF), if applicable	
16.	Warranty	Minimum 1 Year OEM Warranty	
17.	Support	Post-Warranty Support through CAMC during contract period	

Note: The USB Web Camera shall support Full HD (1920 × 1080) video resolution with a minimum frame rate of 30 fps. The camera shall be USB powered, compatible with Windows and Linux operating systems, and supplied with mounting accessories and all items required for installation and operation.

50.4 Camera Specification (Minimum)

A. Camera Specification

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder along with datasheet and brochure	
2.	Camera Type	Outdoor Fixed Bullet Network Camera	
3.	Image Sensor	Minimum 1/2.8" Progressive Scan CMOS	

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Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
4.	Resolution	Minimum 2 MP	
5.	Minimum Illumination	Colour: ≤ 0.01 Lux, IR On: 0 Lux	
6.	Lens	Fixed or Motorized Varifocal Lens suitable for application	
7.	Video Compression	H.265, H.264, MJPEG	
8.	Streaming	Minimum Triple Stream	
9.	Frame Rate	Minimum 25 fps at Full Resolution	
10.	Wide Dynamic Range	True WDR ≥ 120 dB	
11.	Day/Night Function	Auto / Day / Night / Scheduled	
12.	Infrared Illumination	Integrated Smart IR, Minimum 30 m Range	
13.	Image Enhancement	BLC, HLC, 3D DNR, ROI, Defog	
14.	Edge Storage	Micro SD Card Support (Minimum 256 GB)	
15.	Network Interface	1 $\times$ RJ45 10/100 Mbps Ethernet Port	
16.	Protocols	IPv4, TCP/IP, UDP, HTTP, HTTPS, DHCP, DNS, NTP, SMTP, SNMP, RTP, RTSP, QoS, 802.1X	
17.	ONVIF Compliance	ONVIF Profile S, G and T or higher	
18.	Simultaneous Users	Minimum 10 Concurrent Users	
19.	Video Analytics	Motion Detection, Intrusion Detection, Line Crossing, Region Entry/Exit, Scene Change, Tamper Detection	
20.	Audio Analytics	Audio Exception Detection (where audio is supported)	
21.	Event Actions	Upload to FTP/SMTP, SD Card Recording, Alarm Trigger, Network Notification	
22.	Housing Protection	IP67 and IK10	
23.	Operating Temperature	-5°C to +60°C or better	
24.	Power Supply	12 VDC and PoE (IEEE 802.3af/at)	

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Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
25.	Power Consumption	OEM Standard	
26.	Mounting Accessories	Complete mounting accessories and junction box (if required)	
27.	Warranty	Minimum 5 Years OEM Warranty	
28.	Spare Support	Minimum 5 Years from Supply Date	
29.	OEM Authorization	Manufacturer Authorization Form (MAF)	
30.	Documentation	Datasheet, Brochure and Compliance Statement	

B. Mandatory Certification for the Camera

Sr. No.	Certification / Compliance	Requirement	Compliance (Yes/No)
1.	BIS	Mandatory BIS Certification	
2.	CE	Mandatory	
3.	FCC	Mandatory	
4.	RoHS	Mandatory	
5.	ONVIF	ONVIF Profile S, G, T or higher	
6.	IP Rating	IP67 or higher	
7.	Impact Protection	IK10	
8.	Make in India	Compliance with latest DPIIT Make in India Guidelines	
9.	Country of Origin	Mandatory OEM Declaration	
10.	Local Content Declaration	Mandatory as per Public Procurement (Preference to Make in India) Order	
11.	STQC Certification	Preferred / Mandatory for Government Deployments where applicable	
12.	NDAA Compliance	Preferred	
13.	OEM Quality Certification	ISO 9001 Certified Manufacturing Facility	
14.	OEM Information Security Certification	ISO 27001 Certified Organization	

C. Mandatory Cybersecurity Compliance

Sr. No.	Cybersecurity Requirement	Minimum Requirement	Compliance (Yes/No)
1.	Secure Communication	HTTPS, SSL/TLS Support	
2.	User Authentication	Role-Based Access Control (RBAC)	
3.	Password Security	Strong Password Enforcement	
4.	Network Authentication	IEEE 802.1X Support	
5.	Audit Logs	Security Audit Logs Available	
6.	Firmware Security	Digitally Signed Firmware	
7.	Firmware Upgrade	Secure Remote Firmware Upgrade	
8.	Device Hardening	Ability to Disable Unused Services and Ports	
9.	Cybersecurity Patch Management	OEM Security Patches During Warranty Period	
10.	Brute Force Protection	Login Failure Lockout Mechanism	
11.	Encryption	Data Encryption in Transit	
12.	Time Synchronization	Secure NTP Support	
13.	Syslog Support	Integration with SIEM / Syslog Servers	
14.	Security Alerts	Event and Security Notification Support	
15.	Vulnerability Management	OEM Published Vulnerability Management Process	
16.	Secure Factory Default	Unique Default Credentials or Mandatory Password Change	

Note : The offered IP Camera shall comply with applicable cybersecurity requirements issued by MeitY, CERT-In, STQC and other Government of India agencies from time to time. The OEM shall provide security patches, firmware updates, and vulnerability remediation support throughout the warranty and support period. The offered camera shall support secure communication protocols, authentication controls, access management, audit logging and secure firmware mechanisms

50.5 General Specification for Networking peripherals, Power Cables, HDPE Pipes etc.

Sr. No.	Item	Minimum Requirement	Compliance (Yes/No)
1.	Industrial Network Switch	Managed Industrial Gigabit Ethernet Switch (10/100/1000 Mbps) with VLAN, QoS, SNMP, Port Management, Surge Protection and Industrial Operating Temperature Support. OEM Managed Switch from reputed manufacturer.	

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Sr. No.	Item	Minimum Requirement	Compliance (Yes/No)
2.	Rack / Enclosure	Wall Mount/Floor Mount Industrial Rack suitable for networking equipment. Outdoor racks shall be minimum IP65 rated with proper ventilation, earthing arrangement and cable management.	
3.	Information Outlet	Structured Cabling Accessories including I/O Boxes, Face Plates, Keystone Jacks, Patch Panels and termination accessories. All outlets shall be properly labeled and documented.	
4.	Network Cable (Outdoor)	Outdoor UV Resistant CAT6/CAT6A STP Cable complying with TIA/EIA and ISO/IEC standards. Suitable for outdoor installations and industrial environments.	
5.	Network Cable (Indoor)	CAT6 or higher cable suitable for structured LAN cabling. OEM certified components to be used end-to-end.	
6.	HDPE Duct / Conduit	HDPE Duct of minimum 40 mm dia or higher as per project requirement. Duct size shall accommodate existing and future cables with minimum 30% spare capacity.	
7.	Power & Data Separation	Separate HDPE ducts/conduits shall be used for Power and Communication Cables to avoid electromagnetic interference.	
8.	Cable Routing	All outdoor cables shall be routed through HDPE ducts/conduits. Open laying of cables shall not be permitted.	
9.	Trenching	Excavation, laying of ducts, backfilling, compaction and disposal of surplus material complete as per approved route plan.	
10.	Road Restoration	All roads, pavements or surfaces damaged during trenching shall be restored to original condition using approved materials.	
11.	Cable Marker	Permanent route markers shall be installed at all bends, crossings, junctions and at suitable intervals along the cable route.	
12.	Cable Chambers	RCC/Polymer Cable Chambers with lockable covers shall be provided at bends, junctions, road crossings and maintenance locations.	
13.	Power Cables	ISI Marked Copper Conductor XLPE Armoured Power Cables of suitable rating and size based on load calculations. Minimum 3-core for single-phase applications.	
14.	Earth Cable	Dedicated earthing conductor shall be provided for all active equipment, racks and outdoor installations.	

Sr. No.	Item	Minimum Requirement	Compliance (Yes/No)
15.	Cable Identification	All power and communication cables shall be permanently labeled at both ends and at intermediate maintenance points.	
16.	Cable Management	Proper cable trays, ties, organizers and routing accessories shall be provided to ensure neat and maintainable installations.	
17.	Earthing	All equipment, racks, poles and enclosures shall be properly earthed as per applicable IS standards.	
18.	Surge Protection	Suitable surge protection devices shall be provided for power and communication equipment installed in outdoor environments.	
19.	Environmental Protection	Outdoor installations shall be protected against dust, water ingress, corrosion and UV exposure.	
20.	Testing & Certification	Complete testing of network cables, power cables and earthing shall be carried out and reports submitted before commissioning.	
21.	Documentation	As-built drawings, cable route diagrams, chamber locations and cable identification schedules shall be submitted.	
22.	Standards	Installation shall comply with applicable BIS, IS, IEC, TIA/EIA and ISO standards.	
23.	Make in India Compliance	Products shall comply with latest DPIIT Public Procurement (Preference to Make in India) Order and amendments thereof.	
24.	Country of Origin	Mandatory declaration by bidder/OEM.	
25.	Local Content Declaration	Bidder shall submit Local Content Declaration as per prevailing Make in India guidelines.	

Note: The bidder shall supply, install, test and commission all networking components, racks, power cables, HDPE ducts, cable chambers, cable markers, earthing materials, mounting accessories and associated hardware required for complete and reliable operation of the system. Ducting infrastructure shall be designed with adequate spare capacity for future expansion without further excavation.

