# Request for Proposal for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur

**RFP Ref. No. JSCL/2018/551/ADM/130**

**Date-13 June 2018**

JABALPUR
SMART CITY LIMITED

The information contained in this Request for Proposal ("RFP") Document, whether communicated in verbal or in documentary or in any other form, by or on behalf of the Jabalpur Smart City Limited (the "JSCL") for Public Bus Services in Jabalpur, or any of their employees or advisors, on the terms and conditions set out in this RFP Document and such other terms and conditions as the JSCL may prescribe in this behalf, has been prepared and issued by Jabalpur Smart City Limited ("JSCL") solely to assist prospective Bidders in making their decision of whether or not to submit a bid.

This RFP Document is not an agreement and is not an offer or invitation by JSCL to any party. As mentioned above, the purpose of this RFP Document is to provide the Bidder with information to assist in the formulation of their proposals. This RFP Document does not purport to contain all the information each Bidder may require. This RFP Document may not be appropriate for all persons, and it is not possible for JSCL, their employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP Document. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP Document and where necessary obtain independent advice from appropriate sources.

JSCL, or their employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment for any loss, damage, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP Document or otherwise including the accuracy, reliability or completeness of the RFP Document or any assessment, assumption, statement or information contained therein or deemed to form part of the RFP Document or arising in any way at this stage of the Bidding Process.

The designs, drawings, technical data and any other information if provided in this RFP Document are only indicative and do not imply and shall not be deemed to imply any current or future representation, promise or warranty, express or implied, on the part of JSCL or their employees, as to the accuracy, reliability or completeness of the information contained herein or in any document or information, whether written or oral, made available to a Bidder, whether or not the aforesaid parties know or should have known of any errors or omissions or were responsible for its inclusion in or omission from this RFP Document.

This RFP Document is provided for information purposes only and upon the express understanding that such parties will use it only for the purpose set forth above.

The information and statements made in this RFP Document have been made in good faith. Interested parties should rely on their own judgments in participating in the said Project. Any liability of any nature whatsoever, whether resulting from negligence or otherwise howsoever caused, arising from reliance of any Bidder upon the statements and information contained in this RFP Document is accordingly expressly disclaimed.

This RFP Document has not been filed, registered or approved in any jurisdiction. Recipients of this document should inform themselves of and observe any applicable legal requirements. Information provided in this RFP Document to the Bidders is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. JSCL, or their employees and advisors accept no responsibility for the accuracy or otherwise for any interpretation of law expressed herein.

JSCL may, in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP Document. Any change to the RFP Document will be notified through mail. No part of this RFP Document and no part of any subsequent correspondence by JSCL, its employees and advisors shall be taken either as providing legal, financial or other advice or as establishing a contract or contractual obligation. Contractual obligations would arise only if and when definitive agreements have been

approved and executed by the appropriate parties having the authority to enter into and approve such agreements. JSCL reserves the right to reject all or any of the Proposal submitted in response to this RFP Document at any stage without assigning any reasons whatsoever and the issue of this RFP Document does not imply that JSCL is bound to select a Bidder.

All Bidders are responsible for all costs and expenses incurred by them when evaluating and responding to this RFP Document in connection with or relating to or in making their Proposal including any negotiation or other costs incurred by them thereafter. All such costs and expenses will remain with the Bidder and JSCL, or their employees and advisors shall not be liable in any manner whatsoever for the same or for any other costs or expenses incurred by a Bidder in preparation or submission of its Proposal, regardless of the conduct or outcome of the Bidding Process. JSCL may, in its sole discretion, proceed in the manner it deems appropriate which may include deviation from its expected evaluation process, the waiver of any requirements, and the request for additional information. Unsuccessful Bidders will have no claim whatsoever against JSCL or their employees and advisors.

**RFP Structure**

| | |
|---|---|
| Part 1 | Instructions to Bidders (ITB) |
| Part 2 | Scope of Work and Requirement Specifications |

# Part 1 – Instructions to Bidders (ITB)

# Table of Contents

## List of Abbreviations

| Abbreviations | Definitions/Description |
|---|---|
| AMC | Annual Maintenance Contract |
| ANPR | Automatic Number Plate Recognition |
| BoQ/BoM | Bill of Quantity/ Bill of Material |
| CCTV | Closed-Circuit Television |
| FY | Financial Year |
| GoI | Government of India |
| GPRS | General Packet Radio Service |
| GUI | Graphical user Interface |
| ICT | Information & Communication Technology |
| ITCS | Intelligent Traffic Control System |
| IRC | Indian Road Congress |
| ITB | Instructions to Bidders |
| ITMS | Intelligent Traffic Management System |
| JSCL | Jabalpur Smart City Limited |
| LOA | Letter of Award |
| LS | Lump Sum |
| MIS | Management Information System |
| MoU | Memorandum of Understanding |
| NIT | Notice Inviting Tender |
| O&M | Operations & Maintenance |
| OEM | Original Equipment Manufacturer |
| PA system | Public Address system |
| POC | Proof of Concept |
| RLVD | Red Light Violation Detection |
| RFP | Request for Proposal |

| Abbreviations | Definitions/Description |
|---|---|
| SRS | Software Requirements Specifications |
| SVD system | Speed Violation Detection system |
| SI | System Integrator |
| TCC | Traffic Control Center |

# Bid Summary

| Sl. # | Particular | Details |
|---|---|---|
| 1. | Date of Issue of RFP | 13 June 2018 |
| 2. | Last date and time for submission of written Queries for clarifications | 25 June 2018, 17:00 hrs |
| 3. | Date & Time of Pre-bid Meeting | 27 June 2018, 15:00 hrs |
| 4. | Last date and time for submission of Online Proposals (Proposal Due Date) | 24 July 2018, 15:00 hrs |
| 5. | Last date and time for Hard copy Submissions | 25 July 2018, 15:00 hrs |
| 6. | Date and time of opening of Technical Proposals (Proposal Opening Date) | 25 July 2018, 15:30 hrs |
| 7. | Date of opening of Price Proposals | To be intimated to technically shortlisted Bidders |
| 8. | Address for Pre-bid meeting, Submission & Opening of Proposals and other relevant purposes | Jabalpur Smart City Limited,<br>Smart City Office,<br>Manas Bhawan, Wright Town,<br>Jabalpur, Madhya Pradesh, 482002 |
| 9. | Bid Security/EMD | Rs. 50,00,000/- (Rupees Fifty Lakhs) in form of bank guarantee as per format prescribed in this RFP or Demand Draft as per RFP |
| 10. | Cost of RFP Document | Rs. 10,000/- (Rupees Ten Thousand only) (non-refundable) to be paid online on e-procurement portal www.mpeproc.gov.in |
| 11. | Single Point of Contact from JSCL regarding RFP and pre-bid queries | Chief Executive Officer,<br>Jabalpur Smart City Limited,<br>Manas Bhawan, Wright Town, Jabalpur, Madhya Pradesh, 482002<br>Contact No. – 7611136805/9425413007 |
| 12. | Email Id for correspondence / pre-bid query submission | Email ID –<br>ictpmu@jscljabalpur.org<br>ceojscl@mpurban.gov.in |

# 1. INTRODUCTION

## 1.1. General

Jabalpur is among the first 20 cities selected in first round of smart cities challenge under Smart City Mission by Ministry of Housing and Urban Affairs, Government of India (formerly, Ministry of Urban Development). In this context, Jabalpur has incorporated a special purpose vehicle (SPV) – Jabalpur Smart City Limited (JSCL) to plan, design, implement, coordinate and monitor the smart city projects in Jabalpur. It has been incorporated under Company Act, 2013 on 14th March 2016.

JSCL invites sealed proposals for selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur. The ITMS System Integrator is proposed to be selected through an open, transparent and competitive bidding process, which is declared as the Successful Bidder in terms of this RFP Document.

1.1.1. The broad scope of work to be carried out by the ITMS System Integrator during the Contract Period are as below:

- Develop, supply, install, commission, integrate and implement the following ITMS solutions:
    1. Intelligent Traffic Control System
    2. Public Address (PA) system
    3. Traffic Junction Surveillance system
    4. Red Light Violation Detection (RLVD) System
    5. Automatic Number Plate Recognition System (ANPR) System
    6. Speed Violation Detection system
    7. E-Challan System
- Undertake operation, maintenance and other incidental activities relating to the ITMS solutions.

The detailed scope of work for the ITMS System Integrator is provided in **Part 2 - Scope of Work and Requirement Specifications**. The ITMS System Integrator shall have to comply with the Standards of Performance as provided in Part 2.

1.1.2. An agreement ("Master Service Agreement") shall be executed between JSCL or any Assigned entity as nominated by JSCL and the Successful Bidder for the Project.

## 1.2. Brief Description of Bidding Process

1.2.1. The RFP document can be downloaded from website https://www.mpeproc.gov.in The Technical Proposal and Price Proposal shall be submitted online as per the provisions of this RFP. Hardcopy of Technical Proposal also needs to be submitted in physical form to JSCL.

1.2.2. RFP document follows a two-step approach comprising:

- **Qualification Phase:** Technical evaluation of Bidders based on pre-qualification and Technical qualification criteria as set out in Section 3.1 and Section 4.5.
- **Proposal Phase:** Price evaluation of Bidders who have been found to be technically qualified.

As a part of the bidding process, as physical submission, the eligible entities and interested parties are required to submit one envelope containing:

(i) **Packet 1**: Bid Security & RFP Document Fee receipt and (ii) **Packet 2**: Technical Proposal.

**Packet 3:** Price Proposal is requited to be submitted online **ONLY** through the e-Procurement portal www.mpeproc.gov.in.

**Hard copy of the Price Proposal is NOT to be submitted.**

1.2.3. JSCL reserves the right to reject any Proposal in case the hardcopies of Packet 1 and Packet 2 as set out in clause 1.2.2 above are not received by due date and time for hard copy submission as mentioned in the Bid Summary section.

1.2.4. In case of any discrepancy between Technical Proposal submitted physically (hard copies) and Technical Proposal submitted online, the Technical Proposal submitted online shall be taken into consideration for bid evaluation.

1.2.5. Technical Proposal of the Bidders will be opened to check their eligibility to participate, to test their responsiveness, bid security and other such compliances and further to evaluate the technical capability and financial capability in accordance with the criteria set out in this RFP Document.

1.2.6. Price Proposal of only those bidders who are found technically qualified shall be opened.

1.2.7. Details of the schedule of Bidding Process is provided in Bid Summary section.

# 2. Instructions to Bidders

## 2.1. Definitions

2.1.1. In this RFP Document, the following words and expressions shall, unless repugnant to the context or meaning thereof and unless the document so specifically provides, have the meaning hereinafter respectively assigned to them:

(a) "**Bidder**" means an eligible entity that submits a proposal in terms of this RFP Document.

(b) "**Bidding Process**" shall mean the single stage competitive bidding process with two envelops system comprising (i) the Technical Proposal and (ii) the Price

(c) Proposal for selecting System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur as part of the Project.

(d) **"Go-Live"** shall mean

i. Successful deployment, commissioning and UAT of the ITMS application modules implemented

ii. Procurement, deployment and commissioning of the hardware items and desired connectivity at the identified locations required to support the functioning of ITMS modules/components

iii. Acceptance/Sign-off from JSCL/Jabalpur Traffic Police or its constituted committees or representatives

(e) **"ITMS System Integrator"** shall mean the bidder selected through tender process for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur as per the requirements set out in this RFP.

(f) "**JSCL**" shall mean Jabalpur Smart City Limited.

(g) "**Letter of Award**" shall mean the letter issued by JSCL to the Successful Bidder.

(h) "**Project**" shall mean design, development, testing, procurement, deployment, commissioning, integration and operation & maintenance of Intelligent Traffic Management System (ITMS) solutions in Jabalpur.

(i) **"Project site"** or **"Project location"** shall mean the locations such as traffic junctions, TCC, ICCC and other locations mentioned in the RFP where proposed ITMS equipment/devices as described in the RFP are physically located.

(j) "**Proposal**" shall mean the documents received by JSCL from an interested party who is eligible to submit its proposal in response to this RFP Document for the Project.

(k) "**RFP Document**" shall mean the documents set out in Clause 2.7 including all the Appendices, Annexures and Schedules thereof and any amendments thereto made in accordance with the provisions contained in this document.

(l) "**Successful Bidder**" shall mean the Bidder selected for award of the contract for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur.

Any other term(s), not defined herein above but defined elsewhere in this RFP shall have the meaning(s) ascribed to such term(s) therein and shall be deemed to have been included in this Section.

## 2.2. Scope of Proposal

2.2.1. JSCL invites proposals from eligible entities having the requisite technical and financial capabilities (“Proposal”).

2.2.2. The Proposals would be evaluated on the basis of the evaluation criteria set out in this Request for Proposal (RFP) Document (hereinafter referred to as the “**Evaluation Criteria**”) in order to identify the Successful Bidder for providing the services envisaged under the Master Service Agreement for the Project.

2.2.3. Terms used in this RFP Document which have not been defined herein shall have the meaning recognised thereto in the draft Master Service Agreement.

2.2.4. Pursuant to the release of this RFP Document, JSCL shall receive Proposals, prepared and submitted in accordance with the terms set forth in this RFP Document and other documents provided by JSCL pursuant to this RFP Document including annexure/ Appendix hereto (collectively referred to as the "Bid Documents"), as modified, altered, amended and clarified from time to time by JSCL.

2.2.5. This RFP Document and all attached documents are and shall remain the property of JSCL and are transmitted to the Bidders solely for the purpose of preparation and the submission of their respective Proposals in accordance herewith. Bidders shall not use it for any purpose other than for preparation and submission of their Proposals. JSCL will not return any Proposal or any information provided along therewith.

2.2.6. The statements and explanations contained in this RFP Document are intended to provide an understanding to the Bidders about the subject matter of this RFP Document and shall not be construed or interpreted as limiting, in any way or manner whatsoever, the scope of services, work and obligations of the Successful Bidder to be set forth in the Master Service Agreement or JSCL right to amend, alter, change, supplement or clarify the scope of service and work, the Master Service Agreement to be awarded pursuant to the RFP Document including the terms thereof, and this RFP Document including terms herein contained. Consequently, any omissions, conflicts or contradictions in the Bid Document are to be noted, interpreted and applied appropriately to give effect to this intent and no claim on that account shall be entertained by JSCL.

2.2.7. Bidders may note that JSCL will not entertain any material deviations from the RFP Document at the time of submission of the Proposal or thereafter. The Proposal to be submitted by the Bidders will be unconditional and the Bidders would be deemed to have accepted the terms and conditions of the RFP Document with all its contents including the terms and conditions of the draft Master Service Agreement. Any conditional Proposal is liable for outright rejection.

2.2.8. Conditional or incomplete proposals are liable to be treated as non-responsive and, therefore may be rejected at the sole discretion of JSCL.

## 2.3. Eligible Bidders

2.3.1. The Bidders eligible for participating in the Bidding Process shall be as follows:

(a) A business entity incorporated in India under the Companies Act, 1956/2013, or a partnership firm registered under the Indian Partnership Act, 1936 or the Limited Liability Partnerships Act, 2008, or

(b) A consortium of business entities, where the Lead Member is a business entity incorporated in India under the Companies Act, 1956/2013 or partnership firm registered under the Indian Partnership Act, 1936 or the Limited Liability Partnerships Act, 2008 and the other member(s) is incorporated in India under the Companies Act, 1956/2013 or a partnership firm registered under the Indian Partnership Act, 1936 or the Limited Liability Partnerships Act, 2008 or equivalent law(s) in the country of jurisdiction of the entity ("Consortium").

2.3.2. Proposal submitted by a Consortium must comply with the following additional requirements:

(a) the number of members in the Consortium would be limited to two (2) including the Lead Member;

(b) Any Bidder applying individually or as consortium member shall not be entitled to submit another Proposal either individually or as a member of any other consortium, as the case may be.

(c) the Proposal should contain the information required in respect of each member;

(d) members of the Consortium shall nominate one member as the Lead Member;

(e) an entity who has submitted Proposal for Project in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium;

(f) the members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 6**; and

(g) the members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 7** for the purpose of submission of the Proposal.

The MoU should, *inter alia*,

i. convey the intent of the Lead Member to enter into the Master Service Agreement and subsequently carry out all the responsibilities in terms of the Master Service Agreement;

ii. clearly outline the proposed roles and responsibilities of each member of the Consortium;

iii. include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the Project in accordance with the terms of the Master Service Agreement; and

iv. clearly refer to the Project for which the arrangement is made.

The MoU signed by all members should be submitted with the Proposal. The MoU should be specific to the Project and should contain the above requirements, failing which the Proposal shall be considered non-responsive.

2.3.3. A Bidder or member of Consortium who has earlier been barred by JSCL or any entity of Government of India or any state government or central government / department / agency in India from participating in Bidding Process shall not be eligible to submit a Proposal, if such bar subsists as on the Proposal Due Date.

Notwithstanding anything stated elsewhere in these documents, JSCL shall have the right to seek updated information from the Bidders to confirm their continued eligibility. Bidders shall provide evidence of their continued eligibility in a manner that is satisfactory to JSCL. A Bidder may be disqualified if it is determined by JSCL at any stage during the process that the Bidder will be unable to fulfil the requirements of the Contract or if a bidder fails to continue to satisfy the eligibility criteria. Supplementary information or documentations may be sought from Bidders at any time and must so be provided by such bidders within a reasonable timeframe as stipulated by JSCL.

### 2.4. Number of Proposals

2.4.1. Each Bidder shall submit only one (1) Proposal in response to this RFP Document. Any entity, which submits or participates in more than one Proposal will be disqualified.

### 2.5. Proposal Preparation Cost

2.5.1. The Bidder shall be responsible for all the costs associated with the preparation of its Proposal and its participation in the bidding process. JSCL will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of bidding.

### 2.6. Verification of Documents

2.6.1. JSCL reserves the right to verify all statements, information and documents submitted by the Bidders in response to the RFP Document. Failure on the part of JSCL to undertake such verification shall not relieve the Bidders of their obligations or liabilities hereunder nor will it affect in any manner any of the rights of JSCL hereunder.

### 2.7. Contents of RFP Document

2.7.1. The RFP Document consists of three Parts as listed below and would include any addenda issued in accordance with Clause 2.9.1.

| | |
|---|---|
| Part 1 | Instructions to Bidders |
| Part 2 | Scope of Work and Requirement Specifications |

### 2.8. Clarifications by Bidders

2.8.1. Bidders requiring any clarification on the RFP Document may notify JSCL in writing or by facsimile/ e-mail within such date as specified in the Bid Summary section.

2.8.2. JSCL shall endeavour to respond to the questions raised or clarifications sought by the Bidders. However, JSCL reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be construed, taken or read as compelling or requiring JSCL to respond to any question or to provide any clarification.

2.8.3. JSCL may also on its own, if necessary, issue interpretations and clarifications to all Bidders. All clarifications and interpretations issued by JSCL shall be deemed to be part of the Bidding Documents if the same is in writing. Verbal clarifications and information given by JSCL or their employees, advisors or representatives shall not in any way or manner be binding on JSCL.

### 2.9. Amendment of RFP Document

2.9.1. At any time prior to the Proposal Due Date, JSCL may, for any reason whatsoever, whether at its own initiative or in response to clarifications requested by a Bidder, modify the RFP Document by issue of Addenda.

2.9.2. In order to afford the Bidders reasonable time in which to take an Addendum into account, or for any other reason, JSCL may, at its own discretion, extend the Proposal Due Date.

2.9.3. JSCL may in its sole discretion and without assigning any reason modify, alter or amend all or any part of the schedule of Bidding Process by issue of addendum to the RFP Document.

**2.10. Pre-bid Meeting**

2.10.1. To clarify and discuss issues with respect to the RFP Document, a Pre-bid meeting will be held as per details provided in Bid Summary section.

2.10.2. Prior to the Pre-bid meeting, the Bidders may submit a list of queries and propose deviations, if any, in respect of the RFP Document. Bidders must formulate their queries and forward the same to JSCL prior to the meeting in terms of schedule set out in Bid Summary section. JSCL may, as may be considered acceptable at its sole discretion, amend the RFP Document based on inputs provided by Bidders.

2.10.3. JSCL will endeavour to hold the meeting as per schedule of Bidding Process. Any change in the schedule of Pre-bid meeting will be communicated by posting on e-Procurement website.

2.10.4. Attendance of the Bidders at the Pre-bid meeting is not mandatory. JSCL will endeavour to respond to all queries from all Bidders, irrespective of attendance of the Bidder in the Pre-bid meeting.

2.10.5. All correspondence / enquiries/ request for clarifications should be submitted to the following in writing by e-mail:

| | |
|---|---|
| SUBJECT | "Request for Proposal for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur"<br>(The above subject should be mentioned on the subject-line of emails) |
| ADDRESS | Jabalpur Smart City Limited<br>Smart City Office, Manas Bhawan, Wright Town,<br>Jabalpur, Madhya Pradesh, 482002, India |
| Email ID for Pre-bid Queries | E-mail:<br>ictpmu@jscljabalpur.org<br>ceojscl@mpurban.gov.in |

2.10.6. No interpretation, revision, or other communication from JSCL regarding this solicitation shall be valid unless it is made in writing by JSCL. JSCL may choose to send to all Bidders, written copies of JSCL responses, including a description of the enquiry but without identifying its source to all the Bidders.

2.10.7. Bidder shall submit all Pre-bid queries in the format as provided in **Appendix 1**.

**2.11. Miscellaneous – Other Provisions**

2.11.1. The Bidding Process shall be governed by, and construed in accordance with, the laws of India and only the Courts at Jabalpur shall have jurisdiction over all disputes arising under, pursuant to and / or in connection with the Bidding Process.

2.11.2. JSCL, in its sole discretion and without incurring any obligation or liability, reserves the right to:

(a) suspend and / or cancel the Bidding Process and / or amend and / or supplement the Bidding Process and / or modify the dates or other terms and conditions relating thereto;

(b) qualify or disqualify any Bidder and/or to consult with any Bidder in order to receive clarification or further information;

(c) retain any information and/or evidence submitted to JSCL by, on behalf of, and / or in relation to any Bidder;

(d) independently verify, disqualify, reject and / or accept any and all submissions or other information and / or evidence submitted by or on behalf of any Bidder;

2.11.3. It shall be deemed that by submitting the Proposal, the Bidder agrees and releases JSCL, its employees, agents, assigns and advisers, irrevocably, unconditionally, fully and finally from any and all liabilities for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and / or performance of any obligations hereunder, pursuant hereto and / or in connection herewith and waives any and all rights and / or claims it may have in this respect, whether actual or contingent, whether present or future.