50.6 Outdoor use PoE Switch with compatible Power Supply Unit (PSU)

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder along with datasheet and brochure	
2.	Switch Type	Managed Industrial Gigabit PoE Ethernet Switch	
3.	PoE Ports	Minimum as per solution requirement, 10/100/1000 Mbps RJ45 PoE/PoE+ Ports	
4.	Uplink Ports	Minimum 2 × Gigabit RJ45 and/or SFP Uplink Ports	

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Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
5.	Switching Capacity	Minimum 20 Gbps or OEM Standard suitable for offered port count	
6.	Switching Method	Store and Forward	
7.	PoE Standard	IEEE 802.3af and IEEE 802.3at	
8.	PoE Function	Switch shall operate as Power Sourcing Equipment (PSE)	
9.	PoE Power per Port	Up to 30 W per Port (PoE+) or higher as required	
10.	Total PoE Budget	Suitable for all connected devices with minimum 20% spare capacity	
11.	Management Features	VLAN, QoS, Port Mirroring, SNMP, IGMP Snooping, DHCP, Web Management	
12.	Network Protocols	IPv4, TCP/IP, SNMP, HTTP/HTTPS, DHCP, NTP, RSTP/STP	
13.	LED Indicators	Power, System Status, Link/Activity and PoE Status	
14.	Power Supply	Compatible Industrial Grade PSU supplied with switch	
15.	Input Voltage	OEM Standard (typically 24–57 VDC or equivalent)	
16.	Surge Protection	Minimum 4 kV Ethernet Surge Protection	
17.	ESD Protection	Industrial Grade ESD Protection	
18.	Operating Temperature	-10°C to +75°C or better	
19.	Storage Temperature	-10°C to +85°C	
20.	Humidity	5% to 95% Non-Condensing	
21.	Installation	DIN Rail and Wall Mounting Supported	
22.	Enclosure	Rugged Industrial Metal Housing	
23.	Protection	Suitable for Outdoor Industrial Environment	
24.	Environmental Compliance	RoHS and WEEE Compliant	
25.	EMC Compliance	FCC Class A, CE or Equivalent	
26.	Safety Compliance	UL/CB/IEC Safety Certifications or Equivalent	
27.	Cyber Security	HTTPS Management, User Authentication and Password Protection	
28.	OEM Authorization	Manufacturer Authorization Form (MAF)	
29.	Warranty	Minimum 3 Years OEM Warranty	
30.	Support	Support and Service During Contract Period	

Note: The switch shall be an industrial-grade managed PoE switch designed for 24x7 continuous operation in outdoor environments. The switch shall support Gigabit Ethernet communication, IEEE 802.3af/at PoE standards, industrial temperature operation, surge protection, VLAN, SNMP management and CCTV/video surveillance network applications.

50.7 Switch Enclosure Specification

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder along with datasheet and brochure	
2.	Application	Outdoor enclosure suitable for housing PoE Switch, Media Converter, Fiber Termination, PSU, Surge Protection Devices and Networking Accessories	
3.	Enclosure Dimensions	Minimum 600 × 600 × 350 mm (W × H × D) or suitable to accommodate all supplied equipment with 20% spare space for future expansion	
4.	Construction Material	Welded CRCA Steel / Galvanized Steel Construction	
5.	Sheet Thickness	Minimum 1.6 mm Body and Door, Minimum 2.0 mm Mounting Plate	
6.	Front Door	Lockable, Hinged, Vandal Resistant Door with Gasket Sealing	
7.	Rear / Access Arrangement	Suitable rear or side access panel for maintenance, where applicable	
8.	Locking Arrangement	Heavy Duty Three-Point Locking System with Key	
9.	Door Stay	Door Stay Arrangement to prevent accidental closure and over-swinging	
10.	Mounting Plate	Zinc-Plated or Powder-Coated Mounting Plate	
11.	Cable Entry	Bottom Gland Plate with IP Rated Cable Glands	
12.	Cable Management	Internal Cable Routing and Management Arrangement	
13.	Ventilation	Natural Ventilation and/or Filtered Ventilation suitable for installed equipment	
14.	Water Protection	Weatherproof design with drip shield and water flow breakers to prevent water ingress	
15.	Ingress Protection	Minimum IP65 Protection	
16.	Earthing	Internal and External Earthing Studs with Earthing Provision	
17.	Surge Protection Accommodation	Provision for installation of Power and Ethernet Surge Protection Devices	
18.	Corrosion Protection	Outdoor Grade Powder Coating, Minimum 60–80 Micron Thickness	
19.	Ambient Operating Temperature	-40°C to +75°C	
20.	Relative Humidity	5% to 95% Non-Condensing	
21.	Mounting Arrangement	Pole Mounting and/or Wall Mounting Arrangement Complete with Hardware	
22.	Standards Compliance	IP Rating as per IEC 60529, Rack/Enclosure as per DIN 41494 or Equivalent	
23.	Make in India Compliance	As per latest DPIIT Make in India Guidelines	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
24.	Country of Origin Declaration	Mandatory	
25.	OEM Authorization	Manufacturer Authorization Form (MAF)	
26.	Warranty	Minimum 3 Years OEM Warranty	
27.	Support	AMC/CAMC Support During Contract Period	

Note :The enclosure shall be designed for 24x7 outdoor operation and provide protection against dust, rain, humidity, corrosion, vandalism and accidental damage. The cabinet shall accommodate networking, fiber, PoE switch, power supply and surge protection equipment with adequate cable management and future expansion provisions.

Recommended Optional Features

Feature	Requirement
Internal LED Light	Preferred
Thermostat Controlled Fan	Preferred
Heater for Condensation Protection	Optional
Door Open Sensor	Preferred
Tamper Alarm Contact	Preferred
Environmental Monitoring	Optional

50.8 Network Managed Gigabit Switch Minimum Specification (In Control Room)

The offered switch shall be a fully managed Gigabit Ethernet switch with Layer-2 switching features, centralized management capability, network security features and support for future network expansion.

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder along with datasheet and brochure	
2.	Switch Type	Managed Layer-2 Gigabit Ethernet Switch	
3.	Access Ports	Minimum 24 × 10/100/1000 Mbps RJ45 Ports	
4.	Uplink Ports	Minimum 4 × 1G SFP Uplink Ports	
5.	Console Port	Console Management Port	
6.	Switching Performance	Non-blocking wire-speed switching architecture	
7.	Management Features	Web GUI, CLI, SNMP Management	
8.	Layer-2 Features	VLAN, STP/RSTP, Link Aggregation, Port Mirroring	
9.	Network Services	QoS, IGMP Snooping, DHCP Snooping	
10.	Security Features	User Authentication, Password Protection, Port Security and HTTPS Management	
11.	Installation	Standard 19-inch Rack Mountable	
12.	Environmental Compliance	RoHS Compliant	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
13.	Certifications	CE, FCC and applicable Safety Certifications	
14.	OEM Authorization	Manufacturer Authorization Form (MAF)	
15.	Warranty	Minimum 3 Years OEM Warranty	
16.	Support	Support and Service During Contract Period	
17.	Rack Requirement	Switch shall be supplied and installed in a minimum 6U wall-mount rack complete with patch panel, cable manager, lock and key	
18.	Make in India Compliance	Compliance with latest DPIIT Make in India guidelines	
19.	Country of Origin Declaration	Mandatory	
20.	Local Content Declaration	Mandatory as per prevailing MII guidelines	

50.9 Duplex Monochrome Printer Minimum Specification (In Control Room)

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder along with datasheet and brochure	
2.	Printer Type	Monochrome Laser Printer	
3.	Print Technology	Laser Printing Technology	
4.	Print Speed	Minimum 30 Pages Per Minute (A4)	
5.	Print Resolution	Minimum 600 × 600 dpi	
6.	Duplex Printing	Automatic Duplex Printing (Standard)	
7.	Processor & Memory	OEM Standard	
8.	Connectivity	USB 2.0 or higher and 10/100/1000 Ethernet Port	
9.	Paper Input Capacity	Minimum 250 Sheets	
10.	Output Capacity	Minimum 100 Sheets	
11.	Supported Media	Plain Paper, Envelopes, Labels, Card Stock and Similar Standard Media	
12.	Monthly Duty Cycle	Minimum 10,000 Pages	
13.	Recommended Monthly Volume	500–5,000 Pages	
14.	Energy Efficiency	Energy Star Certified or Equivalent	
15.	Display	LCD/LED Status Display	
16.	Operating System Compatibility	Windows and Linux Compatible	
17.	Network Printing	Supported	
18.	Consumables	Standard Black Toner Cartridge	

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Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
19.	Product Documentation	Datasheet and Product Brochure Mandatory	
20.	OEM Authorization	Manufacturer Authorization Form (MAF)	
21.	Certifications	BIS, CE, FCC, RoHS or Equivalent	
22.	Make in India Compliance	Compliance with latest DPIIT Make in India Guidelines	
23.	Country of Origin Declaration	Mandatory	
24.	Warranty	Minimum 3 Years Comprehensive OEM Warranty	
25.	Support	AMC/CAMC Support During Contract Period	

50.10 Tower Ladder for Maintenance of Camera

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder along with datasheet and product brochure	
2.	Type	Mobile Telescopic Tower Ladder with Safety Platform	
3.	Material	High Strength Aluminium Alloy Construction	
4.	Standard Compliance	Manufactured as per applicable IS/EN Safety Standards for Portable Access Equipment	
5.	Ladder Height	Extended Working Height Minimum 6–8 m (Suitable for maintenance of CCTV, RFID and Traffic Equipment mounted on poles up to 6–8 m)	
6.	Closed Height	OEM Standard for transportation and storage	
7.	Load Capacity	Minimum 150 kg Safe Working Load	
8.	Side Rails	Heavy Duty Aluminium Side Rails	
9.	Rungs	Anti-Skid Corrugated Aluminium Rungs with maximum 300 mm spacing	
10.	Locking System	Automatic Positive Locking Mechanism at Each Extension Level	
11.	Platform	Anti-Skid Working Platform with Safety Guard Rails	
12.	Safety Cage	Safety Cage / Surround Guard Rails at Working Platform	
13.	Mobility	Heavy Duty Rubber Wheels/Castors with Locking Arrangement	
14.	Stabilizers	Retractable Outriggers/Stabilizers for Improved Stability	
15.	Handrails	Handrails on Both Sides for Safe Climbing	

16.	Weather Resistance	Rust Proof and Corrosion Resistant Construction	
17.	Safety Belt	Full Body Safety Harness with Double Lanyard Included	
18.	Tool Tray	Tool Tray or Tool Holder Arrangement	
19.	Transportation	Wheel-Based Trolley Arrangement for Easy Movement	
20.	Operating Environment	Suitable for Outdoor Maintenance Activities	
21.	Accessories	All standard accessories required for safe operation and maintenance work	
22.	Safety Markings	Safe Working Load and Safety Instructions Permanently Marked on Ladder	
23.	Warranty	Minimum 2 Years OEM Warranty	
24.	Support	AMC/CAMC Support During Contract Period	

50.11 Pole Specification

Sr. No.	Parameter	Minimum Technical Requirement	Compliance (Yes / No)
1.	Pole Type	Tubular tapered steel pole, round section, suitable for outdoor CCTV camera installation.	
2.	Pole Height	6.0 meters above finished ground level.	
3.	Material	Mild Steel (MS) conforming to IS 2713 / IS 1161 or equivalent approved standard.	
4.	Pole Construction	Single-piece or swaged tubular construction designed for CCTV applications.	
5.	Bottom Outside Diameter	Minimum 150 mm (± 5 mm).	
6.	Top Outside Diameter	Minimum 90 mm (± 5 mm).	
7.	Pole Thickness	Minimum 4.5 mm at bottom tapering to minimum 3.0 mm at top.	
8.	Pole Shape	Round tapered.	
9.	Surface Protection	Hot-dip galvanized after fabrication as per IS 2629/IS 4759.	
10.	Galvanization Thickness	Minimum average zinc coating thickness of 86 microns.	
11.	Finish	Uniform silver galvanized finish free from cracks, blisters, peeling and bare patches.	
12.	Wind Load Design	Pole shall be designed to withstand wind speed of minimum 150 kmph as per IS 875 (Part III).	