**2.12. Disqualification**

2.12.1. Even if the Bidder meets the guidelines as set forth in this RFP Document, JSCL at its discretion can disqualify the Bidder, if the Bidder :

(a) has been debarred by any state or central government or government agency in India; or

(b) has made misleading or false representation in the forms, statements and attachments submitted; or

(c) or any of its constituents or its predecessor entity has a record of poor performance such as default in statutory compliances, consistent history of litigation / arbitration award against the Bidder / any of its constituents or financial failure due to bankruptcy, etc.; or

(d) any of its key personnel such as Director/owners/partners etc. have a criminal history or have been convicted by any court of law for any criminal offences other than minor offences.

2.12.2. Upon submission of the Proposal it would be deemed that the Bidder has prior to the submission thereof:

(a) made a complete and careful examination of the terms and conditions/ requirements, and other information set forth in this RFP Document and other Bidding Documents;

(b) received all such relevant information as it has requested from JSCL;

(c) acknowledged and accepted the risk of any inadequacy, error or mistake in the information provided in any of the Bidding Documents or furnished by or on behalf

of JSCL relating to any of the matters referred to in the Bidding Process including Bidding Documents;

(d) acknowledged and agreed that any inadequacy, lack of completeness or incorrectness of information provided in the Bidding Documents or ignorance of any of the matters referred to in the RFP, and any amendments thereof, shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from JSCL or a ground for termination of the Master Service Agreement; and

(e) agreed to be bound by the undertakings provided by it under this RFP Document and in terms hereof.

2.12.3. JSCL shall not be liable for any mistake or error or neglect by the Bidders in respect of the above.

2.12.4. The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process and subsequent to the issue of the LoA and during the subsistence of the Master Service Agreement. Notwithstanding anything to the contrary contained herein or in the LoA or the Agreement, JSCL shall reject a Proposal, withdraw the LoA, or terminate the Agreement, as the case may be, without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder has, directly or indirectly or through an agent, engaged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, JSCL shall forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to JSCL towards, *inter alia*, time, cost and effort of JSCL, without prejudice to any other right or remedy that may be available to JSCL hereunder or otherwise.

2.12.5. Without prejudice to the rights of JSCL under Clause 2.12.4 hereinabove and the rights and remedies which JSCL may have under the LoA or the Agreement, if Bidder is found by JSCL to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LoA or execution of the Agreement, such Bidder shall not be eligible to participate in any tender or RFP Document issued by JSCL during a period of five years from the date such Bidder, is found by JSCL to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.

2.12.6. For the purposes of Clauses 2.12.4 and 2.12.5 above, the following terms shall have the meaning hereinafter respectively assigned to them:

(a) “corrupt practice” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of JSCL who is or has been associated in any manner, directly or indirectly with the Bidding Process or the LoA or has dealt with matters concerning the Agreement or arising there-from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of JSCL, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or (ii) engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LoA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the LoA or the Master Service

Agreement, who at any time has been or is a legal, financial or technical adviser of JSCL in relation to any matter concerning the tender;

(b) "fraudulent practice" means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process ;

(c) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person's participation or action in the Bidding Process;

(d) "undesirable practice" means establishing contact with any person connected with or employed or engaged by JSCL with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process.

2.12.7. A Bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, JSCL shall forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to JSCL for, *inter alia*, the time, cost and effort of JSCL, including consideration of such Bidder's Proposal, without prejudice to any other right or remedy that may be available to JSCL hereunder or otherwise. Without limiting the generality of the foregoing, a Bidder shall be considered to have a Conflict of Interest that affects the Bidding Process, if:

(a) such Bidder, or any constituent thereof, and any other Bidder or any constituent thereof have common controlling shareholders or other common ownership interest by any third party, whether direct or indirect, or such Bidder or any constituent thereof is holding paid up capital, directly or indirectly, in other Bidder or any constituent thereof. Provided that this disqualification shall not apply (a) in case of common controlling shareholding or other common ownership interest by any third party, if such shareholding or ownership interest in one of the Bidders is less than 5% of its paid up and subscribed capital, or (b) in case of the direct or indirect shareholding in a Bidder by the other Bidder on any constituent thereof if such shareholding is less than 5% of that other Bidder's paid up and subscribed capital. Provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in sub-section (72) of section 2 of the Companies Act, 2013; or

(b) a constituent of such Bidder is also a constituent of another Bidder; or

(c) such Bidder receives or has received any direct or indirect subsidy from any other Bidder, or has provided any such subsidy to any other Bidder; or

(d) such Bidder has the same legal representative for purposes of this Proposal as any other Bidder; or

(e) such Bidder has a relationship with another Bidder, directly or through common third parties, that puts them in a position to have access to each other's information about, or to influence the Proposal of either or each of the other Bidder.

### 2.13. Language

2.13.1. The Proposal and all related correspondence and documents shall be written in the English language. The supporting documents and printed literature furnished by the Bidder with the Proposal may be in any other language provided that they are accompanied by a true and correct translation into English and duly signed, stamped and certified by the Bidder to be true and correct. Supporting materials that are not translated into English shall not be considered for evaluation of the Proposal. For the

purpose of interpretation and evaluation of the Proposal, the English language translation shall prevail.

### 2.14. Currency

2.14.1. The currency for the purpose of the Proposal shall be the Indian Rupee (INR).

### 2.15. Bid Security

2.15.1. Proposals shall be accompanied by a Bid Security for an amount as specified in Bid Summary section.

2.15.2. No relaxation of any kind in Bid Security shall be given to any Bidder.

2.15.3. The Bid Security shall remain valid for a period of 90 days beyond the Proposal Validity Period, and would need to be extended, if so required by JSCL, for any extension in Proposal Validity Period.

2.15.4. The Bid Security shall be in the form of an irrevocable Bank Guarantee issued by a nationalized Bank or a Scheduled Bank authorized to handle transactions of Government of India in India, in favour of **"Executive Director, Jabalpur Smart City Limited"** valid at Jabalpur, as per the format set out in **Appendix 11** or in the form of a demand draft issued by a bank in India, drawn in favour of **"Executive Director, Jabalpur Smart City Limited"** and payable at Jabalpur.

JSCL shall not be liable to pay any interest on the Bid Security and the same shall be interest free. For avoidance of any doubt, 'Scheduled Bank' shall mean a Bank as defined under Section 2(e) of the Reserve Bank of India Act, 1934.

2.15.5. The Bid Security shall be returned to unsuccessful Bidders on the signing of Agreement. The Bid Security, submitted by the Successful Bidder, shall be released:

(a) upon furnishing a Performance Security for an amount mentioned in the Master Service Agreement; and

(b) upon signing of the Agreement with the Successful Bidder.

2.15.6. The Bid Security shall be liable to be forfeited and Proposal shall be liable to be rejected in the following cases:

(a) If the Bidder withdraws its Proposal except as provided in Clause 2.22.1; or

(b) If the Bidder modifies or withdraws its Proposal during the interval between the Proposal Due Date and expiration of the Proposal Validity Period; or

(c) If the Bidder fails to accept the LoA within the stipulated time period as provided in Clause 4.10.1; or

(d) In case of the Successful Bidder, if it fails to sign the Master Service Agreement within the specified time limit or any extension thereof; or

(e) In case of the Successful Bidder, if it fails to furnish the Performance Security within the specified time limit prescribed in the LoA; or

(f) If any information or document furnished by the Bidder turns out to be misleading or untrue in any material respect; or

(g) If a Bidder engages in a corrupt, fraudulent, coercive, undesirable or restrictive practice as specified in Clauses 2.12.4 to 2.12.6 of this ITB.

### 2.16. Validity of Proposal

2.16.1. The Proposal shall indicate that it would remain valid for a period not less than 180 days from the Proposal Due Date (hereinafter "Proposal Validity Period"). JSCL reserves the right to reject any Proposal that does not meet this requirement.

2.16.2. Prior to expiry of the Proposal Validity Period, JSCL may request that the Bidders extend the period of validity for a specified additional period. A Bidder may refuse to comply with the request without forfeiting its Bid Security. A Bidder agreeing to the request will not be allowed to modify its Proposal, but would be required to extend the validity of its Bid Security for the period of extension and comply with Clause 2.15 of this document in all respects. A Bidder refusing to comply with the request shall not be eligible to participate in the Bidding process and his Proposal shall be returned and his Bid Security released.

### 2.17. Bidder's Responsibility

2.17.1. The Bidder is expected to examine carefully the contents of the Bidding Documents. Failure to comply with the requirements of Bidding Documents will be at the Bidder's own risk.

2.17.2. It would be deemed that prior to the submission of Proposal, the Bidder has:

(a) made a complete and careful examination of requirements and other information set forth in the Bidding Documents;

(b) received all such relevant information as it has requested from JSCL; and

(c) made a complete and careful examination of the various aspects of the Draft Master Service Agreement including but not limited to:

i. all matters that might affect the Bidder's performance under the terms of the Bid Documents;

ii. a diligent scrutiny and is in conformity with the terms and conditions of the draft Master Service Agreement;

iii. clearances required to be obtained under the draft Master Service Agreement; and

iv. applicable laws and regulations in force in India.

2.17.3. JSCL shall not be liable for any mistake or error or neglect by the Bidder in respect of the above.

### 2.18. Format and Signing of Proposal

2.18.1. Bidders shall provide all the information as required / can be inferred from this RFP Document and in the specified formats. JSCL reserves the right to reject any Proposal that is not in the specified formats.

2.18.2. The Proposal should be submitted in three packets:

#### I. Packet 1: Bid Security & RFP Document Fee receipt

This Packet shall carry a cover with text "**Packet 1: Bid Security & RFP Document Fee receipt**" written/printed on it. Bid Security (bank guarantee as per Appendix 11 or in the form of demand draft) in prescribed form need to be provided in accordance with the provisions set out in the RFP.

#### II. Packet 2: Technical Proposal, which would include:

(a) Covering Letter as per Appendix 2 stating the Proposal Validity Period.

(b) Format for Pre-Qualification Checklist as per Appendix 3

(c) Details of Bidder together with supporting documents required as prescribed in Appendix 4.

(d) Power of Attorney for Signing of the Proposal as prescribed in Appendix 5.

(e) In case of consortium, Power of Attorney for Signing of Proposal for Lead Member as per Appendix 6

(f) In case of consortium, Memorandum of Understanding as per Appendix 7

(g) Project Citations executed by the Bidder in the past together with certificates etc. as prescribed in Appendix 8.

(h) CA/Statutory Auditor Certificate for ongoing projects as per format in Appendix 9

(i) Non-Blacklisting affidavit as per format provided at Appendix 10

(j) Proposed Solution as per structure provided in Appendix 13

(k) CV as per format in Appendix 14

(l) Certificate of Incorporation of the Bidder under Companies Act, 1956 or 2013 issued by Registrar of Companies or Certificate of commencement of business in case of public limited company or Partnership Deed, as applicable.

(m) Supporting documents as per requirement of Clause 3.1 and Clause 4.5 of RFP Document.

(n) Details of GST Registration No., PAN No. and valid bank account. Bidder should submit supporting documents as proof.

(o) Manufacturer's Authorisation Form as per format in Appendix 15

(p) Compliance to Requirement (Technical / Functional Specifications) of proposed solutions, as per Appendix 20

(q) Unpriced BoQ with Make and Model no., as per Appendix 21

(r) No Deviation Certificate, as per Appendix 22

(s) Project Credential Summary, as per Appendix 23

Note: All pages of aforesaid document shall be duly signed by Authorized Representative of the Bidder. This Packet (Hardcopy) shall carry a cover with text "**Packet 2: Technical Proposal**" written/printed on it.

**III. Packet 3: Price Proposal (To be submitted online only)**

(a) Price Proposal as per the format set out in Appendix 16, 16A and 16 B and is to be submitted online only through e-Procurement portal https://www.mpeproc.gov.in

2.18.3. The Proposal shall be typed or printed in indelible ink and the Bidder shall initial each page. All the alterations, omissions, additions, or any other amendments made to the Proposal shall be initialled by the person signing the Proposal. All pages of the Proposal must be serially numbered.

## 2.19. Sealing, Marking and Submission of Proposal

2.19.1. The Bidders will submit the Proposal online and also in a single hard copy in single envelope excluding Packet-3 (Price Proposal) through Hand Delivery or RPAD/Speed post only, the details for which are specified below.

2.19.2. **Online Submission**

Bidder(s) shall upload the soft copies of its entire Technical Proposal consisting of scan copies of Bid Security & RFP Document Fee receipt, Eligibility and Qualification details/ Technical submissions & all other documents, certificates etc. as required under the terms of the RFP;

Registration:

Bidders are required to register themselves in the e-Procurement portal. The process of enrolling is given as below:

- ☞ Enter e-Procurement portal - www.mpeproc.gov.in.
- ☞ Click on "New User" link.
- ☞ Fill up all the relevant information and proceed further.
- ☞ Any of the supporting documents like PAN Card, Company registration, passport, driving license, etc. can be uploaded for portal registration.

Presently the registration fee is Rs.500/- + applicable taxes. The bidder should note that the registration is valid for one year.

Digital Signature:

Digital Signature Certificate of Class 2 or Class 3 categories issued by a licensed Certifying Authority (CA) needs to be obtained for use on the e-Tendering Portal. The e-Procurement portal has user manuals with detailed guidelines on enrolment and participation in the online bidding process. The user manuals can be downloaded for ready reference.

2.19.3. **General Guidelines for Online Submission**

(a) E-tendering process will be conducted through https://www.mpeproc.gov.in/ the e-Procurement portal of Government of Madhya Pradesh.

(b) To participate in e-tendering, the intending participants shall register themselves in the website of https://www.mpeproc.gov.in Detail information for registration and submission of offers through e-tendering process are available in the website https://www.mpeproc.gov.in. Bidders are advised to go through the FAQs, guidelines, instructions, manuals, policies, system setting procedures etc. as provided in the e-Procurement portal.

(c) Tender form and relevant documents will not be sold /issued manually from offices.

(d) The date and time for online submission of envelope shall be strictly followed in all cases. The bidder should ensure that their tender is submitted online before the expiry of the scheduled date and time. No delay on account of any cause will be entertained. **Tender(s) not submitted online will not be entertained.**

(e) If for any reason, any interested bidder fails to complete any online stages during the complete tender cycle, JSCL shall not be responsible for that and any grievance regarding that shall not be entertained.

(f) Tender shall consist of three Packets i.e. Bid Security & RFP Document Fee receipt in Packet-1, Technical Proposal in Packet-2 & Price Bid in Packet-3 through e-Tendering procedure only on https://www.mpeproc.gov.in portal.

(g) The Bids offer must be submitted along with document(s) as per the guidelines given in tender document by e-Tendering procedure only.

(h) The documents uploaded in the technical bid will be scrutinized by the Technical Evaluation Committee as per the document asked in the tender notice and tender document. The decision of the Tender Evaluation Committee shall be final in this regard.

(i) BG/DD for the purpose of bid security should be scanned and attached to the tender during submission. The originals should be submitted to the department before tender opening.

(j) For any query related to e-Tendering process, the e-Procurement Helpdesk can be reached through below mentioned ways:

**Through telephone:**

Toll free landline - 18002588684

Please note that this is a Toll free number and can be accessed from all the mobile and landlines. Kindly ask for your ticket number from the helpdesk.

**Through Email:**

Email ID - eproc_helpdesk@mpsedc.com

Direct access:

Bidders can also walk in to TCS office on the below mentioned address and get the query/issues resolved.

**Address:**

Tata Consultancy Services

5th Floor, Corporate block

DB Mall, Arera Hills

Bhopal, M.P. – 462011

If by any chance the issues or queries are not resolved by the Helpdesk associates then an email may be sent to **eproc.esc@gmail.com**. Bidders to note that the mail sent to this ID should also include the ticket no. and details of the problem.

2.19.4. **Hard Copy Submission**

The Bidder(s) shall also submit 1 (one) original set of the Technical Proposal (together with originals/ copies of documents required to be submitted along therewith pursuant to this RFP) as per Clause 2.18.2 and the instructions given below.

2.19.5. The Bidder shall seal the Packet 1: RFP Document Fees receipt & Bid Security" and Packet 2: Technical Proposal" in separate envelopes, duly marking the envelopes as "Packet 1: **Bid Security & RFP Document Fee receipt" and "Packet 2: Technical Proposal" respectively. These envelopes shall then be** sealed in an outer envelope.

Price Proposal as per the format set out in Appendix 16, 16A and 16B (Packet 3) needs **to be submitted online only.**

2.19.6. Technical Proposal envelope shall indicate the name and address of the Bidder.

2.19.7. All the envelopes shall clearly bear the following identification:

**"Proposal for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur"**

"Submitted by _____"

(Name, Address and Contact Phone No. of the Bidder)

2.19.8. The above envelope shall be addressed to:

ATTENTION OF Executive Director, JSCL

ADDRESS: Jabalpur Smart City Limited
Smart City Office, Manas Bhawan, Wright Town,
Jabalpur , Madhya Pradesh, 482002, India

2.19.9. If the envelope is not sealed and marked as instructed above, the Proposal may be deemed to be non-responsive and would be liable for rejection. JSCL assumes no responsibility for the misplacement or premature opening of such Proposal.

**2.20. Proposal Due Date**

2.20.1. Proposals shall be submitted on or before the Proposal Due Date and time mentioned in the Bid Summary section to the address provided in Clause 2.19.8 in the manner and form as detailed in this RFP Document. For the purposes of this RFP Document, the "Proposal Due Date" shall mean the time and date for submission of the Proposal as set out in the Bid Summary section. Proposals submitted by facsimile transmission or telex or email will not be acceptable.

2.20.2. JSCL, at its sole discretion, may extend the Proposal Due Date by issuing an Addendum in accordance with Clause 2.9.

**2.21. Late Proposals**

2.21.1. Any Proposal received by JSCL after the prescribed dead-line (Proposal Due Date as mentioned in Bid Summary section) will be summarily rejected and the hard copies of Packet 1 & 2 shall be returned unopened to the Bidder.

**2.22. Modification and Withdrawal of Proposals**

2.22.1. A Bidder may withdraw its Bid or re-submit its Bid (technical and/ or financial) before the Proposal Due Date as per the instructions/ procedure mentioned at e-Procurement portal. No Proposal shall be modified or withdrawn by the Bidder after the Proposal Due Date.

2.22.2. Bids withdrawn shall not be opened and processed further.

**2.23. Confidentiality**

2.23.1. Except as provided herein, information relating to the examination, clarification, evaluation and recommendation for the shortlisted Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional adviser advising JSCL in relation to or matters arising out of or concerning the Bidding Process. JSCL will treat all information submitted as part of Proposal in confidence and will take all reasonable steps to ensure that individuals

having access to such material treat the same in confidence. JSCL will not reveal any such information unless it is ordered to do so by a court or by any statutory, regulatory or Government authority or agency that has legal jurisdiction to require its disclosure or unless it is necessary to do so in order to enforce or assert any claim, right or privilege of JSCL or to defend any claim, action or proceedings against JSCL.

### 2.24. Clarifications Sought by JSCL

2.24.1. To assist in the process of evaluation of Proposals, JSCL may, at its sole discretion, ask any Bidder for any clarification on or with respect to its Proposal. The request for clarification and the response shall be communicated by Letter/Fax/Email. The Bidder in such cases would need to provide the requested clarification / documents promptly and within one (01) day of such communication, or such time frame as given by JSCL for the same, to the satisfaction of JSCL. It is in the interest of the bidder to provide reply within the timeframe failing which JSCL may not accept the said information and no change in the substance of the Proposal would be permitted by way of such clarifications.

### 2.25. Cost of RFP Document

2.25.1. The non-refundable cost of the RFP Document, as specified in Bid Summary section, needs to be paid online on the e-Procurement Portal https://www.mpeproc.gov.in.

### 2.26. Right to Vary Quantity

2.26.1. At the time of award of contract or during the Contract Period, the quantity of goods, works, scope or services originally specified in the bidding documents may be changed by JSCL by a written order to the ITMS System Integrator. It shall be without any change in the unit prices or other terms and conditions of the Bid and the bidding documents.

2.26.2. If JSCL does not procure any line item(s) as specified in the Bill of Materials for procurement or procures less than the quantity specified in the RFP Document due to change in circumstances, the bidder shall not be entitled for any claim or compensation except otherwise provided in the bidding document.

2.26.3. Repeat orders for extra items or additional quantities may be placed on the rates and conditions given in the contract. Delivery or completion period may also be proportionally increased on mutually agreed terms.

2.26.4. JSCL may choose to procure additional material for any of the line item specified in Bill of Materials of the quantities per line item during the Contract Period. The successful Bidder shall hold the same prices quoted herewith.

2.26.5. Payment for additional quantities for line items shall be made on pro-rata basis as per unit rates mentioned in the bid. The unit rates quoted by bidder shall be valid for at least two years from the date of Contract signing. Thereafter, the unit rates may be escalated up to 10% on year on year basis on mutually agreed terms.

2.26.6. At the time of procurement, the ITMS System Integrator may propose product with same or higher specification. The right to choose the vendor for additional quantities at any point during the Implementation or O&M phase rests with JSCL.

### 2.27. Right to Amend Project Scope

2.27.1. JSCL retains the right to amend the Project Scope without assigning any reason at any time during the Contract Period. JSCL makes no commitments, express or implied, that the full scope of work as described in this RFP will be commissioned.

2.27.2. JSCL, may at any time, at its sole discretion defer the implementation of certain components of the project as per its requirements. Appropriate time extensions (but no cost extensions) shall be provided in case of delay owing to deferment by JSCL.

**2.28. Site Visit**

2.28.1. The Bidder may wish to visit and examine the site or sites and obtain for itself, at its own responsibility and risk, all information that may be necessary for preparing the bid and entering into the Contract. The costs of visiting the site or sites shall be at the Bidder's own expense.

2.28.2. JSCL will arrange for the Bidder and any of its personnel or agents to gain access to the relevant site or sites, provided that the Bidder gives JSCL adequate notice of a proposed visit of at least three (3) days. Alternatively, JSCL may organize a site visit or visits concurrently with the pre-bid meeting, as specified in the RFP. Failure of a Bidder to make a site visit will not be a cause for its disqualification.

2.28.3. No site visits shall be arranged or scheduled after the deadline for the submission of the Bids and prior to the award of Contract.

**2.29. Sub-Contracting**

Any service agreement or sub-contract by the ITMS System Integrator may be entered into only with prior approval of JSCL. However, the responsibility to meet Standards of Performance will continue to be that of the ITMS System Integrator.

**2.30. Insurance**

The bidder will be required to undertake the insurance for all components of the ITCS Project which has been procured under this RFP.

**2.31. Eligible Goods and Services, and OEM Criteria**

2.31.1. For purposes of this clause, the term "goods" includes commodities, raw material, machinery, equipment, and industrial plants; and "related services" includes services such as insurance, transportation, supply, installation, integration, and testing, commissioning, training, and initial maintenance.