Sr. No.	Parameter	Minimum Technical Requirement	Compliance (Yes / No)
13.	Camera Mounting Arm	One camera mounting arm of minimum 1.0 meter projection with adjustable mounting arrangement.	
14.	Number of Arms	One (1) arm.	
15.	Cable Routing	Concealed internal cable routing facility from underground cable entry to camera mounting point.	
16.	Earthing Provision	Dedicated earthing terminal with suitable grounding arrangement.	
17.	Earth Resistance	Earth resistance shall be less than 5 Ohms or as per applicable standards.	
18.	Junction Box	Weatherproof IP66-rated junction box mounted approximately 3 meters above ground level.	
19.	Junction Box Accessories	Junction box shall include terminal blocks, cable glands, mounting plate and MCB provision.	
20.	Lightning Protection	Pole shall be equipped with lightning protection and connected to earthing system.	
21.	Structural Stability	Pole shall be designed to ensure vibration-free operation and stable video feed under normal and adverse weather conditions.	
22.	Breakaway/Base Safety	Breakaway arrangement or equivalent safety provision, wherever applicable, shall be provided.	
23.	Corrosion Protection	All exposed hardware, nuts, bolts and fasteners shall be hot-dip galvanized or stainless steel.	
24.	Foundation Type	Reinforced Cement Concrete (RCC) foundation.	
25.	Foundation Pit Size	Minimum 1000 mm × 1000 mm × 1200 mm deep, or as per approved structural design.	
26.	Concrete Grade	Minimum M25 grade RCC.	
27.	Anchor Fastening	Suitable foundation bolts/anchor bolts with template arrangement shall be provided.	
28.	Pole Protection	Protective bollards/crash barriers to be provided where risk of vehicle impact exists.	
29.	Camera Stand/Bracket	Suitable rust-resistant mounting bracket compatible with camera model offered.	
30.	Design Certification	Pole design and foundation shall be certified by a qualified structural engineer.	
31.	Manufacturing Drawings	Vendor shall submit GA drawing, pole drawing and foundation drawing for approval before manufacture.	
32.	Material Test Certificates	Manufacturer shall submit Mill Test Certificates (MTC) for steel used.	

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Sr. No.	Parameter	Minimum Technical Requirement	Compliance (Yes / No)
33.	Galvanization Test Reports	Galvanization thickness test reports shall be provided at the time of inspection.	
34.	Inspection	Purchaser reserves the right to inspect materials and workmanship before dispatch.	
35.	Warranty	Minimum 5 years warranty against corrosion, structural failure and manufacturing defects.	

50.12 Traffic Signal Pole / RFID Reader Pole

Sr. No.	Parameters	Minimum Specifications	Compliance (Yes / No)
1.	Pole Height	3 m above finished ground level	
2.	Material	MS tubular pole conforming to IS 2713 / IS 1161	
3.	Diameter	Minimum 100 mm ID	
4.	Thickness	Minimum 3.2 mm	
5.	Shape	Round	
6.	Surface Protection	Hot-dip galvanized after fabrication, minimum 86-micron coating	
7.	Wind Design	Minimum 150 km/h as per IS 875 Part III	
8.	Foundation	RCC M25 grade foundation with reinforcement and anchor bolts	
9.	Base Plate	Minimum 250 × 250 × 12 mm	
10.	Earthing	Dedicated earthing terminal, earth resistance ≤ 5 Ohms	
11.	Cable Routing	Internal concealed cable routing with waterproof entries	
12.	Junction Box	IP66 rated weatherproof junction box	
13.	Load Capacity	Suitable for RFID reader, antenna, enclosure and accessories	
14.	Warranty	5 years minimum	
15.	Documentation	MTC, galvanization report, structural calculation, GA drawing and foundation drawing	

50.13 Overhead Projector

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & model	Make & model to be specified with datasheet	
2.	Type	Multimedia Projector	
3.	Projection Technology	3LCD or Equivalent	
4.	Brightness	Minimum 3800 ANSI Lumens	

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5.	Native Resolution	Minimum WXGA (1280 × 800)	
6.	Aspect Ratio	Native 16:10	
7.	Contrast Ratio	Minimum 15,000:1	
8.	Light Source	Lamp with minimum 8,000 hours (Normal) and 15,000 hours (Eco) or equivalent	
9.	Screen Size	30–300 inches	
10.	Keystone Correction	Automatic/Manual Vertical and Horizontal	
11.	Built-in Speaker	Minimum 5 W	
12.	Interfaces	Minimum 2 × HDMI, USB, RJ45, VGA, Audio In/Out, RS-232 or equivalent	
13.	Wireless	Built-in or OEM-supported wireless connectivity	
14.	Network Projection	Supported	
15.	Accessories	Remote, Batteries, HDMI Cable, Power Cable, User Manual, Ceiling Mounting Accessories (if applicable), Projection Screen as per site requirement and compatible with the proposed projector	
16.	Power Supply	100–240 V AC, 50/60 Hz	
17.	Operating Temperature	5°C–40°C	
18.	Certifications	BIS/CE/FCC/RoHS or equivalent	
19.	Warranty	Minimum 2 Years Onsite; Lamp: 1 Year or 1,000 Hours (whichever is earlier), if lamp-based	
20.	Installation	Supply, Installation, Testing and Commissioning	

50.14 A3 Colour All-In-One Printer

Sl. No.	Parameter	Minimum Technical Specification	Compliance (Yes/No)
1.	Make & model	Make & model to be specified with datasheet	
2.	Type	A3 Colour Multifunction Laser Printer (Print/Copy/Scan)	
3.	Printing Technology	Digital Colour Laser Printing	
4.	Functions	Print, Copy and Scan	
5.	Print Speed	Minimum 20 ppm (A4) in Monochrome and Colour; Minimum 10 ppm (A3) in Monochrome and Colour	
6.	Print Resolution	Minimum 1200 × 1200 dpi	
7.	Duplex Printing	Automatic Duplex Printing (Standard)	
8.	Document Feeder	Automatic Duplex Document Feeder (RADF/DADF/SPDF or equivalent) with minimum 100-sheet capacity	
9.	Copy Resolution	Minimum 600 × 600 dpi	
10.	Multiple Copies	1–9999 Copies	
11.	Original Size	Up to A3	
12.	Scan Resolution	Minimum 600 × 600 dpi (Optical)	

Sl. No.	Parameter	Minimum Technical Specification	Compliance (Yes/No)
13.	Scan Functions	Scan to E-mail, Scan to SMB/Network Folder, Scan to USB, TWAIN/WIA Compatible	
14.	Supported Scan Formats	PDF, JPEG, TIFF, XPS or Equivalent	
15.	Page Description Languages	PCL 6 and PostScript 3 Compatible or Equivalent	
16.	Direct Printing	Direct Printing from USB Storage Device and Network Interface; Support for PDF, JPEG, TIFF, XPS or Equivalent	
17.	Standard Paper Sizes	A3, A4, A5, B4, B5, Letter, Legal and Other Standard Sizes	
18.	Paper Input Capacity	Minimum 500-sheet Standard Front Load Tray plus 100-sheet Multipurpose/Bypass Tray	
19.	Paper Output Capacity	Minimum 250 Sheets	
20.	Processor	Manufacturer's Standard Processor Suitable for the Offered Model	
21.	Memory	Minimum 4 GB RAM	
22.	Internal Storage	Standard HDD/SSD/Internal Storage, if provided by the OEM	
23.	Connectivity	USB 2.0 or Higher, 10/100/1000 Base-T Ethernet	
24.	Network Protocols	TCP/IP (IPv4 & IPv6)	
25.	Operating System Compatibility	Windows 10, Windows 11 and Latest Supported Windows Server Editions	
26.	Monthly Duty Cycle	Minimum 20,000 Pages	
27.	Display	Colour Touchscreen Display or Equivalent	
28.	Operating Environment	5°C to 45°C	
29.	Power Supply	220–240 V AC, 50/60 Hz	
30.	Maximum Power Consumption	Not Exceeding 1.5 kW	
31.	Energy Efficiency	Energy Star Certified or Equivalent	
32.	Security Features	User Authentication, Secure Print, Password Protection	
33.	Consumables	Starter Toner and Standard Accessories	
34.	Software	OEM Drivers and Utilities	
35.	Certifications	BIS (where applicable), CE/FCC/UL or Equivalent	
36.	Installation & Commissioning	Supply, Installation, Testing, Commissioning and User Training	
37.	Warranty	Minimum 3 Years Comprehensive On-site Warranty	

50.15 Smartphone Specification

Sr. No.	Parameter	Minimum Specification	Compliance (Yes/No)
1.	Smartphone Make & Model	Must specify along with datasheet and brochure	
2.	Technology	GSM	
3.	Processor Core with GPU	Minimum Octa core	
4.	Processor speed	Minimum 2.0 GHz	
5.	Operating system	Android / iOS or any other renowned O/s.	
6.	Chipset	Qualcomm or any other renowned Chipset	
7.	RAM Size	Minimum 8 GB	
8.	Internal Storage	Minimum 128 GB	
9.	Display Size	Minimum 5.7 inches	
10.	Display Technology	LED (AMOLED) Touch Screen	
11.	Display Resolution (Horizontal x Vertical) (Pixel)	FHD+ (Minimum 1080 x 2400 pixels)	
12.	Sunlight readability (Nits)	Minimum 800	
13.	Rear Camera Resolution (Mega Pixel)	Minimum 12 MP	
14.	Front Camera Resolution (Mega Pixels)	Minimum 8 MP	
15.	Sensors	Fingerprint (under display, optical), accelerometer, gyro, proximity, compass	
16.	Connectivity	4G VoLTE 5G (Optional)	
17.	Wi-fi Connectivity	802.11 b/g/n/ac	
18.	Bluetooth Connectivity	4.2 or higher	
19.	GPS	GPS With AGPS, GLONASS, GALILEO, BDS, QZSS	
20.	Battery Capacity (mAH)	Two hours Minimum	
21.	Smartphone Package	Should include Fast charger and charger cable.	
22.	Accessories: 1) Mobile cover 2) Tempered glass	Back Yes	
23.	Life of touch screen	Minimum 10 lakhs touches	
24.	Certification	BIS/CE/UL/FCC	
25.	Warranty	OEM Std. Warranty. After warranty support & service through AMC.	

Sr. No.	Parameter	Minimum Specification	Compliance (Yes/No)
26.	Safety	Smartphone to be protected against overheat, stop mobile application for safety purpose.	

50.16 Specifications for Network Storage Access

Sr. No.	Parameter	Specification (Minimum)	Compliance (Yes/No)
1	Make and Model	Must specify along with datasheet and brochure	
2	Form Factor	2U Rack mount	
3	CPU	Intel 2.1 GHz. quad-core processor or equivalent	
4	Hardware encryption engine	Yes (AES-NI)	
5	Memory	To be provided for optimum performance. Expandable to 64 GB	
6	Compatible drive type	3.5"/2.5" SATA/SSD.	
7	Storage Capacity	Three Months Video Analytics Data	
8	Hot swappable drive	Yes	
9	External port	2 x USB 3.0 or better	
10	LAN	At least 2 x 1GbE (RJ-45)	
11	Scalability	At least 2 x PCIe Gen3 slots	
12	Wake on LAN/WAN	Yes	
13	Scheduled power on/off	Yes	
14	Power Supply	Redundant power supply	
15	Networking protocol	Support for following protocols: CIFS, NFS, FTP, SMB, etc.	
16	File system	ext4, ext3, FAT, NTFS, HFS+, exFAT6	
17	Supported RAID type	RAID 0, RAID 1, RAID 5, RAID 6, RAID 10	
18	RAID Mode	The bidder needs to implement the RAID mode by taking into account minimum downtime, maximum reliability, and optimum performance	

Sr. No.	Parameter	Specification (Minimum)	Compliance (Yes/No)
19	Management	a) Provision to access the NAS using browser b) Auto Alerts on failure of physical components like CPU, Disk, Memory etc. c) Management software should be supplied with NAS if applicable	
20	Security	Network access protection with auto blocking (SSH, Telnet, HTTP(S), FTP, CIFS/SMB), Host access control (CIFS/SMB), Folder and volume-based encryption	
21	NAS Monitoring	To Monitor CPU usage, memory usage, disk space usage, disk activities etc.	
22	Supported client	Windows 7 and 10	
23	Supported browser	Chrome, Firefox, Internet Explorer 10 onwards, Safari 10 onwards; Safari (iOS 10 onwards), Chrome (Android 6.0 onwards)	
24	Software	All the necessary software to be provided	
25	OEM Authorization	Manufacturer's Authorization Form	
26	Certification	FCC, CE, RoHS compliant	
27	Warranty	OEM Warranty 2 years, after warranty support & service throughout the contract period.	

50.17 Specifications of On-Line UPS

Sr. No.	Parameter	Minimum Specification	Compliance (Yes/No)
1.	Make and Model	Must specify along with datasheet and brochure	
2.	Capacity	10 KVA Online UPS Tower Model with 120 minutes backup	
3.	Technology	IGBT based PWM type using microprocessor / DSP for control	
4.	Input Voltage	230 V AC, 160- 280 V) Single Phase, 3 wire	
5.	Input Frequency	50Hz (+/-5 Hz)	
6.	Output Voltage	220/230/240 VAC, Single Phase	

Sr. No.	Parameter	Minimum Specification	Compliance (Yes/No)
7.	Output Frequency	50 Hz (+/- 3Hz)	
8.	Output Power Factor	Minimum 0.8	
9.	Waveform Type	Pure Sine Wave	
10.	Protection	Enabled with visual / audible indication for following faults. - Battery over Voltage, Battery under Voltage, Output AC over voltage, Output overload / short circuit, - Surge protection	
11.	Indication	a) Main On, Load on battery, Battery low b) UPS overload and Bypass c) Load on main d) Battery boost e) Battery level graph, Load level graph, Audible Alarm on	
12.	Communication and Management.	a) Interface Port(s): DB-9 RS-232, RJ-45 10/100 Base-T, SNMP interface card with software. b) Control panel LED status display with load and battery bar-graphs and On Line: On Battery: Replace Battery : Overload and Bypass Indicators c) Alarm when on battery: distinctive low battery alarm: overload continuous tone alarm d) Emergency Power Off (EPO): Yes	
13.	Battery Type	Sealed Maintenance Free (SMF Battery) to be provided to suffice the backup.	
14.	Accessories	Battery rack, Interconnecting Links, Battery Cable & its accessories, MCB with appropriate rating to be installed at Input & Output etc.	
15.	Installation	Installation of UPS & Battery on Site.	
16.	Certification	RoHS Compliant.	
17.	Authorization letter	Authorization letter from OEM for support & service for the equipment	
18.	Warranty	Two Years OEM Std. Warranty, including battery. After warranty support & service through AMC.	
19.	Accessories	MCB In & Out	

50.18 Rodent Repellent at Control Room

Sr.	Parameter	Minimum Specifications	Compliance (Yes / No)
1.	The entry of Rodents and other unwanted pests shall be controlled using non-chemical, non- toxic devices. Ultrasonic pest repellents shall be provided in the control room to repel the pests without killing them. However periodic pest control using Chemical spray can be done once in 6 months as a contingency measure to effectively fight the pest menace.		
2.	Configuration	Master console with necessary transducer	
3.	Operating Frequency	Above 20 KHz (Variable)	
4.	Sound Output	50 dB to 110 dB (at 1 meter)	
5.	Power output	800 mW per transducer	
6.	Power consumption	15 W approximately	
7.	Power Supply	230 V AC 50 Hz	
8.	Mounting	Wall / Table Mounting	

50.19 Split Air Condition Specification

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes / No)
1.	Type	Split Air Conditioner (Wall Mounted)	
2.	Energy Efficiency	BEE 5-Star Rated	
3.	Capacity	1.5 TR (Ton) or higher as per room heat load calculation	
4.	Cooling Capacity	Minimum 5.0 kW (approx. 18,000 BTU/hr)	
5.	Compressor Type	Rotary / Twin Rotary / Inverter Compressor	
6.	Refrigerant	Environment-Friendly Refrigerant (R32 or latest approved refrigerant)	
7.	Air Flow Rate	Minimum 700 CFM	
8.	Moisture Removal	Minimum 1.5 L/hr	
9.	Indoor Unit Noise Level	Maximum 45 dB(A) at low speed	
10.	Control	Microprocessor Controlled with Wireless Remote	
11.	Display	LED Display on Indoor Unit	
12.	Power Supply	230 VAC $\pm 10\%$, 50 Hz, Single Phase	
13.	Operating Temperature	Suitable for ambient temperature up to 52°C	
14.	Copper Tubing	Copper refrigerant piping with insulation for suction and liquid lines	
15.	Drain Pipe	PVC drain piping complete with fittings	
16.	Electrical Cabling	Power and interconnecting cable between Indoor and Outdoor Units	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes / No)
17.	Mounting Arrangement	Suitable wall mounting plate for indoor unit and outdoor unit stand/frame	
18.	Installation	Complete installation, testing and commissioning	
19.	Earthing	Proper earthing in accordance with IS standards	
20.	Warranty	Minimum 1 Year Comprehensive Warranty	
21.	Compressor Warranty	Minimum 5 Years	

50.20 Voltage Stabilizer Specification

Sr. No.	Parameter	Requirement	Compliance (Yes/No)
1.	Type	Automatic Voltage Stabilizer (Servo Controlled / Static Type)	
2.	Rating	12 kVA, Single Phase	
3.	Input Voltage Range	140–280 VAC or better	
4.	Output Voltage	230 VAC $\pm 3\%$	
5.	Frequency	50 Hz $\pm 5\%$	
6.	Voltage Regulation Accuracy	$\pm 3\%$ or better	
7.	Efficiency	Minimum 95% at full load	
8.	High Voltage Protection	Automatic High Voltage Cut-off with restart facility	
9.	Low Voltage Protection	Automatic Low Voltage Protection/Cut-off	
10.	Time Delay Protection	Adjustable/Fixed Time Delay Protection for connected equipment	
11.	Overload Protection	Automatic Thermal Overload Protection	
12.	Short Circuit Protection	In-built Short Circuit Protection through suitable MCB/MCCB/Fuse arrangement	
13.	Thermal Protection	Suitable thermal sensing and automatic trip facility	
14.	Cooling System	Natural Air Cooled or Forced Air Cooled as per manufacturer design	
15.	Indications	Input Voltage, Output Voltage, Load and Fault Indications through Digital Display/LED Indications	
16.	Enclosure	Powder-coated CRCA steel enclosure suitable for indoor installation	
17.	Duty	Continuous Duty Operation	
18.	Earthing	Suitable earthing terminal shall be provided	
19.	Warranty	3 years	
20.	Standard Compliance	The Voltage Stabilizer shall conform to the latest edition of IS 9815 (Part 1) for single-phase automatic line voltage	

Sr. No.	Parameter	Requirement	Compliance (Yes/No)
		correctors/stabilizers or equivalent internationally accepted standard. Manufacturer shall submit valid test certificates/compliance documents.	