2.31.2. The Bidder shall quote specific make and model of OEM, for each of the goods. Providing more than one option shall not be allowed. All goods quoted by the bidder must be associated with item code and names and with printed literature describing configuration and functionality. Any deviation from the printed specifications should be clearly mentioned in the offer document by the Bidder.

2.31.3. The OEM for each major product or technology quoted (such as ITCS equipment, Traffic Junction Surveillance camera/equipment, PTZ camera, RLVD camera/equipment, ANPR camera/equipment, SVD camera/equipment etc.) should be in the business of that product or solution or technology for at least 3 years as on the date of release of the RFP.

2.31.4. All the OEMs for major product or technology quoted (such as ITCS equipment, Traffic Junction Surveillance camera/equipment, PTZ camera, RLVD camera/equipment, ANPR camera/equipment, SVD camera/equipment etc.) should have authorized presence in India either directly or through channel partner(s) as on the date of release of RFP.

2.31.5. The OEM for all active components should give a declaration that products or technology quoted/proposed shall not reach end-of-life for a minimum of 3 Years from the date of Last Date of Bid Submission and end of support for minimum of 3 years from the date of Go-Live.

2.31.6. The OEM for Traffic Junction Surveillance System, PTZ, RLVD, ANPR and SVD cameras should have minimum installation base of at least 50 cameras in India/Globe in the last 3 years.

2.31.7. Each of the proposed OEMs should either have existing capability and infrastructure to provide 24x7 technical support in India across the year, or should provide an undertaking that they would establish the requisite infrastructure and capability to provide 24x7 technical support in India across the year, on emerging a winner in this bidding process, within 3 months of issue of Letter of Award.

2.31.8. Bidder must quote products in accordance with above clause “Eligible goods and related services”.

2.31.9. Adequate supporting documents pertaining to the above points, along with a summary compliance table, should be submitted in the technical proposal by the Bidder.

# 3. Pre-Qualification Criteria

## 3.1. Pre-qualification criteria

The Technical Proposals of the Bidders shall be evaluated for meeting the eligibility and pre-qualification criteria based on the parameters listed below:

| Sl. # | Requirement Parameter | Pre-qualification Criteria | Supporting Document required |
|---|---|---|---|
| 1. | Legal Entity | (a) The Sole Bidder or the Lead Member, in case of a consortium, must be a business entity incorporated in India under the Companies Act, 1956/2013 or partnership firm registered under the Indian Partnership Act, 1936 or the Limited Liability Partnerships Act, 2008.<br>(b) In case of a consortium, the other Member of the consortium should be incorporated as per (a) above or equivalent law(s) in the country of jurisdiction of the entity subject to Clause 2.3.2.<br><br>The Sole Bidder / all members in case of a consortium should be registered with GST in India.<br>In case any consortium member is a foreign entity, the Bidder can give an undertaking along with the Proposal that in case of award, the foreign consortium partner will register with the GST authority within 30 days of LoA | • Copy of Certificate of Incorporation / Registration under Companies Act, 1956/2013 or any equivalent foreign act, or partnership deed as applicable<br>• Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 6**<br>• In case of a Consortium, Memorandum of Understanding (MoU), as per the format provided under **Appendix 7**<br>• GST Registration Certificate.<br>• In case of foreign entity, an undertaking on GST registration, as applicable. |
| 2. | Annual Turnover | The Sole Bidder or the Lead Member in case of consortium should have an average annual turnover of minimum Rs. 50 crores during the last three (03) financial years, i.e. FY 2014-15, FY 2015-16 and FY 2016-17.<br>For the purpose of this criterion, annual turnover of only the bidding entity will be considered. Annual turnover of any parent, subsidiary, associated or other related entity will not be considered. | • Certificate from the Statutory Auditor clearly specifying the annual turnover for the specified years<br>• Audited and Certified copies of Balance Sheet and Profit/Loss Account of last 3 Financial Years last three (03) financial years, i.e. FY 2014-15, FY 2015-16 and FY 2016-17. |
| 3. | Net worth | The Sole Bidder or the Lead Member, in case of a Consortium must have positive Net worth in Indian Rupees as on 31 March, 2017.<br>For the purpose of this criterion, net-worth of only the bidding entity will be | • Certificate from the Statutory Auditor clearly specifying the net worth of the firm as on 31 March 2017. |

| Sl. # | Requirement Parameter | Pre-qualification Criteria | Supporting Document required |
|---|---|---|---|
| | | considered. Net-Worth of any parent, subsidiary, associated or other related entity will not be considered. | |
| 4. | Project Experience of Traffic Management | The Sole Bidder/Lead Member or any member of the consortium should have demonstrable experience of implementing at least one project with minimum 20 traffic junctions for vehicle actuated traffic signals in India or abroad in the last 5 years from the Proposal Due Date. | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where minimum 20 traffic signals with vehicle actuated signals have already been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| 5. | Project Experience of Traffic Enforcement - 1 | The Sole Bidder/Lead Member or any consortium member (in case of consortium) should have the experience of ITMS Project implementation of at least one project of contract value of minimum Rs. 10 Crore during last 7 years as on the Proposal Due Date.<br>Note: For the purpose of evaluation, project will be defined as a project for | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND |

| Sl. # | Requirement Parameter | Pre-qualification Criteria | Supporting Document required |
|---|---|---|---|
| | | a Government Authority/Undertaking in India or abroad including at least one or more of the following components:<br>• RLVD system<br>• ANPR system<br>• SVD System | 2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where at least one of desired project component has been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work/contract value is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| 6. | Project Experience of Traffic Enforcement - 2 | The Sole Bidder/Lead Member or any consortium member (in case of consortium) should have the experience of implementing at least one project including installation of RLVD or ANPR or SVD cameras at minimum 10 locations in India or abroad. | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where at least one of desired project component for required no. of locations has been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is |

| Sl. # | Requirement Parameter | Pre-qualification Criteria | Supporting Document required |
|---|---|---|---|
| | | | complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| 7. | Undertaking on Blacklisting | The Sole Bidder or the Lead Member and each member of the consortium, in case of a Consortium, should not have been black-listed by any State / Central Government Department or Central /State PSUs as on Proposal Due Date. | • Affidavit certifying non-blacklisting as per format given in Appendix 10. |

**Note:**

(a) The bidder can use the experience of a company which controls, is controlled by, or is under the common control with such bidder. The 'control' means the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such bidder, as on the Proposal Due Date. In such case, the bidder shall submit the following documents:

- A certificate from the bidder's statutory auditor/ chartered accountant certifying the relationship between the bidder and the company whose experience is being shown along with the percent of voting shares under common control.
- A letter of support from the company whose experience is being shown undertaking that it will provide necessary technical/financial support to the bidder in implementation of the project.
- For an international project, if the original client certificate and other documents are in language other than English than a translated copy duly confirmed by the Authorised signatory of the Bid/Proposal.

(b) For projects where contract value has been received in any currency other than Indian Rupees, than the foreign currency conversion rate available on Reserve Bank of India's portal as on the date of release of the RFP document shall be used for conversion of amount in foreign currency to Indian Rupees equivalent.

(c) An OEM / Product Company can be part of multiple bids, if participating only as the Solution provider for the respective Product / Solution. An OEM can be part of multiple bids as OEM / sub-contractors.

# 4. Evaluation Methodology

## 4.1. General

4.1.1. The Bidder must possess the technical know-how and the financial wherewithal that would be required to successfully provide the services sought by JSCL, for the entire contract duration. The Bidder's Bid must be complete in all respects, conform to all the requirements, terms and conditions and specifications as stipulated in the Bid Document.

4.1.2. JSCL will appoint a Tender Evaluation Committee (TEC) to scrutinize and evaluate the prequalification of bidders, technical and commercial bids received. The TEC will examine the Bids to determine whether they are complete, responsive and whether the Bid format conforms to the Bid Document requirements. JSCL may waive off any informality or nonconformity in a Bid which does not constitute a material deviation according to JSCL.

4.1.3. The technical bid of only those bidders shall be opened which meet all the criteria of the pre-qualification criteria mentioned in Section 3.1 as per format provided in **Appendix 3.**

4.1.4. There should be no mention of bid prices in any part of the Technical Proposal. The Proposal is liable to be rejected if any price bid is included in the technical Proposal.

## 4.2. Opening of Proposal

4.2.1. JSCL shall open the envelope labelled "Packet 1: Bid Security & RFP Document Fee receipt" and "Packet 2: Technical Proposal" on the Proposal Opening Date as mentioned in Bid Summary section, or at an appropriate time on the extended date for submission of Proposals as may be notified.

4.2.2. In the event of the Proposal Opening Date being declared a holiday for JSCL, the Proposals shall be opened at the same time on the next working day.

4.2.3. Any Proposal not accompanied with valid Bid Security in the acceptable form as per Clause 2.15 will be summarily rejected by JSCL as being non-responsive**.**

4.2.4. JSCL will subsequently examine and evaluate the Proposals in accordance with the provisions set out in this Section 0.

4.2.5. To facilitate evaluation of Proposals, JSCL may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Proposal.

## 4.3. Test of Responsiveness

4.3.1. Prior to evaluation of Proposals, JSCL will determine whether each Proposal is responsive to the requirements of the RFP Document. A Proposal shall be considered responsive if it satisfies all the criteria stated below:

(a) It contains the information and documents as requested in the RFP Document.

(b) It mentions the Proposal Validity Period as set out in Clause 2.16.1.

(c) It is accompanied by the Bid Security as set out in Clause 2.15.1.

(d) It provides the information in reasonable detail. ("Reasonable Detail" means that, but for minor deviations, the information can be reviewed and evaluated by JSCL without communication with the Bidder). JSCL reserves the right to determine whether the information has been provided in reasonable detail.

(e) There are no inconsistencies between the Proposal and the supporting documents.

(f) It does not affect in any substantial way the scope, obligations, quality, specifications, standards, rules, controls and performance of the Project.

(g) It does not contain any condition.

4.3.2. Bidders are expected to submit proposals complete in all respects. All the required documents and details must be included. In the absence of the same, leading to material deviation or reservation, the Proposal is liable to be rejected.

4.3.3. A material deviation or reservation is one:

a) which affects in a substantial way, the scope, quality, and / or performance of the services under the Master Service Agreement, or

b) which limits in a substantial way, inconsistent with the RFP Document, JSCL rights or the Bidder's obligations under the Master Service Agreement, or

c) which would affect unfairly the competitive position of other Bidders presenting substantially responsive bids.

4.3.4. JSCL reserves the right to reject any Proposal which in its opinion is non-responsive and no request for modification or withdrawal shall be entertained by JSCL in respect of such Proposals.

### 4.4. Evaluation of Proposals

4.4.1. The Proposals shall be evaluated by Tender Evaluation Committee (TEC) of JSCL. JSCL may appoint any external agency/ consultants, if required, for evaluation of bids.

4.4.2. The evaluation of the Proposals shall be carried out in the following two stages:

- **Stage I** – Evaluation of Technical Proposals of the Bidders.
- **Stage II** – Evaluation of Price Proposals of the Bidders who have qualified in Stage I evaluation.

4.4.3. In each stage of evaluation, the respective Proposals shall be first checked for responsiveness with the requirements of the RFP Document. JSCL reserves the right to reject the Proposal of a Bidder if the contents of the Proposal are not substantially responsive with the requirements of this RFP Document.

4.4.4. In Stage I of Proposal Evaluation, the Proposals submitted by the Bidders shall be checked for valid Bid Security, meeting the eligibility and pre-qualification criteria specified in the RFP document and other technical evaluation criteria set out in RFP document.

4.4.5. In Stage II, the Price Proposals of the Bidders who have qualified in the Stage I evaluation would be opened and evaluated as per the criteria set out in the RFP Document.

### 4.5. Evaluation of Technical Proposals

4.5.1. The Technical Proposals of only such Bidders shall be evaluated whose Proposals have been found to be substantially responsive as per Clause 4.3.

4.5.2. Only those Bidders who meet all the Eligibility Criteria as set out in Section 2.3 and Pre-qualification criteria as set out in Section 3.1 shall be considered for further evaluation of their Technical Proposals.

4.5.3. The Technical Proposals of the Bidders shall be evaluated based on the Technical Evaluation Framework as listed in the Table below:

### (a) Technical Evaluation Framework:

| Section # | Evaluation Criteria | Total Marks |
|---|---|---|
| **A** | Sole bidder/Lead Member Profile | 15 |
| **B** | Relevant Project Experience | 35 |
| **C** | Approach & Methodology, Presentation and Demonstration (POC) | 40 |
| **D** | Proposed Key Project Team | 10 |
| **Overall Technical Score Total** | | **100** |

### (b) Evaluation Parameters for Technical Proposal

<table>
<tr><th>Sl. #</th><th>Technical Evaluation Criteria</th><th>Maximum Marks</th><th>Supporting Document required</th></tr>
<tr><td>A.</td><td>Sole bidder/Lead Member Profile</td><td>15</td><td></td></tr>
<tr><td>A1</td><td>Average annual turnover of the Sole Bidder/Lead Member in case of a Consortium, per annum during the last three (03) financial years, i.e. FY 2014-15, FY 2015-16 and FY 2016-17.<br>Marks shall be allotted as given below:<br>• More than INR 200 Crore = 15 marks<br>• More than INR 100 Crore and up to INR 200 Crore = 12 marks<br>• INR 50 Crore and up to INR 100 Crore = 10 marks</td><td>15</td><td>Certificate from the Statutory Auditor clearly specifying the annual turnover for the specified years</td></tr>
<tr><td>B.</td><td>Relevant Project Experience</td><td>35</td><td></td></tr>
<tr><td>B1</td><td>Experience of implementing project(s) with minimum 20 traffic junctions for vehicle actuated traffic signals in India or abroad in the last 5 years from the Proposal Due Date.<br>Marks shall be allotted as below:<br><table><tr><th>No. of projects</th><th>Marks</th></tr><tr><td>1 project</td><td>12</td></tr><tr><td>2 projects or more projects</td><td>15</td></tr></table></td><td>15</td><td>1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where minimum</td></tr>
</table>

| Sl. # | Technical Evaluation Criteria | Maximum Marks | Supporting Document required |
|---|---|---|---|
| | | | 20 traffic signals with vehicle actuated signals have already been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| B2 | Experience of implementing project on installation of RLVD system covering at least 10 locations/junctions in India or abroad in the last 7 years from the Proposal Due Date.<br>Marks shall be allotted as below:<br>Any qualifying project – 5 marks | 5 | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where the desired project component for required no. of locations/junctions has been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| B3 | Experience of implementing project on installation of ANPR system covering at least 5 locations/junctions in India or abroad in the last 7 years from the Proposal Due Date.<br>Marks shall be allotted as below: | 5 | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order. |

| Sl. # | Technical Evaluation Criteria | Maximum Marks | Supporting Document required |
|---|---|---|---|
| | Any qualifying project – 5 marks | | AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where the desired project component for required no. of locations/junctions has been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| B4 | Experience of implementing project on installation of SVD system covering at least 5 locations/junctions in India or abroad in the last 7 years from the Proposal Due Date.<br>Marks shall be allotted as below:<br>Any qualifying project – 5 marks | 5 | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where the desired project component for required no. of locations/junctions has been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ |

| Sl. # | Technical Evaluation Criteria | Maximum Marks | Supporting Document required |
|---|---|---|---|
| | | | Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| B5 | Experience of implementing project on installation of Public Address (PA) system covering at least 10 locations for a Government Authority / Undertaking /PSU/ Government in India or abroad during last 7 years (as on the Proposal Due Date)<br>Marks shall be allotted as below:<br>• Any qualifying project – 5 marks | 5 | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where the desired project component for required no. of locations/junctions has been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** |
| **C.** | **Approach & Methodology, Presentation and Demonstration Proof of Concept (POC)** | **40** | |
| C1 | • Understanding of requirement and Implementation Approach<br>• Proposed Solution<br>• Work break down schedule<br>• Manpower Deployment plan, Training & Capacity Building plan and Handholding plan | 5 | Bidder to submit technical write up on the ITMS solutions proposed as per Structure provided in **Appendix 13**. |

| Sl. # | Technical Evaluation Criteria | Maximum Marks | Supporting Document required |
|---|---|---|---|
| C2 | **Presentation**<br>Following parameters will be evaluated during presentation:<br>• Understanding of requirements (functional and technical) and completeness of proposed solution<br>• Presentation of Approach & Methodology for<br>• Implementation<br>• Clarifications provided during Presentation | 15 | Assessment to be based on the presentation made by Bidder |
| C3 | **Proof of Concept/Demonstration**<br>• Red Light Violation Detection (RLVD) and Speed Violation Detection (SVD) system<br>• Integration of RLVD & SVD with E-Challan system | 20 | Based on the demonstration (POC) carried out the bidder at Jabalpur in presence of JSCL. |
| **D.** | **Proposed Key Project Team** | **10** | |
| D1 | Project Manager | 4 | Bidder to submit CVs of Key Project Team as per format provided in **Appendix 14.**<br>Based on the CVs submitted by Bidder as a part Technical Proposal. |
| D2 | Intelligent Traffic Management System (ITMS) Expert | 3 | |
| D3 | Traffic Control Center (TCC) Expert | 3 | |

**Note:**

i. **Important: Minimum technical score to qualify for Price Proposal evaluation is 70 marks out of total 100 marks.**

ii. For an international project if the original client certificate and other documents are in language other than English than a translated copy duly confirmed by the Authorised signatory of the Bid/proposal.

iii. For projects where contract value has been received in any currency other than Indian Rupees, than the foreign currency conversion rate available on Reserve Bank of India's portal as on the date of release of the RFP document shall be used for conversion of amount in foreign currency to Indian Rupees equivalent.

iv. The relevant project experience can be met by any member, in case of a Consortium.

v. The bidder can use the experience of a company which controls, is controlled by, or is under the common control with such bidder. The 'control' means the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such bidder, as on the Proposal Due Date. In such case, the bidder shall submit the following documents:

- A certificate from the bidder's statutory auditor/ chartered accountant certifying the relationship between the bidder and the company whose experience is being shown along with the percent of voting shares under common control.
- A letter of support from the company whose experience is being shown undertaking that it will provide necessary technical/financial support to the bidder in implementation of the project.

vi. JSCL reserves the right to contact the competent authority of the client to verify the project credentials submitted by the Bidders.

**(c) Key personnel criteria:**

The ITMS System Integrator shall provide adequate number of personnel, each responsible for a specific role within the project.

Following table indicates the minimum qualification required for Key positions for evaluation for this project.

However, the ITMS System Integrator shall independently estimate the teams size required to meet the requirements of service Levels as specified as part of this RFP Document.

| Sl. # | Position | Minimum qualifications |
|---|---|---|
| 1 | Project Manager | (a) Education: MBA/MCA/M. Tech & B. Tech/B.E. from a recognized educational institution in India<br>(b) Experience: Minimum 10 years of experience in areas related to ITMS/ Smart City/ e-Governance fields/ICT sector<br>(c) Project/Program management Experience in Large ICT/ Command and Control Centre implementation Project of value<br>(d) Should preferably have PMP or Prince2 certification |
| 2 | Intelligent Traffic Management System (ITMS) Expert | (a) Education: B. Tech/B.E. from a recognized educational institution<br>(b) Experience: Minimum 8 years of experience in areas related to ITMS/ Traffic Enforcement System/ Traffic Signals/ Smart City projects<br>(c) Should have experience in designing & implementing ITMS for minimum 2 projects |
| 3 | Traffic Control Center Expert | (a) Education: B. Tech/B.E. from a recognized educational institution<br>(b) Experience: Minimum 8 years of experience in areas related to City Command Control Center/ Traffic Control Center/Smart City projects<br>(c) Should have experience in designing & implementing City Command Control Center/ Traffic Control Center for minimum 2 projects |

4.5.4. For an entity claiming experience for an activity for technical evaluation, only those projects would be considered where such entity was either the sole project executant or was responsible for implementation of the respective component of the Project.

4.5.5. The Bidders are advised that their Technical Proposals should be concise and precise and should contain only the relevant information.

4.5.6. Technical Proposal Presentations: The Bidders may be required by JSCL to make a presentation to JSCL at a date, time and venue decided by JSCL. In case, JSCL decides to invite Bidders for presentation, the Bidders will be required to present their Technical Proposals in the presentation ensuring that all aspects are covered properly and adequately.

4.5.7. JSCL may conduct Bidder-specific meeting(s) with individual Bidders to clarify aspects of the Bidder's Technical Proposal that require explanation in the opinion of JSCL.

4.5.8. The marks secured based on evaluation of the Technical Proposal as outlined above shall be the technical score of the Bidder ("Technical Score"). Only those Bidders who have secured Technical Score of 70 or more ("Threshold Score") shall be considered for opening and evaluation of their Price Proposal ("Shortlisted Bidders").

**4.6. Evaluation of Price Proposal**

4.6.1. The Price Proposals of all the Shortlisted Bidders will be opened at a date and time notified by JSCL, in the presence of the Bidders' representatives who choose to attend. The Bidders' authorised representatives who are present shall be required to sign and record their attendance.

4.6.2. Proposal of the Bidders would be evaluated on the basis of the "**Total Proposal Price**" quoted in the Price Proposal.

4.6.3. Price Proposals determined to be substantially responsive will be checked for any errors. If there is any discrepancy in the Price Proposal, it will be dealt as per the following:

(a) If, in the price structure quoted for the required goods/services/works, there is discrepancy between the unit price and total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the JSCL there is an obvious misplacement of the decimal point in the unit rate, in which case the total cost as quoted will govern and the unit rate corrected. Arithmetic errors will be rectified.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.

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

(d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of JSCL, the bid is liable to be disqualified.

(e) Any omission in filling the columns of "units" and "rate" or pertaining to the Taxes/levies, service tax as applicable etc., shall deemed to be treated as inclusive in the total project cost.

The amount stated in the Price Proposal will be adjusted in accordance with the above mentioned points for the correction of errors and, shall be considered as binding upon

the bidder. If the bidder does not accept the corrected amount of bid, his bid will be rejected, and the Bid Security shall be forfeited.

4.6.4. The Bidder who has quoted the least Total Proposal Price shall be given a Financial Score of 100 marks. The Financial Scores of Bidders shall be computed as follows:

**Financial Score of a Bidder = 100 x [lowest Total Proposal Price quoted (in INR) / Total Proposal Price quoted by the Bidder (in INR)]**

4.6.5. The marks secured based on evaluation of the Price Proposal as per the above shall be the Financial Score of the Bidder ("Financial Score").

4.6.6. Composite Score of the Bidders shall be worked out as under:

**Composite Score of a Bidder = Technical Score x 70% + Financial Score x 30%**

4.6.7. **The CAPEX price quoted should not be more than 70% of overall value of the Total Price Proposal.**

4.6.8. If there is any discrepancy in the Price Proposal, it will be dealt as per the following:

a) If there is a discrepancy between words and figures, the amount in words shall prevail, and necessary corrections shall be made.

b) If, in the price structure quoted for the required goods/services/works, there is discrepancy between the unit price and total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly.

c) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.

d) If there is any such discrepancy in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of Purchaser, the bid is liable to be disqualified.