Note: The offered Voltage Stabilizer shall be from a reputed manufacturer with proven field performance. The equipment shall be supplied complete with all mounting accessories, internal protection devices, wiring, terminals, indication system, and necessary documentation.

50.21 Traffic Signal Light

Sr. No.	Parameter	Minimum Tender Specification	Compatible (Yes /No)
1.	Type	LED Based Vehicular Traffic Signal Module	
2.	Applicable Standards	IRC:93 (latest revision), Applicable MORTH Specifications, IEC/IS standards for electrical safety	
3.	Signal Size	200 mm diameter (8 inch)	
4.	Signal Aspects	Red, Amber and Green	
5.	Light Source	High Brightness, Energy Efficient LEDs	
6.	LED Life	Minimum 100,000 operating hours	
7.	Housing Material	UV Stabilized, Impact Resistant Polycarbonate, Flame Retardant	
8.	Lens Material	UV Stabilized Optical Grade Polycarbonate Lens	
9.	Lens Type	Fresnel / Optical Lens suitable for uniform light distribution	
10.	Colour Compliance	Red, Amber and Green colours as per international traffic signal chromaticity requirements	
11.	Door Gasket	EPDM/Silicone weatherproof gasket	
12.	Hood/Visor	UV Stabilized Polycarbonate or FRP Hood, anti-glare design	
13.	Protection Degree	Minimum IP65, preferably IP66	
14.	Operating Voltage	90–270 VAC, Single Phase, 50 Hz	
15.	Power Consumption	Maximum 15 Watts per aspect	
16.	Power Factor	≥ 0.90	
17.	Surge Protection	Minimum 4 kV internal surge protection	
18.	Operating Temperature	-10°C to +70°C	
19.	Relative Humidity	Up to 95% Non-Condensing	
20.	Visibility Distance	Minimum 100 m under normal daylight conditions	

Sr. No.	Parameter	Minimum Tender Specification	Compatible (Yes /No)
21.	Viewing Angle	Minimum ± 20 Degrees	
22.	LED Failure	Failure of individual LEDs shall not affect operation of the module	
23.	Mounting Arrangement	Compatible with standard traffic signal poles and mast arms	
24.	Cable Entry	Rear waterproof cable entry arrangement	
25.	EMI/EMC Compliance	Suitable for traffic control applications	
26.	Environmental Protection	Dustproof, Waterproof and Corrosion Resistant	
27.	Warranty	Minimum 5 Years	
28.	Marking	Manufacturer Name, Model No., Serial No., Date of Manufacture	

50.22 Traffic Signal Body

Sr. No.	Parameter	Minimum Specification	Compliance (Yes/No)
1.	Signal Size	200 mm Diameter	
2.	Housing Material	Injection Molded UV Stabilized, Flame Retardant, Impact Resistant Polycarbonate	
3.	Housing Colour	Black	
4.	Lens Material	Optical Grade UV Stabilized Polycarbonate	
5.	Lens Type	Fresnel / Clear Optical Lens	
6.	Weather Protection	Minimum IP65	
7.	Gasket	EPDM/Silicone Rubber Weatherproof Gasket	
8.	Hood/Visor Material	UV Stabilized Polycarbonate or FRP	
9.	Hood Thickness	Minimum 2 mm	
10.	Corrosion Resistance	Non-corrosive materials suitable for outdoor use	
11.	Operating Environment	Suitable for temperature -10°C to $+70^{\circ}\text{C}$ and humidity up to 95%	
12.	UV Resistance	Housing and lens shall not crack, fade or yellow due to UV exposure	
13.	Mechanical Strength	Suitable for wind loads and vibration encountered in roadside installations	

50.23 RFID Readers, Antenna Specification

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Reader Type	Integrated Long Range UHF RFID Reader	
2.	RFID Standard	EPC Global Class 1 Gen2 V2, ISO 18000-6C	
3.	Operating Frequency	865–867 MHz (WPC Approved)	
4.	Read Range	Minimum 8 m, Up to 10 m	
5.	Antenna	Integrated Circular Polarized Antenna	
6.	RF Power	0–30 dBm Software Adjustable	
7.	Read Rate	Minimum 200 Tags Per Second	
8.	Anti-Collision	Supported	
9.	IP Protection	IP66 or Better	
10.	Communication	10/100 Ethernet RJ45	
11.	API Support	REST API, .NET, Java SDK	
12.	Operating Temperature	-20°C to +60°C	
13.	Humidity	5–95% Non-Condensing	
14.	Power Supply	12–24 VDC	
15.	PoE	Preferred	
16.	Read Indicators	Green/Red LEDs, Buzzer	
17.	Security	Tag Filtering, Whitelist & Blacklist Support	
18.	Compliance	WPC, CE, FCC, RoHS, BIS	
19.	Tag Type	Passive UHF EPC Gen2 Vehicle RFID Tag	
20.	Mounting	Pole Mount Kit Included	
21.	Warranty	Minimum 5 Years	
22.	OEM Support	Authorization Letter Mandatory	
23.	Software Support	API, SDK & Documentation Included	
24.	Firmware Upgrade	Remote Upgrade Supported	

50.24 RFID Card

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Tag Type	Passive UHF RFID Mount-on-Metal Tag	
2.	RFID Standard	EPC Global Class 1 Gen2 V2, ISO 18000-6C	
3.	Frequency Range	865–867 MHz	
4.	Operating Mode	Passive	
5.	Read Range	Minimum 8 m and up to 10 m with compatible reader	
6.	Mounting	Built-in Magnet and/or Screw Mounting Provision	
7.	Surface Compatibility	Suitable for Metallic Surfaces	
8.	Chip Memory	EPC Memory ≥ 96 bits, User Memory ≥ 512 bits	
9.	TID Memory	Minimum 64 bits	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
10.	Write Endurance	Minimum 100,000 Write Cycles	
11.	Data Retention	Minimum 10 years	
12.	Enclosure Material	Rugged ABS / Industrial Engineering Plastic	
13.	Protection Class	IP67 or Better	
14.	Operating Temperature	-20°C to +70°C	
15.	Humidity	5–95% Non-Condensing	
16.	UV Resistance	Suitable for Outdoor Use	
17.	Environmental Compliance	RoHS Compliant	
18.	Product Documentation	Datasheet and Brochure Mandatory	
19.	Warranty	Minimum 5 Years	

50.25 Variable Message System (VMS)

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Display Type	LED Variable Message Display (VMS)	
2.	Character Height	Minimum 8 Inches	
3.	Display Colour	Red LED	
4.	Number of Lines	1 Line	
5.	Message Display	Static, Blinking and Horizontal Scrolling (Right to Left)	
6.	Visible Characters	Minimum 8 Characters at a Time	
7.	Visibility Distance	Minimum 30 Meters in Daylight	
8.	Viewing Angle	Minimum 110° Horizontal and 50° Vertical	
9.	Brightness Control	Automatic or Software Adjustable Day/Night Intensity Control	
10.	Communication Interface	Ethernet TCP/IP (RJ45)	
11.	Messaging Protocol	Support ASCII Text Messages via API/Socket Communication	
12.	Display Retention	Message shall remain displayed until next command is received	
13.	Cabinet Material	Powder-Coated MS Cabinet	
14.	Protection Class	Minimum IP65	
15.	Display Hood	Weatherproof Hood for Sunlight Visibility and Rain Protection	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
16.	Operating Voltage	230 VAC $\pm$ 10%, 50 Hz	
17.	Operating Temperature	-10°C to +60°C	
18.	Mounting Arrangement	Suitable Pole Mounting Arrangement with Fasteners	
19.	Power Connection	230 VAC Power Input	
20.	Network Connection	Ethernet RJ45 Port	
21.	Maintenance	Front Access or Easy Maintenance Design	
22.	Warranty	Minimum 5 Years	

50.26 Specification for Outdoor Enclosure

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1	Application	Outdoor Cabinet for accommodating network, communication, electrical and control equipment	
2	Cabinet Dimensions	Minimum 600 mm (W) $\times$ 600 mm (H) $\times$ 350 mm (D) or suitable to accommodate all supplied equipment	
3	Construction	Welded CRCA Steel / Galvanized Steel Construction	
4	Sheet Thickness	Minimum 1.6 mm for body and 2.0 mm for mounting plate	
5	Doors	Front lockable hinged door with vandal-resistant locking arrangement	
6	Mounting Plate	Zinc plated or powder-coated mounting plate	
7	Protection Class	Minimum IP65	
8	Surface Finish	Powder-coated outdoor finish, minimum 60–80 micron coating thickness	
9	Cable Entry	Bottom gland plate with IP-rated cable glands	
10	Cable Management	Internal cable ducts, ties and cable routing arrangement	
11	Corrosion Protection	Suitable for outdoor use and resistant to corrosion, UV exposure and rain	
12	Door Retention	Door stay arrangement to prevent accidental closure	
13	Ventilation	Natural or filtered ventilation suitable for installed equipment	
14	Locking System	Three-point or equivalent locking mechanism	
15	Earthing	Internal earthing stud and earth continuity provision	
16	Water Protection	Drip shield/water flow breaker arrangement to prevent water ingress	

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Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
17	Mounting Arrangement	Pole mounting or wall mounting arrangement as applicable	
18	Operating Environment	Suitable for ambient temperature -10°C to +60°C and humidity up to 95% non-condensing	
19	Standards	IEC 60529 (IP Rating), DIN 41494 or equivalent industrial enclosure standards	
20	Accessories	Gland plate, mounting hardware, earthing kit, cable management accessories	
21	Warranty	Minimum 5 Years	

50.27 Standard branded renowned make LED TV with mounting kit, stand.

Sr. No	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make	Reputed OEM such as Samsung / LG / Sony / Panasonic / TCL / equivalent	
2.	Model	To be specified by bidder	
3.	Display Size	Minimum 55-inch LED Display	
4.	Resolution	4K Ultra HD (3840 × 2160)	
5.	Display Technology	LED Display with HDR Support	
6.	Refresh Rate	Minimum 60 Hz	
7.	Audio Output	Built-in Speakers, Minimum 20 W RMS	
8.	HDMI Ports	Minimum 3 HDMI Ports	
9.	USB Ports	Minimum 1 USB Port	
10.	Network Interface	RJ45 Ethernet and Wi-Fi Connectivity	
11.	Operating Voltage	100-240 VAC, 50/60 Hz	
12.	Viewing Angle	Minimum 178°	
13.	Mounting Arrangement	Wall Mounting Kit or Ceiling Mounting Kit as required	
14.	Accessories	Remote Control with Batteries, Power Cord, User Manual, Mounting Hardware	
15.	Certification	BIS Certified	
16.	OEM Authorization	Manufacturer's Authorization Certificate (MAF) for Supply and Support	
17.	Warranty	Minimum 3 Years OEM Comprehensive Warranty	
18.	Support	Support and maintenance during contract period	

50.28 Rack Server - 42 U

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Type	19-inch Floor Standing Server / Network Rack	
2.	Rack Height	42U	
3.	Dimensions	Minimum 800 mm (W) × 1000 mm (D) × 42U (H)	
4.	Construction	Heavy-duty CRCA Steel Construction	
5.	Standard Compliance	Compatible with 19-inch Rack Mount Equipment as per DIN 41494 / IEC 60297 or equivalent	
6.	Front Door	Lockable Toughened Glass Front Door	
7.	Rear Door	Lockable Perforated / Mesh Rear Door	
8.	Side Panels	Removable Lockable Side Panels	
9.	Mounting Rails	Adjustable Front and Rear Mounting Rails	
10.	Cooling	Rack-mounted Fan Tray with Minimum 4 Cooling Fans	
11.	Power Distribution	Vertical PDU with Minimum 12 Universal Sockets and MCB Protection	
12.	Cable Management	Vertical and Horizontal Cable Managers	
13.	Cable Entry	Top and Bottom Cable Entry Provision	
14.	Mobility	Heavy-Duty Castor Wheels with Locking Arrangement	
15.	Load Capacity	Minimum 800 kg Static Load Capacity	
16.	Earthing	Complete Earthing Kit with Earth Stud	
17.	Surface Finish	Powder-Coated Finish, RAL 7035 or Black	
18.	Accessories	Shelves, Cage Nuts, Mounting Hardware and Cable Management Accessories	
19.	Ventilation	Proper Airflow Provision for Network and Server Equipment	
20.	Installation	Complete Supply, Installation and Commissioning	
21.	Warranty	Minimum 5 Years	

Note: The rack shall be a 42U, 19-inch floor-standing server/network rack suitable for installation of servers, network switches, routers, patch panels, storage devices, UPS, and associated accessories. The rack shall be provided with lockable front and rear doors, removable side panels, cable management arrangements, cooling fan tray, PDU, earthing kit, castor wheels with brakes, and all accessories necessary for complete installation.

50.29 Outdoor Access Point

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder with datasheet and brochure	
2.	Wi-Fi Standard	IEEE 802.11ax (Wi-Fi 6), backward compatible with 802.11 a/b/g/n/ac	
3.	Frequency Bands	Dual Band 2.4 GHz and 5 GHz	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
4.	Wireless Performance	Concurrent dual-band operation	
5.	Antenna	Internal or External MIMO Omni-Directional Antennas	
6.	Ethernet Port	Minimum 2 × 10/100/1000 Mbps RJ45 Ports	
7.	Power Supply	IEEE 802.3at PoE (PoE Injector/Adapter to be supplied if required)	
8.	Security	WPA2 and WPA3 Support	
9.	Management	Web GUI and Remote Management Support	
10.	Protection Rating	Minimum IP67 Outdoor Rated	
11.	Surge Protection	Built-in Surge and ESD Protection	
12.	Operating Temperature	Suitable for Outdoor Operation (-10°C to +60°C)	
13.	Mounting	Pole and Wall Mounting Kit Included	
14.	Certifications	WPC, CE, FCC, RoHS or Equivalent	
15.	OEM Authorization	Manufacturer Authorization Form (MAF) Required	
16.	Warranty	Minimum 3 Years OEM Warranty	
17.	Support	Support and Maintenance During Contract Period	

Note: The Outdoor Access Point shall be a ruggedized Wi-Fi 6 (IEEE 802.11ax) outdoor device supporting simultaneous 2.4 GHz and 5 GHz operation. The unit shall be suitable for outdoor deployment with minimum IP67 protection, Gigabit Ethernet connectivity, PoE power supply, WPA2/WPA3 security, surge protection, and complete mounting accessories for pole/wall installation.

50.30 Features for Endpoint Security (Antivirus)

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Deployment Type	On-Premises or Cloud Managed	
2.	License Type	Enterprise Endpoint Security Solution	
3.	Supported Devices	Desktops, Laptops and Servers	
4.	Malware Protection	Protection against Viruses, Worms, Trojans, Spyware, Adware, Rootkits and Other Malware	
5.	Ransomware Protection	Advanced Ransomware Detection and Protection	
6.	Real-Time Protection	Real-Time Scanning of Files, Folders, USB Devices and Network Shares	
7.	Threat Detection	Signature-Based and Behavior-Based Threat Detection	
8.	Web Protection	Protection against Malicious Websites and Downloads	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
9.	Firewall	Host-Based Firewall Management	
10.	Device Control	USB and Peripheral Device Control	
11.	Application Control	Application Whitelisting / Blacklisting	
12.	Data Protection	Data Loss Prevention (DLP) Capability	
13.	Centralized Management	Centralized Web-Based Management Console	
14.	Policy Management	Centralized Security Policy Configuration and Deployment	
15.	Updates	Automatic Signature and Engine Updates	
16.	Reporting	Security Dashboard, Alerts and Reports	
17.	Remote Management	Remote Monitoring and Administration	
18.	Operating Systems	Support for Latest Windows Server and Windows Desktop OS Versions	
19.	Technical Support	24x7 OEM Technical Support	
20.	Warranty / Subscription	Throughout Contract Period	
21.	OEM Authorization	Manufacturer Authorization Certificate (MAF)	
22.	Documentation	Product Datasheet and Brochure	

Note: The proposed Endpoint Security Solution shall be an enterprise-grade centrally managed security platform for desktops, laptops, and servers. The solution shall provide real-time malware protection, ransomware protection, web security, device control, application control, host firewall management, centralized policy management, reporting, and automatic updates. The solution may be deployed on-premises or cloud-managed and shall include licenses, updates, technical support, and maintenance for the entire contract period.

50.31 Specification for Firewall / UTM or as per CERT (Computer Emergency Response Team)

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
1.	Make & Model	To be specified by bidder with datasheet	
2.	Deployment Type	Dedicated Hardware Firewall / UTM Appliance	
3.	User Capacity	Suitable for minimum 20 concurrent users	
4.	Firewall Features	Stateful Inspection Firewall	
5.	VPN	IPSec and SSL VPN Support	
6.	Antivirus	Gateway Antivirus Protection	
7.	Anti-Phishing	Supported	
8.	Anti-Spam	Supported	

Sr. No.	Parameter	Minimum Requirement	Compliance (Yes/No)
9.	Anti-Spyware / Anti-Malware	Supported	
10.	Intrusion Prevention System (IPS)	Supported	
11.	Web Filtering	URL and Content Filtering	
12.	Application Control	Application Identification and Control	
13.	Bandwidth Management	User/Application-Based Bandwidth Control	
14.	Security Policies	Role-Based Access Policies	
15.	Logging & Reporting	On-Box Logging and Reporting with Dashboard	
16.	Management	Web-Based Centralized Management Interface	
17.	Network Interfaces	Minimum 4 × Gigabit Ethernet Ports	
18.	High Availability	Optional	
19.	Security Updates	Automatic Signature and Firmware Updates	
20.	Certifications	OEM Product should comply with industry security standards	
21.	OEM Authorization	Manufacturer Authorization Form (MAF) Required	
22.	Subscription	Security subscriptions (AV, IPS, Web Filtering, Application Control, Anti-Spam) valid for entire contract period	
23.	Support	24×7 OEM Technical Support	
24.	Warranty	OEM Warranty and Support during contract period	

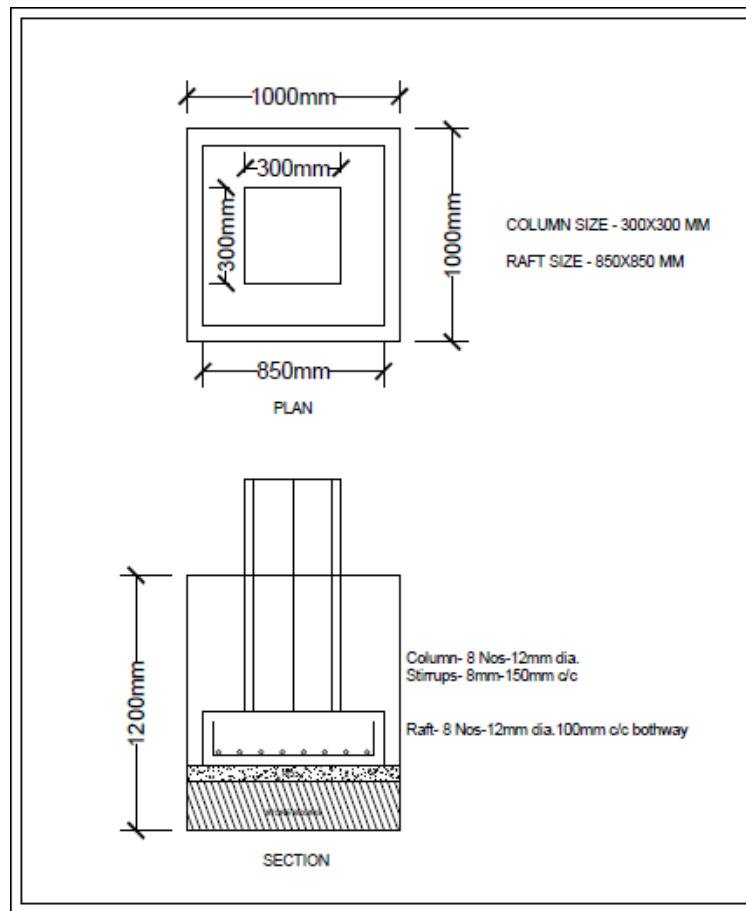
Note : The offered Firewall/UTM appliance shall provide integrated security services including Stateful Firewall, IPS, Gateway Antivirus, Anti-Phishing, Anti-Spam, Application Control, URL Filtering, VPN, Logging and Reporting. The appliance shall be supplied with all required licenses, updates, subscriptions and OEM support for the entire contract period. The solution shall be suitable for securing a network with a minimum of 20 concurrent users.