## 4.7. Award Criteria

Preferred Bidder shall be identified through following approach:

(a) The Bidders shall be ranked based on their Composite Scores. The Bidder who has secured the highest Composite Score shall be considered to be the Preferred Bidder.

(b) In case, two or more Bidders identified as per (a) above, secure identical Composite Score, the Bidder who has secured highest Technical Score shall be considered to be the Preferred Bidder.

(c) Further, in case two or more Bidders identified as per (b) above, have identical Technical Scores, Preferred Bidder shall be determined through a draw of lots conducted in the presence of such Bidders.

Upon acceptance of the Proposal of the Preferred Bidder with or without negotiations, JSCL shall declare the Preferred Bidder as the Successful Bidder.

### 4.8. Notification

4.8.1. JSCL will notify the Successful Bidder by a Letter of Award (LOA) in the format set out in Appendix 17 ("Draft Letter of Award") that its Proposal has been accepted.

### 4.9. JSCL's Right to Accept or Reject Proposal

4.9.1. JSCL reserves the right to accept or reject any or all of the Proposals without assigning any reason and to take any measure as it may deem fit, including annulment of the bidding process, at any time prior to award of Contract, without any liability or obligation for such acceptance, rejection or annulment.

4.9.2. JSCL reserves the right to invite revised Price Proposals from Bidders with or without amendment of the RFP Document at any stage, without any liability or obligation for such invitation and without assigning any reason therefor.

4.9.3. JSCL reserves the right to reject any Proposal at any stage if:

(a) the Bidder does not respond promptly and thoroughly to requests for supplementary information requested by JSCL for the evaluation of the Proposal; or

(b) one or more of the pre-qualification conditions has/have not been met by the Bidder; or

(c) the Bidder has made a material misrepresentation or such material misrepresentation is discovered at any time; or

(d) the Bidder engages in a corrupt, fraudulent, coercive, undesirable or restrictive practices.

4.9.4. If such disqualification / rejection occurs after the Price Proposals have been opened and the Bidder securing highest Composite Score gets disqualified / rejected, then JSCL reserves the right to:

(a) consider the Bidder with next highest Composite Score as Preferred Bidder; or

(b) take any such measure as may be deemed fit in the sole discretion of JSCL, including annulment of the Bidding Process.

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

4.9.6. In case it is found, after the issue of the LOA or signing of the Master Service Agreement or after its execution and during the subsistence thereof, that:

(a) one or more of the pre-qualification conditions have not been met by the Bidder; or

(b) the Bidder has made a material misrepresentation; or

(c) the Bidder has engaged in a corrupt, fraudulent, coercive, undesirable or restrictive practice;

then the LOA or the Master Service Agreement, as the case may be, shall notwithstanding anything to the contrary contained therein or in this RFP Document, be liable to be terminated by a communication in writing by JSCL to the Successful Bidder without JSCL being liable in any manner whatsoever to the Successful Bidder. In such an event, JSCL shall forfeit Bid Security or Performance Security, as the case may be, without prejudice to any other rights or remedy that may be available to JSCL in this regard.

### 4.10. Acknowledgment of LOA and Execution of Master Service Agreement

4.10.1. Within seven (07) days from the date of issue of the LOA, the Successful Bidder shall accept the LOA and submit to JSCL the Letter of Acknowledgement in the format set out in Appendix 18.

4.10.2. The Successful Bidder shall execute the Master Service Agreement within fifteen (15) days of the issue of LOA or such time as indicated by JSCL.

4.10.3. JSCL will promptly notify other Bidders that their Proposals have been unsuccessful and their Bid Security will be released as promptly as possible upon signing of the Master Service Agreement with the Successful Bidder /receipt of Acknowledgement of LOA from the Successful Bidder.

### 4.11. Performance Security

4.11.1. The Successful Bidder shall within fifteen (15) days of the issue of LOA or such time as indicated by JSCL furnish Performance Security as per draft Master Service Agreement and in terms of LOA, by way of an irrevocable Bank Guarantee issued by a Nationalized Bank or a Scheduled Bank authorized to handle transactions of Government of India in India, in favour of "**Executive Director, Jabalpur Smart City Limited**", payable at Jabalpur as required under the Master Service Agreement. For the avoidance of any doubt, 'Scheduled Bank' shall mean a Bank as defined under Section 2 (e) of the Reserve Bank of India Act, 1934.

4.11.2. Failure of the Successful Bidder to comply with the requirements of Clause 4.11.1 shall constitute sufficient grounds for the annulment of the LOA, and forfeiture of the Bid Security. In such an event, JSCL reserves the right to:

(a) consider the second ranked Bidder (with next highest Composite Score) as Preferred Bidder provided it agrees to match the Total Proposal Price of the highest Composite Score Bidder if its Total Proposal Price is higher than that of the highest Composite Bidder. In case, the second ranked Bidder fails to match the above requirement or requirements of Clause 4.11.1, the next ranked Bidder shall be considered as Preferred Bidder provided:

i. its Price Proposal Value is lower than that of the Bidders ranked higher than it, or

ii. agrees to match the lowest of the Total Proposal Prices of the Bidders ranked higher than it.

The above process shall be reiterated until the identification of the Preferred Bidder or till the last ranked Bidder.

## Appendix 1: Format of Pre-bid Queries

Bidder shall submit all pre-bid queries in **MS excel** in the following format.

| **Request for clarification** | |
|---|---|
| Name and Address of the organization submitting request | |
| Name and Position of person submitting request | |
| Contact details of the Organization/ Authorized Representative | |
| Tel:<br>Mobile:<br>Fax:<br>E-mail: | |

| Sl. # | Reference (RFP Section, Clause and Page Number | Query Category | Provision in the RFP | Clarification Sought/ Suggestion |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| n | | | | |

- **Bidders shall submit their queries only at the email ID as specified in Bid Summary section**
- **Query Category** – Bidder are required to submit their queries under the following categories:
    - General
    - Pre-Qualification criteria
    - Technical Evaluation Criteria
    - SLA
    - Specifications
    - BoM/BoQ
    - Legal/Contract Conditions
    - Others
- Queries not adhering to the specified format may not be considered.

## Appendix 2: Format for Covering Letter

(On the Letterhead of the Bidder)

Date: _____

To,

Executive Director

Jabalpur Smart City Limited,

Manas Bhawan, Wright Town,

Jabalpur, Madhya Pradesh - 482002

**Sub: Proposal for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur**

Dear Sir,

We have read and understood the Request for Proposal (RFP) Document for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur. We hereby submit our Proposal for the captioned subject as per the following details:

1. We are enclosing and submitting herewith our Proposal in original, along with the information and documents as per the requirements of the RFP Document, for your evaluation and consideration.
2. The Proposal is unconditional.
3. All information provided in the Proposal and in its Appendices is true and correct.
4. We shall make available to JSCL any additional information it may find necessary or require to clarify, supplement or authenticate the Proposal within such time as may be prescribed by JSCL.
5. We acknowledge the right of JSCL to reject our Proposal without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.
6. We certify that we or any of our constituents or our predecessor entity have neither failed to perform on any contract, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award, nor been expelled from any contract nor have had any contract terminated for breach on our part nor have we or any of our constituents or our predecessor entity defaulted in complying with any statutory requirements.
7. We declare that:
   (a) We have examined and have no reservations to the Bid Documents, including the Addendum (if any) issued by JSCL.
   (b) We have not directly or indirectly or through any agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in clause 2.12.5 & 2.12.6 of the RFP Document, in respect of any tender or request for proposal issued by or any agreement entered into with JSCL or any other public sector enterprise or any government, Central or State; and
   (c) We hereby certify that I / we have taken steps to ensure that, in conformity with the provisions of clause 2.12.4 to clause 2.12.6 of the RFP Document, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice.

(d) We do not have any conflict of interest in accordance with Clause 2.12.7 of the RFP Document.

8. We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any Proposal that you may receive nor to invite the Bidders to submit Proposals for implementation of Intelligent Traffic Management System solutions in Jabalpur, without incurring any liability to the Bidders, in accordance with Cause 2.11.2 of the RFP Document.
9. We declare that we satisfy and meet the requirements as specified in the RFP Document and eligible to submit a Proposal in accordance with the terms of this RFP Document.
10. We certify that we have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority in any matter which could cast a doubt on our ability to undertake implementation of Intelligent Traffic Management System solutions in Jabalpur, which relates to a grave offence that outrages the moral sense of the community.
11. We further certify that in regard to matters relating to security and integrity of the India, we have not been charge-sheeted by any agency of the Government or convicted by a Court of Law for any offence committed by us.
12. We undertake that in case, due to any change in facts or circumstances during the Bidding Process, we become liable to be disqualified in terms of the provisions of disqualification, we shall intimate JSCL of the same immediately.
13. We hereby irrevocably waive any right which we may have at any stage at law or howsoever otherwise arising or accruing to challenge or question any decision taken by JSCL in connection with the selection of the Bidder, or in connection with the Bidding Process itself, in respect of the above mentioned implementation of Intelligent Traffic Management System solutions in Jabalpur and the terms thereof.
14. In the event of our being declared as the Successful Bidder, we agree to enter into a Master Service Agreement in accordance with the draft that has been provided to us as part of the RFP Document. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.
15. We have studied all the RFP Document /Bidding Documents carefully and also surveyed the requirements for ITMS solutions and related services and other matters mentioned in the Bidding Documents including in Clause 2.12.2 and 2.17.2 of the RFP Document). We understand that, except to the extent as expressly set forth in the Master Service Agreement, I/we shall have no claim, right or title arising out of any documents or information provided to us by JSCL or in respect of any matter arising out of or concerning or relating to the Bidding Process including the award of work.
16. We undertake that we have not been barred by any entity of GOI or JSCL or blacklisted by any state government or central government / department / agency in India from participating in Bidding Process as on the Proposal Due Date.
17. The Total Proposal Price have been quoted by us after taking into consideration all the terms and conditions stated in the RFP Document, draft Master Service Agreement, our own estimates of costs and after a careful assessment of the requirements, related services and all the conditions that may affect the Proposal.
18. We confirm having submitted the Bid Security of Rs. 50,00,000 (Rupees Fifty Lakhs only) to JSCL in accordance with the RFP Document. The Bid Security in the form of a Bank Guarantee/Demand Draft is attached. (strike out whichever is not applicable)

19. We agree and understand that the Proposal is subject to the provisions of the Bidding Documents. In no case, we shall have any claim or right of whatsoever nature if the contract is not awarded to us or our Proposal is not opened.
20. We undertake that none of the hardware/software/other component being proposed by us infringes on any patent or intellectual property rights as per the applicable laws.
21. We undertake that none of the hardware/software/other component being proposed by us is end-of-sale by the respective OEM at the time of submission of the Proposal or will be end-of-support by the respective OEM during the Contract Period.
22. We agree and undertake to abide by all the terms and conditions of the RFP Document.
23. We agree to keep our Proposal valid up to 180 days from Proposal Due Date.

Dated this ……..Day of ……., 2018.

Name of the Bidder …….

Signature of the Authorised Person …….

Name of the Authorised Person

# Appendix 3: Format for Pre-Qualification Checklist

| Sl. # | Compliance Criteria | Supporting Document required | Compliance (Yes/No) | Reference in the Technical Proposal (Section, Page no.) |
|---|---|---|---|---|
| 1. | RFP Document fees | Online receipt copy | | |
| 2. | Bid Security | Demand Draft OR<br>BG as per format in Appendix 11 | | |
| 3. | Details of Bidder(s) | As per Appendix 4 | | |
| 4. | Power of Attorney for Signing of Proposal | As per Appendix 5 | | |
| 5. | Power of Attorney for Lead Member (in case of a Consortium) | As per Appendix 6 | | |
| 6. | Format for Memorandum of Understanding for Consortium (in case of a Consortium) | As per Appendix 7 | | |
| 7. | Requirement Parameter – Legal entity | • Copy of Certificate of Incorporation / Registration under Companies Act, 1956/2013 or any equivalent foreign act, or partnership deed as applicable<br>• Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 6**<br>• In case of a Consortium, Memorandum of Understanding (MoU), as per the format provided under **Appendix 7**<br>• GST Registration Certificate.<br>• In case of foreign entity, an undertaking on GST registration, as applicable. | | |
| 8. | Requirement Parameter – Annual turnover | • Certificate from the Statutory Auditor clearly specifying the annual turnover for the specified years<br>• Audited and Certified copies of Balance Sheet and | | |

| Sl. # | Compliance Criteria | Supporting Document required | Compliance (Yes/No) | Reference in the Technical Proposal (Section, Page no.) |
|---|---|---|---|---|
| | | Profit/Loss Account of last 3 Financial Years last three (03) financial years, i.e. FY 2014-15, FY 2015-16 and FY 2016-17. | | |
| 9. | Requirement Parameter - Net worth | • Certificate from the Statutory Auditor clearly specifying the net worth of the firm as on 31 March 2017. | | |
| 10. | Requirement Parameter - Project Experience of Traffic Management as provided in PQ criteria | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br>AND<br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br>In case ongoing projects, only those projects will be considered where minimum 20 traffic signals with vehicle actuated signals have already been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** | | |
| 11. | Requirement Parameter - Project Experience of Traffic Enforcement - 1 as provided in PQ criteria | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to | | |

| Sl. # | Compliance Criteria | Supporting Document required | Compliance (Yes/No) | Reference in the Technical Proposal (Section, Page no.) |
|---|---|---|---|---|
| | | this project, Bill of Material and value of the contract/order.<br><br>AND<br><br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br><br>In case ongoing projects, only those projects will be considered where at least one of desired project component has been implemented.<br><br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work/contract value is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** | | |
| 12. | Requirement Parameter - Project Experience of Traffic Enforcement - 2 as provided in PQ criteria | 1. Work order/ Contract clearly highlighting the scope of work, solutions relevant to this project, Bill of Material and value of the contract/order.<br><br>AND<br><br>2. Completion Certificate issued & signed by the competent authority of the client entity on letterhead OR, Completion certificate certified by Chartered Accountant/Statutory Auditor.<br><br>In case ongoing projects, only those projects will be considered where at least | | |

| Sl. # | Compliance Criteria | Supporting Document required | Compliance (Yes/No) | Reference in the Technical Proposal (Section, Page no.) |
|---|---|---|---|---|
| | | one of desired project component for required no. of locations has been implemented.<br>In case of such ongoing project, a certificate from Chartered Accountant/ Statutory Auditor certifying that requisite work is complete. The format for Chartered Accountant/ Statutory Auditor certificate is provided in **Appendix 9.** | | |
| 13. | Requirement Parameter – Undertaking on Blacklisting | Affidavit certifying non-blacklisting as per format given in Appendix 10 - For Sole Bidder or All members of the Consortium, in case of a Consortium | | |

Note: Please note that in absence of above mentioned proofs/ documents/ not providing any information, Proposal may not be considered at all.

# Appendix 4: Format for Details of Bidder

**1. General Information**

(a) Name

(b) Country of incorporation/registration

(c) Address of the registered office, corporate headquarters, and its branch office/s, if any, in India

(d) Date of incorporation and/or commencement of business.

**2. Brief description of the Bidder including details of its main lines of business.**

**3. Details of individual/s who will serve as the point of contact / communication for JSCL:**

(a) Name :

(b) Designation :

(c) Company :

(d) Address :

(e) Telephone Number :

(f) E-Mail Address :

(g) Fax Number :

(h) Mobile Number :

**4. Name, Designation, Address and Phone Numbers of Authorised Signatory of the Bidder:**

(a) Name :

(b) Designation :

(c) Company :

(d) Address :

(e) Telephone Number :

(f) E-Mail Address :

(g) Fax Number :

(h) Mobile Number :

**5. In case of a Consortium:**

(a) the information above (1-4) should be provided for all the members of the consortium.

(b) information regarding role of each member should be provided as per table below:

| Sl. # | Name of Member | Role (Specify Lead Member / Other Member) |
|---|---|---|
| | | |
| | | |

# Appendix 5: Format for Power of Attorney for Signing of Proposal

(On Non – judicial stamp paper of appropriate value or such equivalent document duly attested by notary public)

**Power of Attorney**

Know all men by these presents, we …… (Name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms…… …… (name and residential address) who is presently employed with us and holding the position of …… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our Proposal for **Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur**, including signing and submission of all documents and providing information / responses to Jabalpur Smart City Limited ("JSCL"), representing us in all matters before JSCL, and generally dealing with JSCL in all matters in connection with our bid for the said contract

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

_____

(Signature)

(Name, Title and Address)

Accepted

…….. (Signature)

(Name, Title and Address of the Attorney)

Note:

- The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- In case the Proposal is signed by an authorised Director of the Bidder, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.

## Appendix 6: Format for Power of Attorney for Lead Member

(On Non – judicial stamp paper of appropriate value or such equivalent document duly attested by notary public)

**Power of Attorney**

Whereas Jabalpur Smart City Limited (JSCL), has invited Proposals from eligible entities for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESSETH THAT;

We, M/s. …… (Lead Member) and M/s …… (the respective names and addresses of the registered office) do hereby designate M/s. …… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Proposal, participating in conferences/meetings, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with JSCL, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Agreement is entered into with JSCL.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/ Consortium.

Dated this the ……Day of …….2018

……

(Executants)

(To be executed by all the members of the Consortium)

Notes:

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

# Appendix 7: Format for Memorandum of Understanding for Consortium

DRAFT MEMORANDUM OF UNDERSTANDING TO BE EXECUTED BY MEMBERS OF THE CONSORTIUM

[On Non-judicial stamp paper of appropriate value duly attested by notary public]

This Memorandum of Understanding (MoU) entered into this day of [Date] [Month] 2018 at [Place] among _____ _____ (hereinafter referred to as "_____") and having office at [Address], India, as Party of the First Part and _____ _____ (hereinafter referred as "_____") and having office at [Address], as Party of the Second Part and _____ _____ (hereinafter referred as "_____") and having office at [Address], as Party of the Third Part.

The parties are individually referred to as **Party** and collectively as **Parties**.

WHEREAS Jabalpur Smart City Limited (hereinafter referred to as "Purchaser") has issued a Request for Proposal dated [Date of Release of RFP] from the Applicants interested in RFP for Selection of System Integrator for Implementation of ITMS Solutions in Jabalpur for the Purchaser:

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

AS MUTUAL UNDERSTANDING OF THE PARTIES, IT IS HEREBY AGREED AND DECLARED AS FOLLOWS:

(a) The purpose of this Agreement is to define the principles of collaboration among the Parties to:

   i. Submit a response jointly to Bid for the "RFP for Selection of System Integrator for Implementation of ITMS Solutions in Jabalpur" as a Consortium.

   ii. Sign Contract in case of award.

   iii. Provide and perform the supplies and services which would be ordered by the Purchaser pursuant to the Contract.

(b) This Agreement shall not be construed as establishing or giving effect to any legal entity such as, but not limited to, a company, a partnership, etc. It shall relate solely towards the Purchaser for **"RFP for Selection of System Integrator for Implementation of ITMS Solutions in Jabalpur"** for and related execution works to be performed pursuant to the Contract and shall not extend to any other activities.

(c) The Parties shall be jointly and severally responsible and bound towards the Purchaser for the performance of the works in accordance with the terms and conditions of the BID document, and Contract.

(d) ---------- (Name of Party) shall act as Lead Member of the Consortium. As such, it shall act as the coordinator of the Party's combined activities and shall carry out the following functions:

i. To ensure the technical, commercial and administrative co-ordination of the work package(s)

ii. To lead the contract negotiations of the work package with the Purchaser.

iii. The Lead Member is authorized to receive instructions and incur liabilities for and on behalf of all Parties.

iv. In case of an award, act as channel of communication between the Purchaser and the Parties to execute the Contract

(e) That the Parties shall carry out all responsibilities as Developer in terms of the Project Agreement.

(f) That the broad roles and the responsibilities of each Party at each stage of the Bidding shall be as below:

Party A: _____

Party B: _____

Party C: _____

(g) That the Parties affirm that they shall implement the Project in good faith and shall take all necessary steps to see the Project through expeditiously.

(h) That this MoU shall be governed in accordance with the laws of India and courts in Jabalpur shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU duly executed on the date and year above mentioned.

(Party of the First Part) (Party of the Second Part) (Party of the Third Part)

Witness:

i. _____ ____

ii. _____ ____

# Appendix 8: Format for Project Citation by the Bidder

The details of projects executed by the Bidder:

| | |
|---|---|
| Name of the Project & Location | |
| Role of the Entity claiming experience for the Project | |
| Client's Name and Complete Address | |
| Narrative description of project, including no. of ITCS junctions/PA system/ RLVD/ANPR system and other major ITMS components as sought in the Criteria | |
| Contract Value for the bidder (in INR) | |
| No. of locations/junctions, as applicable, where the relevant project component has been implemented as on the Proposal Due Date | |
| Date of Start of Project | |
| Date of Completion of Project | |
| Activities undertaken by Lead Member or consortium member | |

*N.B - If the project is ongoing, bidder must clearly specify, the stages/phases/milestones and the no. of location/junctions which are completed and which are ongoing and at what stage of completion and produce a certificate as per the format provided in* ***Appendix – 9.***

(Copies of Work orders/Agreement/Client certificate/CA certificate etc. to be attached along with)

# Appendix 9: Format for Project Certificate by CA/Statutory Auditor

This is to certify that < Name of the Bidding entity > has been awarded with < Name of the Project > as detailed under:

| | |
|---|---|
| Name of the Project | |
| Role of the Entity claiming experience for the Project | |
| Client's Name, Contact no. and Complete Address | |
| Contract Value for the bidder (in INR) | |
| Current status of the project (Completed/Ongoing) | |
| Narrative description of project, including no. of ITCS junctions/PA system/ RLVD/ANPR system and other major ITMS components as sought in the Criteria | |
| No. of locations/junctions, as applicable, where the relevant project component has been implemented as on the Proposal Due Date | |
| Value of Work completed for which payment has been received from the client. | |
| Date of Start of Project | |
| Date of Completion of Project | |
| Activities undertaken by Lead Member or consortium member | |

Signature & Seal:

Name:

Designation:

Bidding entity's name

Address:

Date:

# Appendix 10: Format for Affidavit Certifying Non-Blacklisting

(On Non-Judicial stamp paper of appropriate value)

## Affidavit

I, M/s. ……..…., (the name and addresses of the registered office of the Bidder) hereby certify and confirm that we or any of our promoters/ directors are not barred or blacklisted by any state government or central government / department / agency in India from participating in projects, either individually or as member of a Consortium as on the ..... (Not earlier than 3 days prior to the Proposal Due Date).