50.32 Wi-Fi Access Point

Sr. No.	Feature / Functionality	Compliance (Yes/No)
1.	Make & model to be specified with datasheet	
2.	Indoor Enterprise Grade Dual-Radio Wi-Fi 6 (IEEE 802.11ax) Access Point supporting simultaneous 2.4 GHz and 5 GHz operation with minimum AX1800 class aggregate throughput (approximately 1775 Mbps) or higher.	

Sr. No.	Feature / Functionality	Compliance (Yes/No)
3.	Wireless Standards: IEEE 802.11ax/ac/n/g/b/a	
4.	AP should support Security features WPA-Personal/Enterprise, WPA2-Personal/Enterprise, WPA3-Personal/Enterprise and support OFDMA for enhanced multi-user efficiency	
5.	The Access point should support 2x2 MU-MIMO with Wi-Fi 6 standards	
6.	The Access Point should be compliant with IEEE 802.3af and/or IEEE 802.3at.	
7.	The Access point should support Band Steering makes sure connected devices get the best available frequency band	
8.	Integrated Internal Antennas optimized for indoor coverage supporting 1024-QAM.	
9.	Minimum one 10/100/1000 Mbps RJ45 Ethernet port	
10.	Should be Ceiling/Wall Mount with mounting Kits included	
11.	Web based management through http/https	
12.	AP should be FCC/CE/RoHS/BIS/WPC (ETA) Compliance	
13.	Minimum 3 Years Comprehensive OEM Warranty	

50.33 Pole Foundation Drawing



50.34 Computer Networking details

- Fiber optic cable & power cable will be used to connect Control Room & Junction Box.
 - Outdoor junction box to be installed near Tracks which will connect Control Room.
 - The outdoor junction box and all devices will draw power from Control Room UPS installed in Control Room.
- Bidder to supply necessary components required for above mentioned installation.
- Bidder shall use branded make of Networking components without compromising the networking performance (packet loss, Jitter free).]

51. MIS Reports

Following are the required reports:

- Applicant Pass / Fail Report
 - Applicant ID / Name
 - Gender Wise
 - Parameter Wise Maximum failure in % given for the period (Date Range From & To)
- Fee Collection report
- Graphical Reports
- Approx. 15 to 20 reports customized viewable and printable and export to PDF format
- Facility to download Video Analytics & Test Result for specific date & time range.
(Maximum period selection one month at a time within the data retention period)

Note: All Reports should have date range for (Daily / Monthly / Yearly)

52. Test Result

Transport Dept. Logo

Regional Transport Office

(Address.....)

LMV Driving Skill Report

Applicant No.: 012345678

Applicant Name: XXXXXXXX

Test Date:XXXXXX

Lic No.: 012345678

Application No.: 012345678

Vehicle No.:012345678



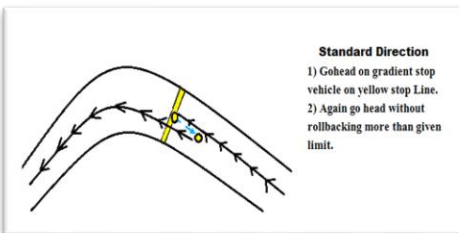
At Registration Desk



On Test Track

Face Detection Auto or Manual: ____

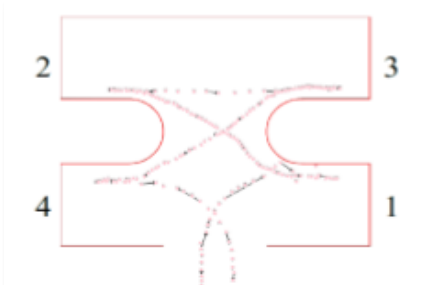
A Gradient Track (Move ahead on Gradient Track, stop vehicle on yellow line and then again go ahead straight preferably without reversing)					
Sr. No.	Test Parameters	Max. Marks	Ref. Interval	Result	Marks Obtain
1	Test Attempted	-	Y or N	Yes	-
2	TSV	10	Yes or No	No	10
3	Std. Direction	15	*Described	Yes	15
4	Test Time	05	60 Sec	50	05
5	Rollback	10	Upto 12 Inches	In Limit	10
6	Out of Track	10	Yes – Zero Marks	No	10
7	Total	50	Min 45 marks to PASS		50



Start Time: HH:MM:SS

End Time: HH:MM:SS

B H-Track (Driving Vehicle in Forward & Reverse Direction without moving outside the test track)					
Sr. No.	Test Parameters	Max. Marks	Ref. Interval	Result	Marks Obtain
1	Test Attempted	-	Yes or No	Yes	-
2	TSV	10	Yes or No	No	10
3	Std. Direction	15	*Described	Yes	15
4	Test Time	15	180 sec.	130 Sec	15



Tender Document for Automation of Driving Test Track using Video Analytics and Smartphone

5	Out of Track	10	Yes – Zero Marks	No	10	Start Time: HH:MM:SS End Time: HH:MM:SS
	Total	50	50 marks to PASS		50	

C	Parallel Parking (*Move Vehicle in forward direction and then reverse vehicle and park vehicle within the box in parallel)					
Sr. No .	Test Parameters	Max. Marks	Ref. Interval	Result	Marks Obtain	
1	Test Attempted	-	Yes or No	Yes	-	
2	TSV	10	Yes or No	No	10	
3	Std. Dir.	10	*Describe d	Yes	10	
4	Test Time	10	120 sec.	110 Sec	10	
5	Kerb Hit	20	Allowed: 2	0	20	
6	Total	50	50 marks to PASS		50	Start Time: HH:MM:SS End Time: HH:MM:SS

Summary of Result

Sr. No.	Test Track	Max Marks	Score	Violation Remarks
A	Gradient Track	50	50	Nil
B	H-Track	50	50	Nil
C	Parallel Parking	50	50	Nil
	Total	150	150	

Result: Congratulations, you have passed the skill driving test. (Total duration of Test XX Min XX seconds)

Legends:

Forward	Revers	Stoppage	Kerb Hit	NA
				Not Applicable

NOTE: - Applicant fail in any of the test will be failed in Driving test. If no seat belt is fastened applicant will be failed. **TSV** – Traffic Signal Violation, **Std. Dir.** – Standard Direction.

Signature of Licensing Authority

Note to Bidder: Above result format is for illustration; the marking scheme, pass/fail marking, track order is subject to change.

33.1 Two-Wheeler / Motorcycle Test Result

Transport Dept. Logo	Regional Transport Office (Address.....) Motorcycle Driving Skill Report
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Applicant No.: 012345678

Applicant Name: XXXXXXXX

Test Date:XXXXXX

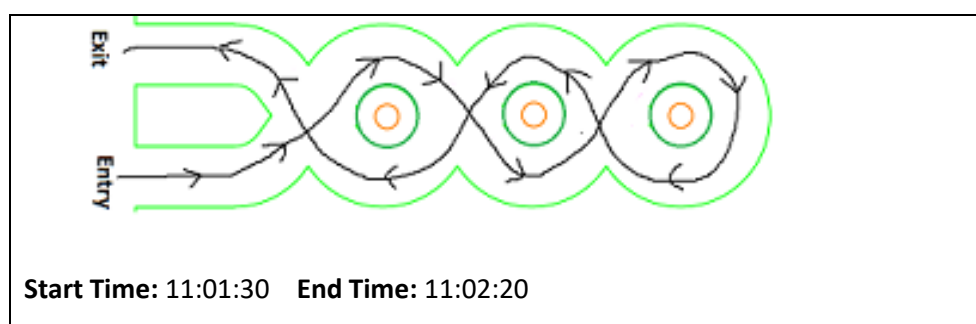
Lic No.: 012345678

Application No.: 012345678

Vehicle No.:012345678

Face Detection Auto or Manual: Auto

Serpentine Track (Move Vehicle in Serpentine Track with proper balancing, without stopping, falling and moving out of the track.)					
Sr. No.	Test Parameters	Max. Marks	Ref. Interval	Applicant Result	Applicant Score
1	Test Attempted	-	Yes or No	Yes	-
2	Traffic Signal Violation	10	Yes or No	No	10
3	Std. Direction	10	*Described	Yes	10
4	Stop Detected	10	Allowed: 2	1	10
5	Test Duration	10	60 Sec	50 Sec.	10
6	Avg. Speed	-	>= 4 kmph	08 kmph	-
7	Kerb Hit	10	Allowed: 2	1	10
8	*Inproper Test	-	Yes or No	No	-
9	Total	50	50 Marks to Qualify		50



Result: Congratulations, you have passed the skill driving test. (Total duration 60 Seconds)

Legends:

Forward → Reverse ← - - - Stoppage ● Kerb Hit X NA Not Applicable

Note: If applicant not wearing helmet will be failed. Inproper test i.e. System to detect only motorcycle, if not then applicant will be failed.

53. SERVICE LEVELS AND ESCALATIONS

CIRT expects that the Bidder shall be bound by the service levels described in this document for software and hardware performance.

- The Bidder is expected to take care of the systems by covering them under the warranty, AMC and ensure that the systems provide optimum utilization and return on investment.
- The total breakdown period would be calculated by CIRT/IDTR every month. A breakdown period of 16 hours per month would be allowed without any penalty.
- An indicative list of issues covered under various levels beyond the permissible 16 hours per month is provided below.

Sr. No.	Area	Description	Mean Time to Restore	Fine Per Day (INR)
1	Hardware	• Cameras • NAS Device • Networking Components • Online UPS • Any other critical computer hardware installed by the bidder which may bring downtime on failure	Penalty applicable if system down for more than 16 hours in a month.	Rs. 2000
2	Software	• IDTS Application • IDTS Database	Penalty applicable if system down for more than 16 hours in a month.	Rs. 2000
3	Resident Engineer	On site resident engineer to troubleshoot hardware & software issues and to coordinate day to day operations.	If no Engineer present on site for more than 2 days in a month.	Rs. 2000

54. PERFORMANCE BANK GUARANTEE

54.1 The bidder shall furnish performance bank guarantee to CIRT @ 5% of the work order value in the form of Bank Guarantee in the prescribed format from any Nationalized Bank within 7 working days of receipt of the Work Order.

54.2 After receipt of PBG the EMD of successful and other bidders will be returned.

54.3 The Performance Bank Guarantee will be for the period of five years from the date of acceptance of work order and submission of PBG. The PBG format enclosed in the Annexure.

54.4 The Performance Bank Guarantee may need to renew once the system is handed over to the dept. without any charges or change in the value.

54.5 The PBG of the Successful applicant will be invoked and forfeited if the successful applicant fails to comply with the conditions of contract i.e.

- Fails to perform contractual obligations.
- Abandons the work.
- Commits a material breach of contract.

- Fails to rectify defects or complete the balance work despite notice.

54.6 No interest will be paid for EMD / Bank Guarantee.

54.7 CIRT shall be entitled to forfeit the amount of the PBG in whole or in part in the event of any default, failure or neglect on the part of the SI in the fulfillment or performance and obligation in all respects of the Agreement as per the provision set forth in the Agreement.

54.8 The PBG shall remain in full force and effect during the Contract period and 180 days thereof that would be taken for satisfactory performance and fulfillment in all respects of the contract. On the performance and completion of the contract in all respects, the PBG will be returned to the Operator(s) without any interest.

Annexure 1

**FORMAT FOR CERTIFICATION FOR MINIMUM ANNUAL TURNOVER (MAT)
FROM CHARTERED ACCOUNTANT**

{On Statutory Auditor's letterhead}

[In case of Consortium, all members should provide MAT Certificate]

This is to certify that the Minimum Annual Turnover furnished by M/s. _____ for the below financial years is as detailed below and as furnished in the enclosed statement of accounts, is verified by us and found correct.

Financial Year	Turnover (INR in lacs)
2020-21	
2021-22	
2022-23	
2023-24	
2024-25	

CHARTERED ACCOUNTANT:

(Signature with Seal)

My Membership No:

Address:

NO BLACKLISTING CERTIFICATE

{Notarization is required}

Format of self-certificate stating that the Entity/Promoter/s / Director/s of Entity are not blacklisted (On a Stamp Paper of relevant value)

[All Consortium Member should provide in case Bidder is a Consortium]

No Blacklisting Certificate

M/s. (Name of the Bidder), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s or our firm as well as our Consortium member) as defined in RFP are not barred by Government of Tripura (GoM) / any other entity of GoM or blacklisted by any state government or central government / department / Local Government agency in India or similar agencies from foreign countries from participating in Project/s, either individually or as member of a Consortium for last one year from (Bid Due Date)

We further confirm that we are aware that our Bid for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of this RFP at any stage of the Bidding Process or thereafter during the agreement period. Dated this Day of, (Year).

Name of the Bidder

Signature of the Authorized person

Name of the Authorized Person

BUSINESS READINESS PLAN

- The bidder is required to submit business readiness plan in Hard Copy & Soft Copy in Technical bid document.
- The presentation will include.
 - Understanding of Scope of Work
 - Track Layout with Camera Location
 - Approach & Methodology
 - Hardware Architecture
 - Software Architecture
 - Project Roll-out Plan
 - Project Execution Plan
 - Milestone
 - Operation and Maintenance
 - Quality Control and Management Plan
 - System Uptime Plan
 - Any other strategic plan

OFFICE SETUP & TECHNICAL STAFF

- **Brief on Office Setup**

- **Project Team Details**

Sr. No.	Team Details	Details of Qualification & Experience
1	Project Manager	
2	Project Coordinator	
3	Project Team Members	
4	Software Testing Team Members	
5	Civil Team if Outsource agency details	
6	On site deputed person name and contact details	

Kindly enclosed biodata and experience details

Name of the Bidder

Signature of the Authorized person

Name of the Authorized Person

Relevant Video Analytics Project Experience
WORK ORDER / PURCHASE ORDER COPY

Ser No	Work Order Copy – I	Work Order Copy – II	Work Order Copy – III
Work Order Ref. No.			
Department Name			
Contact Person			
Designation			
Email ID			
Contact number			
Project Value			
Project Award Date			
Project Completion Date			
Brief about the project • Enclosed Work order copy, Test Result.			

Kindly enclosed completion certificate / test result output format.

Name of the Bidder

Signature of the Authorized person

Name of the Authorized Person

Annexure 6

(To be executed only after award of contract)

PROFORMA FOR PERFORMANCE BANK GUARANTEE

(To be executed on non-judicial stamped paper of an appropriate value)

WHEREAS, DIRECTOR, CIRT Pune (hereinafter referred to as "The Owner", which expression shall unless repugnant to the context includes their legal representatives, successors and assigns) has executed a contract on [Please insert date of execution of Contract] ("Contract") with [insert name of the Successful Applicant] (hereinafter referred to as the "Contractor" which expression shall unless repugnant to the context include its legal representatives, successors and permitted assigns) for the performance, execution and implantation of the Works ("Works" shall have the meaning ascribed to it in the Contract) based on the terms & conditions set out in the Tender Documents number [insert reference number of the Tender Documents] dated [insert date of issue of Tender Documents] and various other documents forming part thereof.

AND WHEREAS, one of the conditions of the Contract is that the Contractors shall furnish to the Owner a Bank Guarantee from 3 scheduled bank in India having a branch at Pune for an amount equal to 5% (Five percent) of the total Contract Sum (the amount guaranteed under this bank guarantee shall hereinafter be referred to as the "Guaranteed Amount") against due and faithful performance of the Contract from the post-completion stage of the Work under the Contract, Including bank guarantee obligation and other obligation of the Contractor for the services provided and be valid from the date hereof up to the expiry of the assurance Period including any extension thereof.

AND WHEREAS the Contractor has approached [insert the name of the scheduled bank] (here in after referred to as the -Bank") having its registered office at [insert the address] and at the request of the request of the Contractor and in consideration of the promises made by the Contractor, the Bank has agreed to give such guarantee as hereunder;

- 1.0 The successful bidder shall furnish a Performance Bank Guarantee (PBG) equivalent to Five Percent (5%) of the Contract Value from a Nationalized Bank/Scheduled Commercial Bank in favour of the Owner within 15 days from the date of issue of work order.
- 2.0 The Performance Bank Guarantee shall remain valid up to the completion of the work, including the Defect Liability/Warranty Period and any extensions thereof.
- 3.0 The Performance Bank Guarantee shall be unconditional, irrevocable, and payable on first written demand by the Owner without demur, protest, objection, or reference to the Contractor.
- 4.0 The Owner shall be entitled to invoke and encash the Performance Bank Guarantee, either wholly or partly, in any of the following events: Failure of the Contractor to perform or fulfill any contractual obligation. Failure to achieve contractual milestones or complete the work within the stipulated period.
 - 4.1 Levy of Liquidated Damages due to delay attributable to the Contractor.
 - 4.2 Abandonment, suspension, or discontinuance of the work without the written approval of the Owner.
 - 4.3 Breach of any terms and conditions of the Contract.

- 4.4 Failure to rectify defects or deficiencies within the specified time.
- 4.5 Termination of the Contract due to default of the Contractor.
- 4.6 Recovery of any amount becoming due and payable to the Owner under the Contract, including Liquidated Damages, risk-and-cost expenses, damages, penalties, excess expenditure incurred for completion of the balance work through another agency, and any other contractual dues.
- 5.0 The decision of the Owner regarding the occurrence of any breach, default, delay, or liability under the Contract shall be final and binding upon the Contractor and the Bank.
- 6.0 Notwithstanding anything contained herein, the total liability of the Bank under the Performance Bank Guarantee shall be limited to five percent (5%) of the Contract Value.
- 7.0 The invocation or encashment of the Performance Bank Guarantee shall be without prejudice to any other rights or remedies available to the Owner under the Contract or under applicable law.

NOTWITHSTANDING anything stated above, the liability of the Bank under this bank guarantee is restricted to the Guarantee Amount and this bank guarantee shall expire on the expiry of the assurance Period under the Contract. Unless a Demand under this bank guarantee is filed against the Bank within six (6) months, from the date of expiry of this bank guarantee, all the rights of the Owner under this bank guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities hereunder. However, if the contractor's obligations against which this bank guarantee is given, are not completed or fully performed by the Contractor within the period prescribed under the Contract, the Bank hereby agrees to further extend the bank guarantee for further periods of six months each till the Contractor fulfills its obligations under the Contract.

We have the power to issue this bank guarantee in your favour under Memorandum and Article of Association and the Undersigned has full power to do so under the power of Attorney dated [date of power of attorney to be inserted] granted to him by the Bank.

Date:

Bank:

Corporate Seal of the Bank

By its constituted Attorney Signature of a person duly authorized to sign on behalf of the Bank.

Pre-Bid Query Format

Sr. No.	Section No.	Page No.	Content of RFP requiring Clarification(s)	Point of Clarification

Annexure 8

Bill of Quantity – Automation of Driving Test

Refer Excel File (financial Bid)

Annexure 9

Track Layout



LMV Track -Gradient, H-Track & Parallel Parking and one serpentine track for motorcycle.