We undertake that, in the event of us or any of our promoters/directors being blacklisted / barred at any time post the date of this affidavit, we shall intimate JSCL of such blacklisting.

We further confirm that we are aware that as per Clause 4.9.3 of the Request for Proposal for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur, our Proposal for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of the RFP Document at any stage of the Bidding Process or thereafter the Agreement will be liable for termination.

Dated this ……..Day of ……., 2018.

Name of the Bidder

…….

Signature of the Authorised Signatory

…….

Name of the Authorised Signatory

## Appendix 11: Format of Bid Security

**(ON BANK'S LETTER HEAD WITH ADHESIVE STAMP)**

To,

Executive Director

Jabalpur Smart City Limited,

Manas Bhawan, Wright Town,

Jabalpur, Madhya Pradesh - 482002

Bid No. _____ Date _____

KNOW ALL MEN by these present that we _____of _____ (Name and address of Bank) having our registered office at _____(hereinafter called "the Bank") are bound unto Executive Director, Jabalpur Smart City Limited (hereinafter called "JSCL" ) for the sum of Rs. _____ (Rupees _____ only) for which payment truly to be made to JSCL, the Bank hereby binds itself, its successors and assigns by these present.

Whereas..... (NAME OF BIDDER) has submitted its bid dated..... (date of submission of bid) for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur in terms of the Request for Proposal due on ---------- issued by JSCL, (hereinafter called "the Bid").

AND WHEREAS the Bidder is required to furnish a Bank Guarantee for the sum of Rs. 80,00,000 (Rupees Eighty Lakhs only).

AND WHEREAS_____ (Name of Bank) have, at the request of the Bidder, agreed to give this guarantee as hereinafter contained without demur.

1. We agree as follows:
   (a) That JSCL may without affecting this guarantee grant time of or other indulgence to or negotiate further with the Bidder in regard to the conditions contained in the said bid and thereby modify these conditions or add thereto any further conditions as may be mutually agreed upon between JSCL and the Bidder.
   (b) That the guarantee hereinbefore contained shall not be affected by any change in the constitution of our Bank or in the constitution of the Bidder.
   (c) That any demand made by JSCL shall be conclusive evidence against us of the amount due hereunder and shall not be questioned by us.
   (d) That this guarantee commences from the date hereof and shall remain in force till:

(e) the Bidder, in case his Proposal is accepted by JSCL, executes a Master Service Agreement after furnishing the Performance Security as per the provisions of the RFP Document; or

(f) 90 (ninety) days from the Proposal Validity Period

(g) That the expression 'the Bidder' and 'the Bank' herein used shall, unless such an interpretation is repugnant to the subject or context, include their respective successor and assigns.

2. The Conditions on this obligation as per RFP Document are:

(a) If the Bidder withdraws its Proposal except as provided in RFP Part 1 Clause 2.22.1 or

(b) If the Bidder modifies or withdraws its Proposal during the interval between the Proposal Due Date and expiration of the Proposal Validity Period; or

(c) If the Bidder fails to accept the LOA within the stipulated time period as provided in RFP Part 1 Clause 4.10.1; or

(d) If any information or document furnished by the Bidder turns out to be misleading or untrue in any material respect; or

(e) If a Bidder engages in a corrupt, fraudulent, coercive, undesirable or restrictive practice as specified in RFP Part 1 Clauses 2.12.4 to 2.12.6.

(f) If the Bidder, having been notified of the acceptance of his Proposal by JSCL, during the period of Proposal Validity Period:

i. fails or refuses to furnish the Performance Security in accordance with Instructions to Bidders and/or

ii. fails or refuses to enter into a Master Service Agreement within the time limit specified in the Instructions to Bidders.

We undertake to immediately pay to JSCL in Jabalpur the above amount upon receipt of its first written demand, without JSCL having to substantiate its demand, provided that, in its demand, JSCL will note that the amount as claimed by it is due to it owing to the occurrence of any one or more of the conditions mentioned above, specifying the occurred condition or conditions.

SIGNATURE OF _____

AUTHORISED OFFICIAL OF THE BANK

SIGNATURE OF THE WITNESS

_____,

NAME OF THE WITNESS

_____,

ADDRESS OF THE WITNESS

_____

NAME OF OFFICIAL_____

DESIGNATION_____

STAMP/SEAL OF THE BANK

## Appendix 12: Format for Technical Proposal Checklist

| Sl. # | Compliance Criteria | Supporting Documents | Compliance (Yes/No) | Reference in the Technical Proposal (Section & Page no.) |
|---|---|---|---|---|
| 1. | Project Citations and Self-certifications, as applicable | As per formats in Appendix 8 & 9, as applicable | | |
| 2. | Detailed proposed solution | As per format provided in Appendix 13 | | |
| 3. | Proposed CVs | As per format provided in Appendix 14 | | |
| 4. | Manufacturers'/Producers' Authorization Form | As per format provided in Appendix 15 | | |
| 5. | Compliance to Requirement (Technical / Functional Specifications) of proposed solutions | As per Appendix 20 | | |
| 6. | Unpriced BoQ with Make and Model no. including comple specifications and datasheets | As per Appendix 21 | | |
| 7. | No Deviation Certificate | As per Appendix 22 | | |
| 8. | Project Credential Summary ( as applicable) | As per Appendix 23 | | |

## Appendix 13: Structure of Proposed Solution

Bidders are required to provide a detailed approach & methodology to execute the entire project. Bidders are advised to comply with the below provided headers/Approach components while detailing out their solution.

| Sl. No. | Item |
|---|---|
| 1. | • Understanding of requirement and Implementation approach<br>• Understanding of requirements<br>• Project implementation approach or strategy and operations and maintenance plan including comprehensiveness of fall-back strategy and planning during rollout |
| 2. | • Proposed Solution<br>• Detailed description of ITMS solutions proposed & overall solution architecture<br>• Approach for distribution/sale/recharge of smart cards<br>• Hardware deployment and integration approach encompassing all solutions<br>• Unpriced BoQ with Make and Model no.( in line with Appendix 20)<br>• Specifications/Datasheets/Brochures of various components offered as part of solution |
| 3. | • Work Plan & its adequacy<br>• Timelines and modalities for implementation in a time bound manner |
| 4. | • Assessment of Manpower deployment, Training and Handholding plan<br>• Mobilization of resources<br>• Training and handholding strategy |

# Appendix 14: Curriculum Vitae (CV) Format

<table>
<tr><td>A</td><td colspan="3">Name of the Resource:</td></tr>
<tr><td>1.</td><td>Proposed position or role</td><td colspan="2">(only one candidate shall be nominated for each position)</td></tr>
<tr><td>2.</td><td>Date of Birth</td><td></td><td>Nationality</td><td></td></tr>
<tr><td>3.</td><td>Education</td><td colspan="2"><table><tr><th>Qualification</th><th>Name of School or College or University</th><th>Degree Obtained</th><th>Year of Passing</th></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>4.</td><td>Total years of experience</td><td colspan="2"></td></tr>
<tr><td>5.</td><td>Areas of Expertise and no. of years of experience in this area</td><td colspan="2">(as required for the Profile)</td></tr>
<tr><td>6.</td><td>Certifications and Trainings attended</td><td colspan="2"></td></tr>
<tr><td>7.</td><td>Employment Record</td><td colspan="2"><table><tr><th>Employer</th><th>Position</th><th>From</th><th>To</th></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table><br>[Starting with present position and last 2 firms, list in reverse order, giving for each employment: dates of employment, name of employing organization, positions held.]</td></tr>
</table>

| | | |
|---|---|---|
| 8. | Detailed Tasks Assigned | (List all tasks to be performed under this project) |
| 9. | Relevant Work Undertaken that Best Illustrates the experience as required for the Role*)* | |

| Project 1 | |
|---|---|
| Name of assignment | |
| Year | |
| Location | |
| Employer | |
| Main project features | |
| Position held | |
| Activities performed | |
| **Project 2** | |
| Name of assignment | |
| Year | |
| Location | |
| Employer | |
| Main project features | |
| Position held | |
| Activities performed | |

N.B:

*Relevant project experience as per requirement of the proposed position must be specifically mentioned.*

## Appendix 15: Manufacturer's Authorisation Form

(This form has to be provided by the OEMs proposed. This letter of authority should be on the letterhead of the manufacturer and should be signed by a person having competent Authority)

Date:

To,
Executive Director
Jabalpur Smart City Limited,
Manas Bhawan, Wright Town,
Jabalpur, Madhya Pradesh – 482002

**Subject: Manufacturer's Authorization Form**

Ref: RFP No. <<…..>> dated << …..>>

Dear Sir,

We_____ (Name of the Manufacturer) who are established and reputable manufacturers of _____ (List of Goods) having factories or product development centers at the locations _____ or as per list attached, do hereby authorize. _____ (Name and address of the Bidder) to bid, negotiate and conclude the contract with you against RFP No. _____Dated _____for the above goods manufactured by us.

We hereby extend, our warranty/ maintenance support for the hardware goods supplied by the bidder against this invitation for bid by _____ (Name of the Bidder) as per requirements of this RFP.

We hereby declare that we are in the business of the product(s) or technology(ies) as quoted/proposed for at least 3 years as on the date of release of the RFP.

We hereby confirm that we have authorized presence in India either directly or through channel partner(s) as on the date of release of RFP.

We declare that declare that that product(s) or technology(ies) quoted/proposed shall not reach end-of-life for a minimum of 3 years from the date of Last Date of Bid Submission and end of support for minimum of 3 years from the date of Go-Live.*(For all active components only)*

We, hereby declare that we either have existing capability and infrastructure to provide 24x7 technical support in India across the year. *OR* We, hereby declare to provide an undertaking that they would establish the requisite infrastructure and capability to provide 24x7 technical support in India, on emerging a winner in this bidding process. *(Strike out whichever not applicable)* within 3 months of date of issue of Letter of Award.

We hereby confirm that we have minimum installation base of at least 50 RLVD, ANPR and SVD cameras in India/Globe in the last 3 years. *(Applicable for OEM for RLVD, ANPR and SVD cameras only)*

Thanking you,

Yours faithfully,

(Signature)

For and on behalf of: _____ (Name of the Manufacturer)

Authorised Signatory
Name:
Designation:
Place:
Date:

## Appendix 16: Format of Price Proposal

Date: _____

To,

Executive Director

Jabalpur Smart City Limited,

Manas Bhawan, Wright Town,

Jabalpur, Madhya Pradesh – 482002

Sub: Proposal for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur

Dear Sir,

We _____herewith submit Price Proposal for selection of our firm as a System Integrator for Implementation of Intelligent Traffic Management System solutions in Jabalpur, as per terms and conditions of RFP dated _____ issued by Jabalpur Smart City Limited.

The **Total Proposal Price,** inclusive of taxes as given in Appendix 16A for carrying out the entire scope of work, will be Rs. _____ (in words ----------) during the contract (subject to revision in Appendix 16A and 16B).

Name of Authorised Signatory

Signature of Authorised Signatory (With Stamp of the Bidder)

Business Address: _____

_____

Place: _____

Date: _____

# Appendix 16A: Format of Break- Up of Price Proposal

The Bidder shall quote its prices in the formats as given below:

## A. Total Price Summary

| Sl # | Head | Amount (in Rs.) | Amount (in words) |
|---|---|---|---|
| 1. | Total CAPEX price<br>(Inclusive of GST, levies etc. as applicable) | | |
| 2. | Total OPEX price<br>(Inclusive of GST, levies etc. as applicable) | | |
| **3.** | **Total Price Proposal (1+2)**<br>**(Inclusive of GST, levies etc. as applicable)** | | |

(a) The total price for the purpose of evaluation of Proposals will be the Total Proposal Price, as per above.

**(b) The total CAPEX price shall not be more than 70% of the Total Proposal Price.**

### B. Price Component for CAPEX

| Sl. # | Description | Unit | Quantity | Unit Rate (in Rs.) | Unit GST (in Rs.) | Total CAPEX Price (in Rs.) |
|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) = (1) X (2) + (1) X (3) |
| **A.** | **TRAFFIC MANAGEMENT COMPONENTS** | | | | | |
| 1. | Supply, installation and commissioning for Intelligent Traffic Control System (ITCS) for a T-Junction with complete hardware including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | Junction | 7 | | | |
| 2. | Supply, installation and commissioning for Intelligent Traffic Control System (ITCS) for a 4-arm Junction with complete hardware including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | Junction | 9 | | | |
| 3. | Supply, installation and commissioning for Intelligent Traffic Control System (ITCS) for a 5-arm Junction with complete hardware including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | Junction | 1 | | | |
| 4. | Supply, installation and commissioning of PA system with complete hardware and accessories | Location | 17 | | | |

| Sl. # | Description | Unit | Quantity | Unit Rate (in Rs.) | Unit GST (in Rs.) | Total CAPEX Price (in Rs.) |
|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) = (1) X (2) + (1) X (3) |
| 5. | Supply, installation and commissioning for Traffic Junction Surveillance System, with complete hardware including cameras, accessories etc. as required | Location | 17 | | | |
| 6. | PA system software application | License | 1 | | | |
| 7. | Traffic Junction Surveillance (software with licenses) | License | 17 | | | |
| 8. | PTZ camera | No. | 3 | | | |
| 9. | Any other line items as per proposed solution of Bidder.<br>Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | |
| 10. | Additional item 1, if any | | | | | |
| 11. | Additional item 2, if any and so on | | | | | |
| **B** | **TRAFFIC ENFORCEMENT COMPONENTS** | | | | | |
| 1. | Supply, installation and commissioning of Red Light Violation Detection (RLVD) System with complete hardware including ANPR cameras, Overview Cameras, Local Processing Unit, with cabling, accessories & mounting infrastructure as required | Location | 17 | | | |

| Sl. # | Description | Unit | Quantity | Unit Rate (in Rs.) | Unit GST (in Rs.) | Total CAPEX Price (in Rs.) |
|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) = (1) X (2) + (1) X (3) |
| | (For 17 Junctions and 90 lanes) | | | | | |
| 2. | Supply, installation and commissioning of ANPR system with complete hardware and accessories as required | Location | 3 | | | |
| 3. | Supply, installation and commissioning of Speed Violation Detection System with complete sub-components including ANPR camera, wide angle evidence camera, IR illuminator, non-intrusive speed sensor, with cabling, accessories & mounting infrastructure as required | Location | 5 | | | |
| 4. | RLVD Software with licenses | Location | 17 | | | |
| 5. | ANPR Software with licenses | Location | 3 | | | |
| 6. | SVD Software with licenses | Location | 5 | | | |
| 7. | E-Challan Application Development/Customization Cost including Payment Portal Development Cost, Payment Gateway integration Cost and other software (if any) | No. | 1 | | | |
| 8. | Any other line items as per proposed solution of Bidder. | | | | | |

| Sl. # | Description | Unit | Quantity | Unit Rate (in Rs.) | Unit GST (in Rs.) | Total CAPEX Price (in Rs.) |
|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) = (1) X (2) + (1) X (3) |
| | Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | |
| 9. | Additional item 1, if any | | | | | |
| 10. | Additional item 2, if any and so on | | | | | |
| **C** | **TRAFFIC CONTROL CENTER (TCC) AND DATA CENTER (DC)** | | | | | |
| 1. | Video Wall Cube - 70” in 6X2 matrix | Cube | 12 | | | |
| 2. | Video Wall Controller & Application | No. | 1 | | | |
| 3. | Monitoring Workstations with 3 Monitors for TCC with UPS | No. | 10 | | | |
| 4. | Network Printers (MFC) | No. | 2 | | | |
| 5. | Local Printer | Set | 1 | | | |
| 6. | Video Conferencing Solution | Set | 1 | | | |
| 7. | I.P Phones | No. | 5 | | | |
| 8. | Managed Switch -48 Ports | No. | 2 | | | |

| Sl. # | Description | Unit | Quantity | Unit Rate (in Rs.) | Unit GST (in Rs.) | Total CAPEX Price (in Rs.) |
|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) = (1) X (2) + (1) X (3) |
| 9. | Civil Work (Masonry work, Flooring, Ceiling, Partitioning Work, Office Workstations, Furniture and Fixtures) | LS | 1 | | | |
| 10. | Electrical Cabling & Necessary Illumination Devices | LS | 1 | | | |
| 11. | Fire Safety System with alarms | LS | 1 | | | |
| 12. | Access Control System (RFID/Proximity based, for all staff) | LS | 1 | | | |
| 13. | Air Conditioning | LS | 1 | | | |
| 14. | DG Set as per requirement | LS | 1 | | | |
| 15. | Rodent Repellent system | Set | 1 | | | |
| 16. | Video Management System | License | 17 | | | |
| 17. | Enterprise Management System (including SLA Management, Helpdesk Management, Network Management, etc.) | No. | 1 | | | |
| 18. | Data Center IT Infrastructure including servers, storage, OS, RDBMS, back-up solution, IPS/IDS, firewall, networking equipment etc. | LS | 1 | | | |

| Sl. # | Description | Unit | Quantity | Unit Rate (in Rs.) | Unit GST (in Rs.) | Total CAPEX Price (in Rs.) |
|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) = (1) X (2) + (1) X (3) |
| 19. | Any other line items as per proposed solution of Bidder.<br>Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | |
| 20. | Additional item 1, if any | | | | | |
| 21. | Additional item 2, if any and so on | | | | | |
| **D** | **CAPACITY BUILDING & TRAINING** | | | | | |
| 1. | Functional training - For Traffic Management and Traffic Enforcement solutions<br>(Average Batch size 10-20 trainee) | Training Day | 4 | | | |
| 2. | Administrative Training - For Traffic Management and Traffic Enforcement solutions<br>(Average Batch size 10-20 trainee) | Training Day | 4 | | | |
| **F** | **TECHNICAL MANPOWER** | | | | | |
| 1. | Project Management Support during Implementation phase | LS | 1 | | | |
| | Any other line items as per proposed solution of Bidder. | | | | | |

| Sl. # | Description | Unit | Quantity | Unit Rate (in Rs.) | Unit GST (in Rs.) | Total CAPEX Price (in Rs.) |
|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) = (1) X (2) + (1) X (3) |
| | Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | |
| | Additional item 1, if any | | | | | |
| | Additional item 2, if any and so on | | | | | |
| **TOTAL CAPEX PRICE** | | | | | | |

Note: The quantities given above are for the purpose of evaluation of price proposals only. JSCL may change the quantities of any components at the time of signing of the Contract or any time during the Contract Period.

## C. Price Component for OPEX

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| A | Traffic Management Components | | | | | | | | | | | | |
| 1. | Intelligent Traffic Control System (ITCS) for a T-Junction with complete hardware including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. | Junction | 7 | | | | | | | | | | |
| 2. | Intelligent Traffic Control System (ITCS) for a 4-arm Junction with | Junction | 9 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | complete hardware including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | | | | | | | | | | | | |
| 3. | Intelligent Traffic Control System (ITCS) for a 5-arm Junction with complete hardware including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | Junction | 1 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| 4. | PA system with complete hardware and accessories | Location | 17 | | | | | | | | | | |
| 5. | Traffic Surveillance system including cameras and other equipment, cameras, mounting infrastructure, accessories etc. | Location | 17 | | | | | | | | | | |
| 6. | PA system software application | License | 1 | | | | | | | | | | |
| 7. | Software application for Traffic Analysis System | License | 17 | | | | | | | | | | |
| 8. | Any other line items as per | | | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | proposed solution of Bidder.<br>Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | | | | | | | | |
| 9. | Additional item 1, if any | | | | | | | | | | | | |
| 10. | Additional item 2, if any and so on | | | | | | | | | | | | |
| B. | Traffic Enforcement Components | | | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| 1. | Red Light Violation Detection (RLVD) System with complete hardware including ANPR cameras, Overview Cameras, Local Processing Unit, with cabling, accessories & mounting infrastructure as required | Location | 17 | | | | | | | | | | |
| 2. | ANPR system with complete hardware and accessories as required | Location | 3 | | | | | | | | | | |
| 3. | Speed Violation Detection System with complete sub-components including ANPR camera, wide | Location | 5 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | angle evidence camera, IR illuminator, non-intrusive speed sensor, with cabling, accessories & mounting infrastructure as required | | | | | | | | | | | | |
| 4. | RLVD Software with licenses | Licenses | 17 | | | | | | | | | | |
| 5. | ANPR Software with licenses | License | 3 | | | | | | | | | | |
| 6. | SVD Software with licenses | License | 5 | | | | | | | | | | |
| 7. | E-Challan Application | No. | 1 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | Development/Customization Cost including Payment Portal Development Cost, Payment Gateway integration Cost and other software (if any) | | | | | | | | | | | | |
| 8. | Any other line items as per proposed solution of Bidder.<br>Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | | | | | | | | |
| 9. | Additional item 1, if any | | | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| 10. | Additional item 2, if any and so on | | | | | | | | | | | | |
| C. | Traffic Control Center and Data Center | | | | | | | | | | | | |
| 1. | Video Wall Cube - 70” in 6X2 matrix | Cube | 12 | | | | | | | | | | |
| 2. | Video Wall Controller & Application | No. | 1 | | | | | | | | | | |
| 3. | Monitoring Workstations with 3 Monitors for TCC with UPS | No. | 10 | | | | | | | | | | |
| 4. | Network Printers (MFC | No. | 2 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| 5. | Local Printer | Set | 1 | | | | | | | | | | |
| 6. | Video Conferencing Solution | Set | 1 | | | | | | | | | | |
| 7. | I.P Phones | No. | 5 | | | | | | | | | | |
| 8. | Managed Switch - 48 Ports | No. | 2 | | | | | | | | | | |
| 9. | Electrical Cabling & Necessary Illumination Devices | LS | 1 | | | | | | | | | | |
| 10. | Fire Safety System with alarms | LS | 1 | | | | | | | | | | |
| 11. | Access Control System (RFID/Proximity based, for all staff) | LS | 1 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| 12. | Air Conditioning | LS | 1 | | | | | | | | | | |
| 13. | DG Set as per requirement | LS | 1 | | | | | | | | | | |
| 14. | Rodent Repellent system | Set | 1 | | | | | | | | | | |
| 15. | Video Management System | License | 11 | | | | | | | | | | |
| 16. | Enterprise Management System (including SLA Management, Helpdesk Management, Network Management, etc.) | No. | 1 | | | | | | | | | | |
| 17. | Any other line items as per proposed solution of Bidder. | | | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | | | | | | | | |
| 18. | Additional item 1, if any | | | | | | | | | | | | |
| 19. | Additional item 2, if any and so on | | | | | | | | | | | | |
| 20. | Data Center IT Infrastructure including servers, storage, OS, RDBMS, back-up solution, IPS/IDS, firewall, networking equipment etc.<br><br>**Bidder to provide complete details of DC IT infrastructure** | LS | As per proposed solution of Bidder | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | **proposed including quantities, unit rates and total price for each component.** | | | | | | | | | | | | |
| **D.** | **Connectivity** | | | | | | | | | | | | |
| 1 | Connectivity for junctions with ITCS, PA system, Traffic Junction Surveillance System, RLVD System - Annual charges (Min. Bandwidth Requirement – 12 Mbps per junction) | No. | 17 | | | | | | | | | | |
| 2 | Connectivity for ANPR system - Annual charges | No. | 3 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | (Min. Bandwidth Requirement - 4 Mbps per location) | | | | | | | | | | | | |
| 3 | Connectivity for SVD system - Annual charges<br>(Min. Bandwidth Requirement - 4 Mbps per location) | No. | 5 | | | | | | | | | | |
| 4 | Internet Leased line connectivity for Data Center & TCC - Annual charges<br>(Min. Bandwidth Requirement – 100 Mbps).<br>Actual bandwidth required to be estimated by Bidder and same | No. | 1 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | shall be clearly specified in the Technical proposal. | | | | | | | | | | | | |
| **E.** | **Technical & Operational management manpower** | | | | | | | | | | | | |
| 1. | Project Manager – 1 onsite resource during O&M phase | Man-months | 12 | | | | | | | | | | |
| 2. | TCC Operators (O&M Phase) For 15 operators | Man-months | 180 | | | | | | | | | | |
| 3. | Operation Management, including ITMS | LS | 1 | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | operations, Data Center operations, etc. | | | | | | | | | | | | |
| 4. | Stationery & Printing of e-challan – Average Annual charges | No. | 3,60,000 | | | | | | | | | | |
| 5. | Dispatch charges for e-Challan – Average annual charges | No. | 3,60,000 | | | | | | | | | | |
| | Any other line items as per proposed solution of Bidder.<br>Bidder to include each line item separately with quantity proposed, unit rate and total prices. | | | | | | | | | | | | |

| Sl. # | Description | Unit | Qty | Year 1 | | | Year 2 | | | Year 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 1 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 2 (in Rs.) | Unit Rate (in Rs.) | Unit GST (in Rs.) | OPEX Year 3 (in Rs.) | Total OPEX for 3 years inclusive of GST, as applicable (in Rs.) |
| | | 1 | 2 | 3 | 4 | 5 = 2X(3+4) | 6 | 7 | 8 =2X(6+7) | 9 | 10 | 11= 2X(9+10) | 12= 5+8+11 |
| | Additional item 1, if any | | | | | | | | | | | | |
| | Additional item 2, if any and so on | | | | | | | | | | | | |
| **TOTAL OPEX PRICE** | | | | | | | | | | | | | |

Note: The quantities given above are for the purpose of evaluation of price bids only. JSCL may change the quantities of any components at the time of signing of the Contract or any time during the Contract Period.

Signature of Bidder (With Stamp of the Bidder)

Name: _____

Business Address: _____

Place: _____

# Appendix 16B: Detailed Break- Up for ITMS Solutions

The Bidders are required to indicate the break-up of unit prices of ITMS solutions as quoted, including complete hardware, equipment/components, accessories, mounting structure etc. in the table below

**These prices will NOT be used for evaluation purposes.**

The unit prices of all major line items, such as camera, controller, junction box, mounting structure, installation charges etc. for each solutions should be provided as per the table below:

| Sl. # | Component Description/Line items | Unit Rate (in Rs.) | GST (in Rs) | Unit Rate with GST (in Rs.) |
|---|---|---|---|---|
| **A.** | **ITCS** | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |
| n | | | | |
| **B.** | **PA system** | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |
| n | | | | |
| **C.** | **Traffic Junction Surveillance system** | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |
| n | | | | |
| **D.** | **RLVD system** | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |
| n | | | | |
| **E.** | **ANPR system** | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |
| n | | | | |
| **F.** | **SVD system** | | | |

| Sl. # | Component Description/Line items | Unit Rate (in Rs.) | GST (in Rs) | Unit Rate with GST (in Rs.) |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |
| n | | | | |
| G. | **Data Center** | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | | | | |
| n | | | | |
| H. | **Other Line items** | | | |
| 1. | PTZ camera | | | |
| 2. | Fixed Box camera | | | |
| 3. | | | | |
| 4. | | | | |

# Appendix 17 Format for Draft Letter of Award (To be issued by JSCL)

Date:

To,

Authorised Signatory of the Successful Bidder

Dear Mr. _____ _____,

Subject: Letter of Award for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur

1. This is in reference to the Proposal submitted by _____ {Name of Successful Bidder} ("SB") in response to the Request for Proposal ("RFP") Document (along with the amendments made thereafter) released by Jabalpur Smart City Limited ("JSCL") on _____ {date of release of RFP Document}.
2. The aforesaid Proposal was considered and evaluated by JSCL for this purpose.
3. Further, subsequent discussions were held with you on _____ and the summary of such discussions is set out in the enclosure/s. {To be inserted where such discussions have been held}
4. JSCL is now pleased to inform that..... (Name of the Successful Bidder) has been selected as the Successful Bidder (SB) for the subject contract.
5. This letter is intended to convey JSCL's acceptance, subject to the terms & conditions specified in the RFP Document and conditions set out in the Master Service Agreement to be executed within fifteen (15) days from the date of this letter, of the Proposal submitted by SB, wherein SB has quoted a Total Price Proposal of Rs _____ (Rupees _____)
6. As a token of your acknowledgment of this letter, you are hereby requested to return a copy of the same to us, duly signed by the authorized signatory, within seven (7) days from the date of this letter.
7. Further, you are also requested to comply, within fifteen (15) days from the date of receipt of this Letter of Award, with the conditions set out below:
   (a) Furnish a Performance Security from a nationalized Bank of a sum of Rs..... (Rupee ..... only), in terms of the draft Master Service Agreement;
   (b) Execution of the Master Service Agreement.
8. Kindly note that this communication by itself does not create any rights or contractual relationship with JSCL. Any such right or relationship shall come into effect upon complying with conditions set out in Para 7 and the execution of Master Service Agreement.

Yours truly,

## Appendix 18: Format of Acknowledgement of Letter of Award

(To be issued submitted by Successful Bidder to JSCL)

On the Letter Head of the Bidder

Date: (Within seven (7) days of date of LOA)

To,

Executive Director

Jabalpur Smart City Limited,

Manas Bhawan, Wright Town,

Jabalpur, Madhya Pradesh – 482002

Subject: Letter of Award for Selection of System Integrator for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur

We are pleased to acknowledge the Letter of Award issued by JSCL vide their letter Ref. dated..... for Implementation of Intelligent Traffic Management System (ITMS) Solutions in Jabalpur.

We have reviewed the aforesaid Letter of Award and are enclosing herewith a copy of the Letter of Award duly acknowledged in acceptance of the conditions and undertake to comply with the following within fifteen (15) days of the date of the LOA:

1. Execute the Master Service Agreement
2. Furnish a Performance Security of the amount of Rs…….. as per the terms of the Master Service Agreement

…….

Name of Successful Bidder

…….

Signature of the Authorised Person

…….

Name of the Authorised Person

# Appendix 19: Draft Master Service Agreement

This agreement ("Agreement") is entered into on the _____ day of _____*(Month)*, Two Thousand and Eighteen,

BETWEEN

**Jabalpur Smart City Limited**, having its registered office at Jabalpur Smart City Limited, Smart City Office, Manas Bhawan, Wright Town, Jabalpur , Madhya Pradesh, 482002, India (hereinafter referred to as "**JSCL**" which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and permitted assigns) of the **First Part**;

AND

_____, a company registered under the _____, having its registered office at _____ (hereinafter referred to as "**ITMS System Integrator**" which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and permitted assigns) of the **Second Part**.

WHEREAS

A. JSCL intends to implement Intelligent Traffic Management System solutions in Jabalpur;

B. JSCL had invited proposals for Implementation of Intelligent Traffic Management System solutions in Jabalpur, vide Request for Proposal ("RFP") dated _____;

C. M/s _____, among others, had submitted its proposal in response to the aforesaid RFP and emerged as Successful Bidder after evaluation of proposals, as per the procedure specified in the RFP;

D. JSCL has accepted the proposal of M/s _____ ("ITMS System Integrator") and has issued Letter of Acceptance dated _____ in favour of the ITMS System Integrator;

E. The Parties have now agreed to enter into this Agreement to record their entire understanding with regard to the subject matter hereof, subject to and on the terms and conditions set forth hereinafter.

**NOW, THEREFORE**, the Parties hereby agree as follows:

# 1. Article 1 – Definitions

1.1. **Definitions:**

In this Agreement, the following words and expressions shall have the meaning hereinafter respectively ascribed to them hereunder:

**"Agreement"** or **"Contract"** shall mean this agreement including the Appendices hereto and any amendments made thereto in accordance with the provisions contained in this agreement.

**"Agreement Date"** shall mean the date of signing of this Agreement by the Parties.

"**Applicable Laws**" shall mean all laws, promulgated or brought into force and effect by the Government of India and/or Government of Madhya Pradesh including regulations and rules, notifications made thereunder, and any judgments, decrees, injunctions, writs and orders of any court of record, as may be in force and effect during the subsistence of this Agreement.

**"AMC Charges"** shall mean the charges specified in Schedule C, payable to the ITMS System Integrator for discharging its AMC Services in accordance with this Agreement.

**"Contract Period"** shall have the meaning ascribed to the term in Article 3 of this Agreement.

"**Cure Period**" shall mean period of 60 (Sixty) days or such further period as may be allowed by the aggrieved Party to the Party in breach of this Agreement for curing the breach and shall commence from the date on which a notice is delivered by the aggrieved Party to the Party in breach asking the latter to cure the breach(s) specified in such notice.

"**Default Charges**" shall have the meaning ascribed thereto in Article

**"Device & Software IP"** shall have the meaning ascribed to the term in Article 4.1 (c) of this Agreement.

**"Encumbrances"** shall mean any encumbrances such as mortgage, charge, pledge, lien, hypothecation, security interest, assignment, privilege or priority of any kind having the effect of security or other such obligations and shall include without limitation any designation of loss payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Agreement.

**"Expiry"** shall mean the expiry of the Agreement by efflux of time.

**"Expiry Date"** shall mean date on which this Agreement expires by efflux of time.

**"Firmware**" shall mean a set of coded instructions embedded within a Device or component of a Device that performs functions or provides data to enable the Device to operate in a specified manner.

"**GOI**" shall mean Government of India.

"**GoMP**" shall mean the Government of Madhya Pradesh.

**"Go-Live"** shall mean

i. Successful deployment, commissioning and UAT of the ITMS application modules implemented

ii. Procurement, deployment and commissioning of the hardware items and desired connectivity at the identified locations required to support the functioning of ITMS modules

iii. Acceptance/Sign-off from Purchaser or its constituted committees or representatives

"**Governmental Agency**" shall mean GOI, GoMP or any Ministry, Department, Commission, Board, JSCL, instrumentality or agency, under the control of GOI or GOM having jurisdiction over all or any part of the Project or the performance of all or any of the services or obligations of Parties under or pursuant to this Agreement.

**"INR, Re. or Rs."** shall mean the lawful currency of the Republic of India.

**"Intellectual Property"** or **"IP"** shall mean any and all industrial and intellectual property rights of whatever nature, in India and throughout the world, whether registrable or not, and whether now known or devised in the future, including rights in respect of or in connection with:

(a) patents, copyright, registered or unregistered trademarks or service marks, trade names, business names, brand names, indications of source or appellations of origin, designs and commercial names and designations, circuit layouts and database rights;

(b) ideas, processes, methodologies, concepts, techniques, inventions, discoveries, trade secrets, know-how, confidential information and scientific, technical and product information; and

(c) any rights to apply for or renew the registration of any such rights.

"**ITMS Solutions**" or "**ITMS Components"** shall mean the intelligent traffic management system solutions or components as described in Section 2 of RFP Part 2.

**"ITMS System Integrator"** shall mean the entity selected by JSCL for implementation, operation and maintenance of the Project pursuant to competitive bidding process.

"**ITMS System Integrator's Event of Default**" shall have the meaning ascribed to the term in Article 8.1 of this Agreement.

**"Material Adverse Effect"** shall mean, when used in connection with a Party to this Agreement,, any change or effect that is materially adverse to the business, financial condition or results of operations of such entity and its Affiliates, taken as a whole. For the purposes of this definition, "Affiliates" shall mean any company, existing now or in the future, owning or owned by, either directly or indirectly, or controlling, controlled by or under common control with either Party.

**"Project"** shall mean Implementation of Intelligent Traffic Management System solutions in Jabalpur including maintenance and other incidental activities relating to the ITMS solutions

"**Request for Proposal**" or "**RFP**" shall mean the request for proposal document dated _____ issued by JSCL for Implementation of Intelligent Traffic Management System solutions in Jabalpur.

**"Site"** shall mean the sites where any aspect of the Scope of Services is discharged.

**"ITMS Application"** shall mean the applications, the operating system and associated components to be developed for ITMS components as described in RFP Document by or on behalf of the ITMS System Integrator in terms of this Agreement.

**"Software"** shall mean a set of coded instructions that performs functions or provides working data or parameters to enable a device or system to operate in a specified manner, and be loaded into a system or device dynamically by a user and includes all

Firmware and operating systems required by a system or subsystem to perform in a specified manner.

**"Source Code"** shall mean each item of the Software, expressed in human readable language which is reasonably necessary for understanding, maintaining, correcting and enhancing each such item.

"**Scope of Work**" or **"Scope of Services"** shall have the meaning ascribed to the term in Article 2.3 of this Agreement.

**"Standards of Performance"** shall mean the minimum standards to be adhered to by ITMS System Integrator, as set out in Schedule E during the Contract Period.

**"Payments to ITMS System Integrator"** shall mean the payment charges specified in Schedule C, payable to the ITMS System Integrator for Implementation and Operation and Maintenance of Intelligent Traffic Management System solutions in Jabalpur in accordance with this Agreement.

**"Technical Proposal"** shall mean the technical proposal submitted by the ITMS System Integrator as a part of the RFP process.

**"Technical Specification"** shall mean the specifications of Hardware/Software items and Software specified in RFP Part 2.

**"Termination"** shall mean the termination of this Agreement prior to the expiry of the Contract Period in accordance with the provisions of the Agreement.

**"Termination Date"** shall mean the effective date of Termination as mentioned and contained in the Termination Notice in accordance with the provisions of Article 8.4.

**"Termination Notice"** shall mean the communication issued in accordance with this Agreement by any one Party to the other Party terminating this Agreement.

1.2. **Interpretations**

In this Agreement, unless the context otherwise requires,

(a) the words importing singular shall include plural and vice versa;

(b) the headings are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement;

(c) the words "include" and "including" are to be construed without limitation;

(d) any reference to day, month or year shall mean a reference to a calendar day, calendar month or calendar year respectively;

(e) In case of ambiguities or discrepancies in this Agreement, the following shall apply, unless otherwise decided by JSCL:

i. between two Articles of this Agreement, the provisions of specific Articles relevant to the issue under consideration shall prevail over those in other Articles;

ii. between the Articles/Clauses and the Schedules, the Articles/Clauses shall prevail;

between any value written in numerals and that in words, the latter shall prevail.

# 2. Article 2 – Award of Contract & Scope of Work

2.1. Subject to and in accordance with the terms and conditions set forth in this Agreement, JSCL hereby awards the Contract to ITMS System Integrator and the ITMS System Integrator hereby accepts the award.

2.2. Subject to and in accordance with the terms and conditions set forth in this Agreement, ITMS System Integrator shall be obliged to undertake the following in accordance with the Applicable Laws and the Applicable Permits:

(a) Discharge services as set forth in Article 2.3 during the Contract Period; and

(b) Perform and fulfil all of ITMS System Integrator's obligations in accordance with this Agreement.

2.3. **Scope of Work**

Subject to and in accordance with the terms and conditions set forth in this Agreement, ITMS System Integrator accepts and agrees to provide the services as set out in Schedule A ("Scope of Work") and elsewhere envisaged under this Agreement.

2.4. **Change of Scope**

JSCL may require ITMS System Integrator to undertake additional works including but not limited to upgrading the hardware etc. and to provide services which are beyond the Scope of Work as contemplated and provided for in this Agreement ("Additional Work"). In the event JSCL requires ITMS System Integrator to carry out Additional Work, ITMS System Integrator shall in the first instance submit to JSCL the charges that it proposes for undertaking such Additional Work along with other terms and conditions, if any. The ITMS System Integrator shall carry out the Additional Work in accordance with the terms and conditions mutually agreed upon.

Notwithstanding the above, it is clarified that any incidental activities/components required for implementation of Scope of Work will have to be carried out by ITMS System Integrator at no extra cost.

# 3. Article 3 - Contract Period

3.1. This Agreement shall come into effect on execution hereof and, unless terminated earlier or extended in accordance with the provisions hereof, shall be valid for a period up to five years from the date of Go-Live;

Provided that in the event of the Contract being extended beyond the aforesaid period in accordance with the provisions hereof, the Contract Period shall include the period/ aggregate period by which the Contract is so extended;

Provided further that in the event of Termination, the Contract Period shall mean and be limited to the period commencing from the Agreement Date and ending on the Termination Date.

The Contract may be renewed by JSCL, at its sole and absolute discretion, on mutually agreed terms and conditions.

# 4. Article 4 – Obligations of Parties

## 4.1. Obligations of ITMS System Integrator

ITMS System Integrator shall observe, undertake, comply with and perform, in addition to and not in derogation of its obligations elsewhere set out in this Agreement, the obligations set forth in this Article:

(a) To perform the Scope of Work as set out in Article 2, for implementing the System;

(b) To be responsible for compliance with Applicable Laws;

(c) To procure, as required, the appropriate proprietary rights, licences, agreements and permissions for, *inter alia*, materials, methods, processes, software, operating systems, designs, trademarks, documents and systems used or incorporated into the ITMS Components such as ITCS components, cameras and ITMS Applications ("**Device & Software IP**");

(d) The ITMS System Integrator shall grant to JSCL, a non-exclusive, irrevocable, perpetual and royalty-free right to use the Device & Software IP for the Project, commencing on the Agreement Date or on the date the same get supplied by ITMS System Integrator, whichever is earlier.

(e) To provide Performance Security in the form of Bank Guarantee to JSCL, in accordance with Article 7;

(f) To carry out its obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and to observe sound management practices, and employ appropriate advanced technology and safe and effective equipment, machinery, materials and methods;

(g) To provide onsite support for the ITMS solutions;

(h) To provide necessary information and reports including those pertaining to problems relating to ITMS Components to JSCL and the entities authorised by JSCL;

(i) To be responsible and liable for the security of the ITMS Components during the Contract Period. The ITMS System Integrator shall bear the costs of repair or replacement of ITMS Components;

(j) To reasonably cooperate with JSCL and other stakeholders concerned in relation to the matters covered under this Agreement; and

(k) Any service agreement or sub-contract by the ITMS System Integrator may be entered into by ITMS System Integrator, only with prior approval of JSCL. However, the responsibility to meet Standards of Performance will continue to be that of the ITMS System Integrator.

## 4.2. Obligations of JSCL

4.2.1. JSCL shall observe, undertake, comply with and perform, in addition to and not in derogation of its obligations elsewhere set out in this Agreement, the obligations set forth in this Article:

(a) To release payments to ITMS System Integrator in accordance with the Agreement; and

(b) To reasonably cooperate with the ITMS System Integrator to enable it to render its services in terms of the Agreement.

## 5. Article 5 – Personnel

5.1. The ITMS System Integrator shall deploy such qualified and experienced personnel as may be required to carry out its Scope of Work.

5.2. It is expressly understood and agreed by ITMS System Integrator that no employee or worker of the ITMS System Integrator or its sub-contractor(s) shall be considered to be an employee of JSCL for any purpose whatsoever. ITMS System Integrator shall be solely responsible for all such employees and workers, their wages, statutory payments, taking out and maintaining ESIC/ other insurance etc. and furnish to JSCL evidence of its compliance from time-to-time as required by them. JSCL shall not be liable for any payment or claim or compensation (including but not limited to compensation on account of injury or death or termination) of any nature to such employees or workers at any point of time during the currency of this Agreement or after its Termination.

**5.3.** In the event that any of the personnel deployed by or at the behest of ITMS System Integrator is reasonably determined by JSCL to be incompetent, guilty of misbehaviour or misconduct or incapable in discharging the assigned responsibilities, JSCL may request the ITMS System Integrator to forthwith provide a replacement of such personnel with personnel having suitable qualifications and experience for the assigned responsibilities and the ITMS System Integrator shall deploy a suitable replacement as soon as possible. The ITMS System Integrator shall have no claim for additional costs arising out of or incidental to any removal and/ or replacement of personnel.

## 6. Article 6 – Payments to ITMS System Integrator

6.1. Subject to Article 6.2 hereunder and other terms of this Agreement and during the Contract Period, JSCL shall make payments to the ITMS System Integrator, as specified in Schedule C of this Agreement.

6.2. ITMS System Integrator shall be responsible for adhering to the minimum Standards of Performance while performing its Scope of Work, failing which it shall be liable for deduction of default charges from its payment as specified in Schedule E ("Default Charges").

6.3. **Payment of CAPEX charges:**

ITMS System Integrator shall be entitled to invoice JSCL at the time of completion of each Milestone as described on Payment Milestones as per Section 4 of RFP Part 2. The Payment for each invoice shall be due and payable to the ITMS System Integrator within 30 (thirty) days from the date of receipt of invoice, subject to deduction of liquidated damages, if any, as set out in Schedule E of this Agreement.

6.4. **Payment for OPEX Charges:**

(a) ITMS System Integrator shall submit invoice to JSCL on a quarterly basis as described on Payment Milestones as per Section 4 of RFP Part 2.

(b) Within 30 days of receiving invoice from the ITMS System Integrator, JSCL shall release payment to the ITMS System Integrator after deduction of Default Charges, if any.

# 7. Article 7 - Performance Security

7.1. ITMS System Integrator has, for due and faithful performance of its obligations under this Agreement, provided to JSCL, a Performance Security in the form of bank guarantee from a Bank for a sum of Rs. _____ (Rupees _____) [equal to 10% of the contract value], valid from the date of issue of such bank guarantee till 6 months beyond the Expiry Date.

7.2. A copy of Performance Security bank guarantee is provided in Schedule D of this Agreement.

7.3. JSCL shall release the Performance Security bank guarantee to ITMS System Integrator upon expiry of the bank guarantee or within six months after the Termination Date, as the case may be.

7.4. JSCL shall have the right to invoke the Performance Security bank guarantee in case of Termination of the Contract due to an ITMS System Integrator's Event of Default, as agreed pre-estimated liquidated damages.

# 8. Article 8 – Events of Default & Termination

8.1. **ITMS System Integrator's Events of Default**

The following event(s) shall constitute an event of default of ITMS System Integrator (an "ITMS System Integrator's Event of Default"):

(a) ITMS System Integrator fails to adhere to the Standards of Performance as provided for in Schedule E hereof and that results in an event which has been termed as an ITMS System Integrator's Event of Default therein; or

(b) ITMS System Integrator is in breach of this Agreement and such breach has a Material Adverse Effect on JSCL; or

(c) The transfer of all or material part of the assets or undertaking of ITMS System Integrator except where such transfer, in the reasonable opinion of JSCL, does not materially affect the financial and technical capability of ITMS System Integrator to perform its obligations under this Agreement; or

(d) ITMS System Integrator is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for ITMS System Integrator or for any of its property that, in the opinion of JSCL, has a material bearing on its ability to discharge its Scope of Work as contemplated in the Agreement; or

(e) ITMS System Integrator is ordered to be wound up by a court of law, except for the purpose of amalgamation or reconstruction provided that, as part of such amalgamation or reconstruction, the property, assets and undertaking of ITMS System Integrator are transferred to the amalgamated or reconstructed entity and

that the amalgamated or reconstructed entity has unconditionally assumed the obligations of ITMS System Integrator under this Agreement and the amalgamated or reconstructed entity in the reasonable opinion of JSCL has the technical capability, operating experience and financial standing necessary for the substantial performance of its obligations under this Agreement and this Agreement remains in full force and effect: or

(f) ITMS System Integrator repudiates this Agreement or otherwise evidences an intention not to be bound by this Agreement; or

(g) ITMS System Integrator suffers an execution being levied on any of its assets/ equipment causing a Material Adverse Effect and allows it to be continued for a period of 30 (thirty) days; or

(h) Any other event or occurrence which is referred to as ITMS System Integrator's Event of Default, in the Agreement.

8.2. **JSCL's Event of Default**

The following event(s) shall constitute an event of default of JSCL (an "JSCL's Event of Default") unless such JSCL's Event of Default has occurred as a result of ITMS System Integrator's Event of Default or a Force Majeure Event:

(a) JSCL is in breach of this Agreement and such breach has a material impact on the performance of obligations by the ITMS System Integrator under this agreement; or

(b) JSCL fails to make the payment to the ITMS System Integrator, as per provisions of this Agreement, for a continuous period of six months; or

(c) JSCL repudiates this Agreement or otherwise evidences an irrevocable intention not to be bound by this Agreement.

8.3. Upon occurrence of an ITMS System Integrator's Event of Default (as provided in Article 8.1) or JSCL's Event of Default (as provided in Article 8.2), the Parties agree that JSCL or ITMS System Integrator, whosoever is not in default ("Non-Defaulting Party") shall, following the Cure Period and subject to Article 8.4, be entitled to terminate this Agreement forthwith by issuing a 30 (Thirty) days' notice ("Termination Notice") to the party in default ("Defaulting Party") and upon expiry of such notice period, this Agreement shall stand terminated.

8.4. Prior to issuing a Termination Notice, the Non-Defaulting Party will, by a notice in writing inform the Defaulting Party of its intention to issue the Termination Notice (the "Preliminary Notice") and provide a Cure Period to the Defaulting Party to make its representation, if any, against such intended Termination Notice and/or take corrective action, if any. After the expiry of Cure Period, Non-Defaulting Party may issue the Termination Notice after giving due consideration to any representation made by Defaulting Party along with evidence thereof and/or corrective action taken by Defaulting Party, prior to issuing any such Termination Notice.

8.5. **Termination Notice**

If a Party having become entitled to do so decides to terminate this Agreement pursuant to Article 8.3, it shall issue Termination Notice setting out:

(a) in sufficient detail the underlying Event of Default;

(b) the Termination Date, in accordance with Article 10.3; and

(c) any other relevant information.

8.6. **Obligation of Parties**

Following the issue of Termination Notice by either Party, the Parties shall promptly take all such steps as may be necessary or required to ensure that until Termination the Parties shall, to the fullest extent possible, discharge their respective obligations so as to maintain the continued operation of the Project;

In case of termination of the Agreement, if so desired by JSCL, ITMS System Integrator shall provide any or all the services envisaged under this Agreement for a period of 6 (six) months from the date of such Termination or till a suitably experienced agency, or any other alternate arrangement replaces ITMS System Integrator, whichever is earlier, or as may be mutually agreed by the Parties. Payments shall be duly paid to ITMS System Integrator in accordance with and at the rates prescribed in this Agreement by JSCL, for the work performed by the ITMS System Integrator.

8.7. **Withdrawal of Termination Notice**

Notwithstanding anything inconsistent contained in this Agreement, if the Defaulting Party which has been served with the Termination Notice cures the underlying Event of Default to the satisfaction of the Non-defaulting Party at any time before the Termination occurs, the Termination Notice may be withdrawn by the Party which had issued the same.

**8.8. Upon Termination of this Agreement for any reason whatsoever by any of the Parties:**

(a) Notwithstanding anything to the contrary contained in this Agreement, any Termination, pursuant to the provisions of this Agreement, shall be without prejudice to accrued rights of any of the Parties including payments for periods prior to the effectiveness of the Termination, each Party's right to claim and recover damages and other rights and remedies which a Party may have under the Agreement or in law. All rights and obligations of each Party under this Agreement shall survive the Termination of this Agreement to the extent such survival is necessary for giving effect to such rights and obligations.

(b) On Termination of this Agreement, notwithstanding anything to the contrary contained in this Agreement, JSCL shall be within its rights to appoint any other agency to replace ITMS System Integrator and provide the services on such terms and conditions as JSCL may decide, at its sole discretion.

8.9. Upon Termination of the Agreement or upon its expiry due to efflux of time, the ITMS System Integrator shall hand over hosting infrastructure/any other project assets in the possession of ITMS System Integrator and project related operational and transaction records and documentation and other service-related data (collectively, the "Project Data") to JSCL. ITMS System Integrator may, as requested by JSCL, also provide

maintenance support for ITMS components on mutually agreed terms. Additionally, the following shall be applicable:

(a) Upon Termination due to ITMS System Integrator's Event of Default: JSCL shall have a right to forfeit the Performance Guarantee amount as mutually agreed pre-estimated liquidated damages.

(b) Upon Termination due to JSCL's Event of Default: JSCL shall return the Performance Guarantee to the ITMS System Integrator.

(c) Upon Termination due to Force Majeure: JSCL shall return the Performance Guarantee to the ITMS System Integrator.

## 9. Article 9 – Indemnity

9.1. ITMS System Integrator shall indemnify, defend and hold JSCL, including their officers, servants and agents (the "Indemnified Persons") harmless against any and all proceedings, actions and third party claims for loss, damage and expense of whatever kind and nature arising out of a breach by the ITMS System Integrator of any of its service obligations under this Agreement.

9.2. Without limiting the generality of Article 9.1, the ITMS System Integrator shall fully indemnify and defend the Indemnified Persons from and against any and all loss and damages arising out of or with respect to

(a) failure of the ITMS System Integrator to comply with Applicable Laws,

(b) payments of taxes relating to the ITMS System Integrator, its contractors, suppliers and representatives, income or other taxes required to be paid by the ITMS System Integrator without reimbursement hereunder,

(c) non-payment of amounts payable by ITMS System Integrator to its employees or sub-contractors as a result of materials or services furnished to the ITMS System Integrator, or

(d) any claim or action to the extent such action is based on a claim that the ITMS System Integrator infringes a patent, copyright or trademark, and ITMS System Integrator shall pay those damages and costs finally awarded against the Indemnified Persons in such action attributable to such claim.

## 10. Article 10 - Force Majeure

10.1. As used in this Agreement, a Force Majeure Event shall mean occurrence of any or all of the events defined in Article 10.2 hereinafter which prevent the Party claiming Force Majeure (the "Affected Party") from performing its obligations under this Agreement and which act or event:

(a) Is beyond the reasonable control and not arising out of the fault of the Affected Party;

(b) The Affected Party has been unable to overcome such act or event by the exercise of due diligence and reasonable efforts, skill and care, including through expenditure of reasonable sums of money; and

(c) Leads to a Material Adverse Effect.

10.2. **Force Majeure Events**

For purposes of this Article, and subject to Articles 10.1 (a) (b) and (c) herein, Force Majeure Event(s) shall mean one or more of the following acts or events:

(a) Acts of God or events beyond the reasonable control of the Affected Party which could not reasonably have been expected to occur, exceptionally adverse weather conditions, lightning, earthquake, cyclone, flood, volcanic eruption or fire or landslide;

(b) Radioactive contamination or ionizing radiation;

(c) Strikes or boycotts (other than those involving a Party or its employees or representatives or attributable to any act or omission of any of them) interrupting supplies and services relating to the Project for a period exceeding a continuous period of 15 (fifteen) days;

(d) Any act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage which prevents discharging of its obligations by a Party for a period exceeding a continuous period of 15 (fifteen) days;

(e) Any public agitation which prevents discharging of its obligations by a Party for a period exceeding a continuous period of 15 (fifteen) days.

10.3. **Effect of Force Majeure Event**

Upon the occurrence of any Force Majeure Event, the following shall apply:

(a) There shall be no Termination except when a Force Majeure Event subsists for a period of 180 (one hundred eighty) days or more within a continuous period of 365 (three hundred sixty five) days, in which case, JSCL may in its sole discretion terminate this Agreement by giving Termination Notice in writing to the ITMS System Integrator without being liable in any manner whatsoever;

(b) The Parties shall bear their respective costs and no Party shall be required to pay to the other Party any costs arising out of such Force Majeure Event;

(c) JSCL will not be liable for making payments to the ITMS System Integrator for the period and for such services that could not be rendered by the ITMS System Integrator due to such Force Majeure Event;

(d) ITMS System Integrator will not be liable for the Default Charges during the periods in which the Force Majeure events persist.

**10.4. Liability for other losses, damages etc.**

Save and except as expressly provided under this Article 10, no Party hereto shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event or exercise of any right pursuant to the Article 10**Error! Reference source not found.**.

10.5. **Excuse from performance of obligations**

If the Affected Party is rendered wholly or partially unable to perform its obligations under this Agreement because of a Force Majeure Event, it shall be excused from performance of such of its obligations and to the extent it is unable to perform on account of such Force Majeure Event provided that:

(a) the suspension of performance shall be of no greater scope and of no longer duration than is reasonably required by the Force Majeure Event;

(b) the Affected Party shall make all reasonable efforts to mitigate or limit damage to the other Party arising out of or as a result of the existence or occurrence of such Force Majeure Event and to cure the same with due diligence, and

(c) when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party written notice to that effect and shall immediately and promptly resume performance of its obligations hereunder.

10.6. Notwithstanding anything to the contrary contained in this Agreement, a Party hereto shall not be liable to the other Party for any exemplary, special, indirect, consequential or incidental damages of any kind (including without limitation loss of revenues or loss of profits), even if such Party has been advised of the possibility of such damages.

## 11. Article 11 – Confidentiality

11.1. **Mutual Confidentiality Obligations**

(a) All information, data, legacy information, and any other information, provided by a Party hereto, including without limitation the proprietary materials, software and documentation, specifications, etc. in connection with the Project or otherwise during the Contract Period, shall be treated as confidential ("Confidential Information") by the receiving Party.

Unless otherwise expressly authorized in writing by the disclosing Party of Confidential Information, the receiving Party shall maintain in strict confidence all Confidential Information, shall use Confidential Information only for the purpose of this Agreement, and shall restrict disclosure of Confidential Information to only those of its directors, officers, employees, consultants, or advisors who require access to the Confidential Information for carrying out the work relating to the Agreement and who are bound not to disclose the same.

(b) The restrictions set forth in sub-article (a) above herein shall not apply to any part of the Confidential Information which:

i. is at the time of disclosure to the receiving Party, or thereafter, becomes part of the public domain, other than as a result of a disclosure by the receiving Party, their directors, officers or employees; or

ii. was, at the time of disclosure to the receiving Party, already in the possession of such Party on a lawful basis; or

iii. is required to be disclosed by the receiving Party by judicial, administrative process, any enquiry, investigation, action, suit, proceeding or claim or otherwise by Applicable Laws or by any Governmental Agency, provided that the receiving Party shall promptly advise the disclosing Party of any expected disclosure hereunder so as to enable the disclosing Party to take appropriate steps as it may so desire.

# 12. Article 12 - Dispute Resolution

## 12.1. Conciliation

(a) Any dispute, difference or controversy of whatever nature howsoever arising under, out of or in relation to this Agreement and so notified in writing by any Party to the other (the "Dispute") in the first instance shall be attempted to be resolved amicably in accordance with the conciliation procedure provided in sub-article (b) under.

(b) In the event of any Dispute between the Parties, such Dispute shall be referred to the Executive Director, JSCL (or his/her nominee) and the CEO/Managing Director of the ITMS System Integrator (or his/her nominee) for amicable settlement. Upon such reference, the said individuals shall meet not later than 7 (seven) days of the date of such request or such longer period as may be mutually agreed by the Parties to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the said period or the Dispute is not amicably settled within 15 (fifteen) days of such meeting between the said individuals, any Party may refer the dispute to arbitration in accordance with the provisions of Article 12.2.

(c) If the Dispute is not resolved as evidenced by the signing of the written terms of settlement within 30 (thirty) working days of the aforesaid notice in writing or such longer period as may be mutually agreed by the Parties then the provisions of Article 12.2 shall apply.

## 12.2. Arbitration

(a) Any Dispute, which is not resolved amicably as provided in Article 12.1, shall be finally decided by reference to either a single Arbitrator mutually agreed to by the Parties or if no single arbitrator is appointed within 15 days of such reference then such arbitration shall be done by a panel of three (3) arbitrators one appointed by each party and third by the two arbitrators.

(b) Such arbitration shall be held in accordance with and be subject to the provisions of the Indian Arbitration and Conciliation Act, 1996 and any amendments thereto (the "Act").

(c) The venue of such arbitration shall be Jabalpur and the cost of arbitration shall be borne equally by the Parties.

(d) The Parties undertake to carry out any decision or award of the arbitrator (the "Award") without delay. Subject to the Act, Awards relating to any Dispute shall be final and binding on the Parties as from the date they are made.

(e) Pursuant to having exhausted the remedies, the Parties agree that an Award may be enforced against the ITMS System Integrator and/or JSCL, as the case may be and their respective assets wherever situated.

(f) This Agreement and rights and obligations of the Parties shall remain in full force and effect pending the Award in any arbitration proceeding hereunder.

## 13. Article 13 – Language

13.1. All notices required to be given by one Party to the other Party and all other communications, documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

## 14. Article 14 – Assignment and Charges

14.1. The ITMS System Integrator shall neither create nor permit to subsist any encumbrance over or otherwise transfer or dispose of all or any of its rights and benefits under this Agreement except with prior consent in writing of JSCL, which consent JSCL shall be entitled to decline without assigning any reason whatsoever.

## 15. Article 15 – Governing Law and Jurisdiction

15.1. This Agreement shall be construed and interpreted in accordance with and governed by the laws of India and the Courts at Jabalpur shall have exclusive jurisdiction over all matters arising out of or relating to this Agreement.

## 16. Article 16 – Relation Between Parties

16.1. Nothing contained in this Agreement shall be construed or interpreted as constituting a partnership, joint venture or agency between the Parties. No Party shall have any right or authority to represent on behalf of the other nor shall any such representation to third party(ies) bind the other in any manner whatsoever. This Agreement is being entered into on a principal to principal basis. The ITMS System Integrator shall be an independent contractor and is fully independent in performing any or all its Scope of Work. The ITMS System Integrator shall not act or hold itself out as a servant or employee of JSCL.

16.2. This Agreement is being entered into by the Parties on a non-exclusive basis. The Parties shall be free to work or associate with any third party and enter into any agreement, contract, joint venture, partnership or an arrangement of whatsoever nature with respect to the matters covered in the Agreement.

## 17. Article 17 – Notices

**17.1. Any payment, notice or other communication to be given by one Party to the other under, or in connection with the matters contemplated by this Agreement shall be**

**in writing and shall be delivered by hand/ registered post/ courier at the following address:**

| If to ITMS System Integrator: | If to JSCL: |
|---|---|
| | Jabalpur Smart City Limited<br>Manas Bhawan, Wright Town,<br>Jabalpur , Madhya Pradesh, 482002 |
| Attention: | Attention: Executive Director (JSCL) |
| Phone: | Phone: 0712-2567035 |
| Fax: | Fax: 0712-2561584 |
| Email: | Email: |

**17.2. Copies of all notices may also be sent by facsimile and/or email.**

## 18. Article 18 – Waiver

18.1. Waiver by a Party of any default by other Party in the observance and performance of any provision of or obligations of or under this Agreement: -

(a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;

(b) shall not be effective unless it is in writing and executed by a duly authorised representative of the Party; and

(c) shall not affect the validity or enforceability of this Agreement in any manner.

18.2. Neither the failure by a Party to insist, on any occasion, upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

## 19. Article 19 – Survival

**19.1. Termination of this Agreement:**

(a) shall not relieve any Party of its obligations hereunder which expressly or by implication survives Termination hereof, and

(b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of any Party, shall not relieve such Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such Termination or arising out of such termination.

## 20. Article 20 – Severability

20.1. If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under this Agreement or otherwise and the invalid, illegal or unenforceable part shall stand deleted and the rest of the Contract shall be enforced.

## 21. Article 21 – Representations and Warranties

21.1. **Representations and Warranties of the ITMS System Integrator:**

ITMS System Integrator represents and warrants that:

(a) It is duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation;

(b) It has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;

(c) It has taken all necessary corporate and other action under applicable laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;

(d) It has the necessary capabilities essential to undertake the obligations contemplated hereunder;

(e) This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

(f) It is subject to civil and commercial laws of India with respect to this Agreement;

(g) There are no actions, suits, proceedings, or investigations pending or, to ITMS System Integrator's knowledge, threatened against it at law or in equity before any court or before any other judicial, quasi-judicial or other authority, the probable outcome of which may result in the breach of or constitute a default of ITMS System Integrator under this Agreement or which may result in any impairment of its ability to perform its obligations and duties under this Agreement;

(h) It has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Governmental Agency which may result in any impairment of ITMS System Integrator's ability to perform its obligations and duties under this Agreement;

(i) It has complied with all Applicable Laws and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal liabilities which may result in

any impairment of its ability to perform its obligations and duties under this Agreement;

(j) No representation or warranty by ITMS System Integrator contained herein or in any other document furnished by it to JSCL in relation to applicable certificates, permits, permissions, licenses and other such necessary approvals and sanctions required under the Contract contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading; and

(k) No sums, in cash or kind, have been paid or will be paid by or on behalf of ITMS System Integrator, to any person by way of price, commission or otherwise for securing the Agreement or entering into this Agreement or for influencing or attempting to influence any officer or employee of JSCL in connection therewith.

21.2. **Representations and Warranties of JSCL:**

JSCL represents and warrants that:

(a) JSCL, through its authorized representative, has full power and authority to execute, deliver and perform its obligations under this Agreement;

(b) JSCL has taken all necessary action to authorise the execution, delivery and performance of this Agreement; and

(c) This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof.

**21.3. Any of the Representations and Warranties herein contained, if found to be untrue shall constitute breach of this Agreement.**

## 22. Article 22 – Standard of Care

22.1. The ITMS System Integrator acknowledges the relationship of trust and confidence established between the ITMS System Integrator and JSCL by this Agreement. Accordingly, all acts of the ITMS System Integrator shall be consistent with this relationship. The ITMS System Integrator shall always act, in respect of any matter relating to this Agreement, as an honest and faithful adviser/ service provider to JSCL. The ITMS System Integrator shall at all times support and safeguard JSCL's legitimate interests in any dealings with third parties.

## 23. Article 23 – No Additional Remuneration

**23.1.** The remuneration of the ITMS System Integrator set out in this Agreement shall constitute its sole remuneration in connection with this Agreement. The ITMS System Integrator shall not accept for its own benefit any trade commission, discount or similar payment in the discharge of its obligations hereunder and the ITMS System Integrator shall ensure that its personnel, agents, etc. similarly shall not receive any such additional

remuneration. The ITMS System Integrator shall at **all times perform its responsibilities hereunder in furtherance of the best interest of the Project.**

## 24. Article 24 –ITMS System Integrator Not To Engage In Certain Activities

24.1. The ITMS System Integrator shall not engage and shall cause its personnel as well as sub-contractors and their personnel not to engage, either directly or indirectly, in any business or professional activities which would conflict, with the activities assigned to them under or pursuant to this Agreement.

## 25. Article 25 – Ownership of Project and Intellectual Property Rights

25.1. **Ownership of the Project**

With exceptions of proprietary hardware or software required for functioning of such Hardware, the ownership of all Hardware and or such Software forming part of the Project shall be transferred to JSCL at the time of delivery and installation.

In cases where the customized hardware/software is developed and installed exclusively for JSCL, the ownership of all such shall rest exclusively with JSCL upon delivery and installation.

The ownership of all data created as part of the project, including but not limited to traffic data, brands, design etc. shall rest exclusively with JSCL.

The Software Licenses and Licenses for other proprietary, third party software and standard Hardware shall be transferred to JSCL upon delivery and installation. The License Period of proprietary software of the ITMS System Integrator shall be perpetual and irrevocable.

25.2. **Intellectual Property Rights**

(a) The Intellectual Property Rights (IPR) in all Standard and Proprietary Hardware and or software required for operation of Hardware shall remain vested in the owner of such rights. JSCL shall have rights to possess and use the same exclusively for the purposes of effective implementation, operation and maintenance of the Project. JSCL shall not assign license, or otherwise voluntarily transfer its contractual rights to any other third party without approval from the ITMS System Integrator unless such assignment is required for performance of the Project.

(b) The Intellectual Property Rights of customized hardware/software which is developed and installed exclusively for JSCL shall remain vested with JSCL. The ITMS System Integrator shall hand over the complete updated source code of all such software (other than 3rd party COTS) to JSCL:

i. At the time of Go-Live of the Project

ii. At the end of each year of during the Contract Period

iii. 3 months prior to prior to the expiry of Contract Period and

iv. Immediately in case of issuance of Termination notice by either party

The ITMS System Integrator shall handover the source code for all customized software corresponding to 100% to the operational module to JSCL which may be verified and certified by an independent agency as identified by JSCL. The ITMS System Integrator shall have the right to possess and use the same during the Contract Period exclusively for purposes of effective implementation, operation and maintenance of the Project and shall not assign license, or otherwise voluntarily transfer its contractual rights to any other third party without approval from JSCL.

(c) After the expiry or termination of the Master Service Agreement, the ITMS System Integrator shall have no right, title or interest in or to any work including without limitation the designs, software, programs, modifications or derivative works developed and customized for JSCL by ITMS System Integrator for the Project for any purpose whatsoever.

(d) The Software License for the ITMS System Integrator's Proprietary Software as well the Software Licenses for Standard Software procured from third party shall be perpetual and irrevocable.

(e) For purposes of this Agreement and the Master Service Agreement the terms "software", and "software programs/ Software License " shall include without limitation the source code, object code, any and all related design concepts and ideas, specifications, documentation, technical information, and all corrections, modifications, additions, improvements and enhancements to any of the foregoing provided to JSCL by the ITMS System Integrator in relation to the Project pursuant to the ITMS System Integrator Agreement. The terms "firmware" and "hardware" shall include without limitation the designs, drawings, specifications, custom designed electronic devices, documentation, technical information and all corrections, modifications, additions, improvements and enhancements to any of the foregoing provided to JSCL by ITMS System Integrator in relation to the Project pursuant to the Master Service Agreement.

# 26. Article 26 – Insurance

## 26.1. Insurance during the Contract Period

The ITMS System Integrator shall, at its cost and expense, purchase and maintain during the Contract Period, such insurances as are necessary including but not limited to the following:

(a) Hardware delivered and installed to the extent possible at the replacement value with JSCL as beneficiary.

(b) ITMS System Integrator 's all risk insurance with JSCL as co-beneficiary;

(c) Comprehensive third party liability insurance with the JSCL as co-beneficiary;

(d) Workmen's compensation insurance with the JSCL as co-beneficiary;

(e) Any other insurance that may be necessary to protect the ITMS System Integrator, its employees and the Project against loss, damage or destruction at replacement

value including all Force Majeure Events that are insurable and not otherwise covered in items (a) to (d) with JSCL as beneficiary/co-beneficiary;

26.2. **Evidence of Insurance Cover**

(a) The ITMS System Integrator shall, from time to time, provide to JSCL copies of all insurance policies (or appropriate endorsements, certifications or other satisfactory evidence of insurance) obtained by it in accordance with Master Service Agreement.

(b) If ITMS System Integrator shall fail to effect and keep in force the insurance for which it is responsible pursuant hereto , JSCL shall have the option to take or keep in force any such insurance, and pay such premium and recover all costs thereof from ITMS System Integrator or to forfeit deposit/ Performance guarantee from the ITMS System Integrator and pay or restoration for the same.

26.3. **Application of Insurance Proceeds**

(a) All moneys received under insurance policies shall be promptly applied by the ITMS System Integrator towards repair or renovation or restoration or substitution of the Project or any hardware/equipment/device thereof which may have been damaged or required repair/modification.

(b) The ITMS System Integrator shall carry out such repair or renovation or restoration or substitution to the extent possible in such manner that the Project, or any part thereof, shall, after such repair or renovation or restoration or substitution be as far as possible in the same condition as they were before such damage or destruction, normal wear and tear excepted.

(c) For insurance policies where JSCL is the beneficiary and where it received the insurance proceeds, only such sums are required from the insurance proceeds for restoration, repair and renovation of the Project

26.4. **Validity of Insurance Cover**

The ITMS System Integrator shall pay the premium payable on such insurance Policy/Policies so as to keep the insurance in force and valid throughout the Contract Period and furnish copies of the same to JSCL for each year/policy period. If at any time the ITMS System Integrator fails to purchase, renew and maintain in full force and effect, any and all of the Insurances required under this Master Service Agreement, JSCL may at its option purchase and maintain such insurance and all sums incurred by JSCL therefore shall be reimbursed by the ITMS System Integrator forthwith on demand, failing which the same shall be recovered by JSCL by encashment of Performance Security, exercising right of set off or otherwise.

## 27. Article 27 – Execution of Agreement

27.1. This Agreement may be executed in two originals, each of which when executed and delivered shall constitute an original of this Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first written above.

| **JSCL** | **ITMS System Integrator** |
|---|---|
| Signature: | Signature: |
| Name: | Name: |
| Title: | Title: |
| Date: | Date: |

| **Witness 1** | **Witness 2** |
|---|---|
| Signature: | Signature: |
| Name: | Name: |
| Title: | Title: |
| Date: | Date: |

**Schedule A : Scope of Work**

**Schedule B : Technical Specifications of ITMS Components**

To be included (As per RFP and ITMS System Integrator's Proposal, as accepted by JSCL)

**Schedule C : Payments to ITMS System Integrator**

To be included (As per RFP and ITMS System Integrator's Proposal, as accepted by JSCL)

**Schedule D : Performance Security Bank Guarantee**

Copy of Performance Security Bank Guarantee

[Refer Article 7 of the Agreement]

To,

Executive Director

Jabalpur Smart City Limited,

Manas Bhawan, Wright Town,

Jabalpur, Madhya Pradesh - 482002

THIS DEED OF GUARANTEE executed on this the _____day of _____at _____ by _____ _____ (Name of the Bank) having its Head/Registered office at _____ hereinafter referred to as "the Guarantor" which expression shall unless it be repugnant to the subject or context thereof include successors and assigns;

In favour of

Executive Director, Jabalpur Smart City Limited having its office at Manas Bhawan, Wright Town, Jabalpur, Madhya Pradesh - 482002, hereinafter referred to as "JSCL", which expression shall, unless repugnant to the context or meaning thereof include its administrators, successors or assigns.

WHEREAS

A. By the Agreement entered into between Jabalpur Smart City Limited, Manas Bhawan, Wright Town, Jabalpur, Madhya Pradesh - 482002 and _____, a company incorporated under the provisions of the Companies Act, 1956/2013, having its registered office/permanent address at [insert address] ("ITMS System Integrator"), the Company has been authorised for Implementation of Intelligent Traffic Management System solutions in Jabalpur, in accordance with the Agreement mentioned hereinabove ("Master Service Agreement").

B. In terms of the Master Service Agreement, the ITMS System Integrator is required to furnish to JSCL, an unconditional and irrevocable bank guarantee for an amount of Rs. _____ [insert amount in figures and words] as Performance Security for due performance/discharge of its obligations under the Master Service Agreement.

   At the request of the ITMS System Integrator, the Guarantor has agreed to provide guarantee, being these presents, guaranteeing the due and punctual performance/discharge by the ITMS System Integrator of its obligations under the Master Service Agreement.

NOW THEREFORE THIS DEED WITNESSETH AS FOLLOWS:

1. Capitalised terms used herein but not defined shall have the meaning assigned to them respectively in the Agreement.
2. The Guarantor hereby irrevocably guarantees the due and punctual performance by M/s._____ (hereinafter called the "ITMS System Integrator") of all its obligations under the Master Service Agreement.
3. The Guarantor shall, without demur, pay to JSCL sums not exceeding in aggregate Rs. _____ [insert amount in figures and words], within five (5) calendar days of receipt of a written demand therefor from JSCL stating that the ITMS System Integrator has failed to meet its performance obligations under the Master Service Agreement. The Guarantor shall not go into the veracity of any breach or failure on the part of the ITMS System Integrator or validity of demand so made by JSCL and shall pay the amount specified in the demand notwithstanding any direction to the contrary given or any dispute whatsoever raised by the ITMS System Integrator or any other Person. The Guarantor's obligations hereunder shall subsist until all such demands are duly met and discharged in accordance with the provisions hereof.
4. In order to give effect to this Guarantee, JSCL shall be entitled to treat the Guarantor as the principal debtor. The obligations of the Guarantor shall not be affected by any variations in the terms and conditions of the Master Service Agreement or other documents or by the extension of time for performance granted to the ITMS System Integrator or postponement/ non exercise/ delayed exercise of any of its rights by JSCL or any indulgence shown by JSCL to the ITMS System Integrator and the Guarantor shall not be relieved from its obligations under this Guarantee on account of any such variation, extension, postponement, non-exercise, delayed exercise of any of its rights by JSCL or any indulgence shown by JSCL, provided nothing contained herein shall enlarge the Guarantor's obligation hereunder.
5. This Guarantee shall be irrevocable and shall remain in full force and effect until _____unless discharged/released earlier by JSCL in accordance with the provisions of the Agreement. The Guarantor's liability in aggregate be limited to a sum of Rs_____ [insert amount in figures and words].
6. This Guarantee shall not be affected by any change in the constitution or winding up of the ITMS System Integrator/the Guarantor or any absorption, merger or amalgamation of the ITMS System Integrator /the Guarantor with any other Person.
7. The Guarantor has power to issue this guarantee and discharge the obligations contemplated herein, and the undersigned is duly authorised to execute this Guarantee pursuant to the power granted under _____.
8. The expressions "JSCL", "the Bank" and "ITMS System Integrator" hereinbefore used shall include their respective successors and assignees.

   In witness whereof I/We of the Bank have signed and sealed this guarantee on the _____day of _____2018_____ being herewith duly authorised.

For and on behalf of the _____Bank

Signature of authorised Bank official

Name:_____

Designation:_____

Stamp/Seal of the Bank:_____

Signed, sealed and delivered
for and on behalf of the Bank
by the above named _____
in the presence of :

Witness 1.
Signature_____
Name: _____
Address: _____
Witness 2.
Signature:_____
Name:_____
Address: _____

**Schedule E : Liquidated Damages, Standards of Performance & Default Charges**

Time is the essence of the Agreement and the delivery dates for Deliverables are binding on the ITMS System Integrator. In the event of delay for causes attributable to the ITMS System Integrator in meeting the timelines for the Deliverables, JSCL shall be entitled at its option to recover from the ITMS System Integrator as agreed liquidated damages a sum of 0.1% of the corresponding deliverable cost for every week of delay or part thereof, subject to maximum cumulative value of the Liquidated Damages being not more than 10% of the total CAPEX value. Any delay beyond 20 weeks in meeting any of the Deliverables timelines for causes attributable to the ITMS System Integrator shall be deemed to be an Implementation Agency's Event of Default. In addition, the ITMS System Integrator shall also be subject to imposition of liquidated damages, as provided elsewhere in the RFP.

(Standard of Performance & Default Charges to be included as per RFP Part 2.)

**Schedule F: ITMS System Integrator's Technical & Price Proposal**

To be attached

# Appendix 20: Compliance to Requirement (Technical / Functional Specifications)

The bidder should provide compliance to the requirement specifications (both technical and functional) as specified in the Part 2 of the RFP. The same should be reproduced here, and compliance against each requirement line item should be marked.

The Bidder shall provide compliance statement for Technical Specifications for all equipment/system in the format provided below:

- **Item/Equipment name : _____**
- **Make : _____**
- **Model : _____**

| Sl. # | Parameter | Minimum Requirement or Better | Compliance (Yes/No) | Specifications proposed by Bidder |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

## Appendix 21: Unpriced BoQ with Make and Model no.

The bidder should provide Make & Model of Unpriced BOQ, including completion specifications and datasheets as specified in the Part 2 of the RFP.

# Appendix 22: No Deviation Certificate

**(In Company Letter Head)**

This is to certify that our offer is exactly in line with your tender enquiry/RFP (including amendments) no. _____ dated _____. This is to expressly certify that our offer contains no deviation either Technical (including but not limited to Scope of Work, Functional Requirements Specification, Hardware Specification and Technical Requirements Specification) or Commercial in either direct or indirect form.

(Authorised Signatory)

Signature:

Name:

Designation:

Address:

Seal:

Date:

# Appendix 23: Project Credential Summary

## A. For Pre-Qualification criteria

| Sl # | Criteria | Name of the project proposed | Client Name | Project Value (in Rs. lakh) | Project Components | Project Start Date | Reference for Documentary evidence provided |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

- **Criteria** – Bidder to mention the PQ/TQ criteria against which the Project(s) are proposed.
- **Project Components** – Indicate the major project components like ITCS/RLVD/ANPR/SVD/E-challan etc. which are relevant to the project along with no. of location/junctions/scope as applicable.
- **Project Start Date & Current Status –** Mentioned project start date and Project status whether Completed or Ongoing
- **Reference for Documentary evidence provided** – Bidder to mention the page no./section of their Technical Proposal

**B. For Technical Qualification criteria**

| Sl # | Criteria | Name of the project proposed | Client Name | Project Value (in Rs. lakh) | Project Components | Project Start Date & Current Status | Reference for Documentary evidence provided |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

- **Criteria** – Bidder to mention the PQ/TQ criteria against which the Project(s) are proposed.
- **Project Components** – Indicate the major project components like ITCS/RLVD/ANPR/SVD/E-challan etc. which are relevant to the project along with no. of location/junctions/scope as applicable.
- **Project Start Date & Current Status –** Mentioned project start date and Project status whether Completed or Ongoing
- **Reference for Documentary evidence provided** – Bidder to mention the page no./section of their Technical Proposal

# Part 2 – Scope of Work and Requirement Specifications

# Table of Contents

# List of Abbreviations

| Abbreviations | Definitions/Description |
|---|---|
| ANPR | Automatic Number Plate Recognition |
| AMC | Annual Maintenance Contract |
| BoQ/BoM | Bill of Quantity/ Bill of Materials |
| CCTV | Closed-Circuit Television |
| FPS | Frame per second |
| FY | Financial Year |
| GoI | Government of India |
| GPRS | General Packet Radio Service |
| GPS | Global Positioning System |
| GUI | Graphical User Interface |
| ICCC | Integrated Command Control Centre |
| ICT | Information & Communication Technology |
| IRC | Indian Road Congress |
| ITSS | Intelligent Traffic Signalling System |
| ITMS | Intelligent Traffic Management System |
| JMC | Jabalpur Municipal Corporation |
| JSCL | Jabalpur Smart City Limited |
| KPI | Key Performance Indicator |
| LOA | Letter of Award |
| MIS | Management Information System |
| MoHUA | Ministry of Housing & Urban Affairs |
| O&M | Operations & Maintenance |
| PA system | Public Address system |
| RFP | Request for Proposal |
| RLVD | Red Light Violation Detection |

| Abbreviations | Definitions/Description |
|---|---|
| SI | System Integrator |
| SLA | Service Level Agreement |
| SSL | Secure Sockets Layer |
| SVD | Speed Violation Detection |
| TCC | Traffic Control Centre |
| UAT | User Acceptance Testing |
| UPS | Uninterruptible Power Supply |
| VPN | Virtual Private Network |

# 1. Introduction

## 1.1. Project Background

Jabalpur is among the first 20 cities selected in first round of smart cities challenge under Smart City Mission by Ministry of Housing and Urban Affairs, Government of India (formerly, Ministry of Urban Development).

Currently, seven cities from Madhya Pradesh have been shortlisted by Ministry of Housing and Urban Affairs, GoI, to be developed under the Smart City Mission. These cities are Jabalpur, Indore, Bhopal, Ujjain, Gwalior, Sagar and Satna.

In this context, Jabalpur has incorporated a special purpose vehicle (SPV) –Jabalpur Smart City Limited (JSCL) to plan, design, implement, coordinate and monitor the smart city projects in Jabalpur. It has been incorporated under Company Act, 2013 on 14th March 2016.

In alignment to its objectives, Jabalpur Smart City Limited (JSCL) aims to have an ICT based transit management and traffic management system which shall add value to citizens, city authorities and society in general by bringing down travel time, reducing travel related energy consumptions, increasing comfort and safety of travel, establishing efficient and effective management procedures and working towards environmental sustainability.

Jabalpur desires to foster the development of a robust Intelligent Traffic Management System infrastructure that is reliable and efficient leading to effective traffic management in the city.

## 1.2. Key Stakeholders

The key stakeholders for ITMS implementation in Jabalpur are:

- Jabalpur Smart City Limited
- Jabalpur Municipal Corporation
- Jabalpur Traffic Police

## 1.3. Project Objectives

The broad objectives of the project are as follows:

a) **Increased Traffic Signal Efficiency:** Reduction in traffic delays, optimized cycle times at intersection to regulate and maintain free flow of traffic to enhance the efficiency of the transport infrastructure.

b) **Improve Journey Time Reliability:** Improve reliability in journey times between various locations, so that citizens can experience an enhanced quality of road based transportation, through improving sustainability and efficiency in operation of the road network

c) **Increase Operational Efficiency:** The system is intended to offer operational efficiency to city authorities by way of extending IT based compliance process on ground and enable to deliver better traffic conditions and safe operating conditions. The Information technology solutions are expected to help in making the traffic enforcement functions more efficient. The ITMS solutions shall help in automated capture of traffic infractions and challan generation, with minimum manual

intervention, provide live dashboards for officers concerned, identification/tracking of specified vehicles (such as stolen vehicles and vehicles involved in crimes), etc.

d) **Improve Customer Services:** The traffic services to the public can be improved through the user friendly presentation of the various traffic information in real time through sharing of all relevant data feeds for public use.

e) **Safety Improvement:** The real time traffic monitoring and intelligent traffic management systems can prevent accidents by recognizing and thus responding to the potentially dangerous situation in advance.

f) **Real Time Information, Event Tracking & Response, and Fast Access to Stored Information:** The real time information at the Traffic Control Center (TCC) shall enable the operators to take necessary actions based on the type of information. Sending an emergency vehicle to the spot, arranging alternate route to VIP convoys, diverting the traffic to different routes are some of the actions that can be taken based on the Real Time Information. It shall be possible to track a particular event using the cameras installed at the traffic junction. A vehicle, violating the traffic could be tracked and penalised at the next traffic junction based on the number plate.

g) **Enforcement:** Effective enforcement of traffic violation, checking and monitoring shall reduce the traffic related offences of Red Light violations, Over-speeding etc.

h) **Create a platform for sharing traffic information:** The real-time and historic traffic data shall be available for analytics and decision making.

# 2. Scope of Work

## 2.1. Overview

The ITMS System Integrator has to ensure the successful implementation of the proposed Intelligent Traffic Management Solutions and provide O&M for the entire Contract Period and capacity building support to city authorities as per the scope of services envisaged below. Any functionality not expressly stated in this bidding document but required to meet the needs of the organization to ensure successful operations of the system shall essentially be under the scope of the ITMS System Integrator and for that no extra charges shall be admissible.

### Proposed Intelligent Traffic Management System Solutions

The proposed scope for Intelligent Traffic Management System for Jabalpur are as below:

*Table 2-1: Proposed ITMS Solutions for Jabalpur*

| Project Components | Solutions |
|---|---|
| Traffic Management | 1. Intelligent Traffic Control System at Junctions<br>2. Public Address (PA) system<br>3. Traffic Junction Surveillance System |
| Traffic Enforcement | 1. Red Light Violation Detection (RLVD) System<br>2. Automatic Number Plate Recognition (ANPR) System<br>3. Speed Violation Detection (SVD) System<br>4. E-Challan System |

The geographical coverage of the above solutions are provided in section 2.3.

The schematic diagram below shows the systems envisaged under ITMS and the information flow across the systems to be integrated.

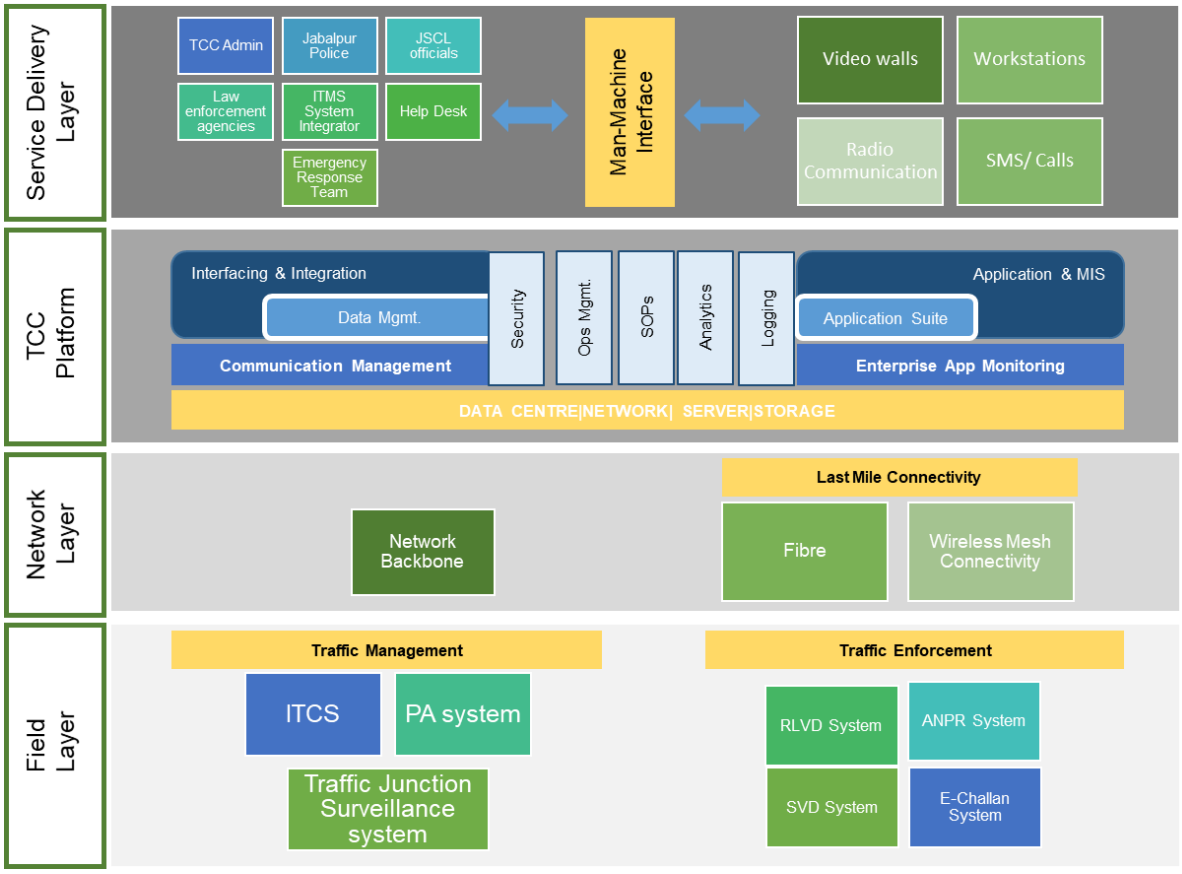


***Figure 2-1: ITMS Architecture***

## 2.2. Design Principles

The proposed ITMS solutions are planned to improve traffic operations in Jabalpur. Accordingly, the ITMS solutions shall be designed considering the following guiding principles:

1) **Scalable:** The system will be scalable to future growth in volume of traffic and to integrate with other smart city initiatives and support sustainable development to meet the growing traffic demand of the Jabalpur. The IT infrastructure proposed in the System will support these scalability requirements. There will not be any system imposed restrictions on the upward scalability in number of field devices. The system will also support vertical and horizontal scalability so that depending on changing requirements from time to time, the system may be scaled upwards. There must not be any system imposed restrictions on the upward scalability in number of field devices. The ITMS shall be scalable to at least 100 Traffic Junctions without requiring any change in hardware or application. Beyond that, the ITMS shall be scalable with upgradation/addition of hardware, without requiring any change in applications.

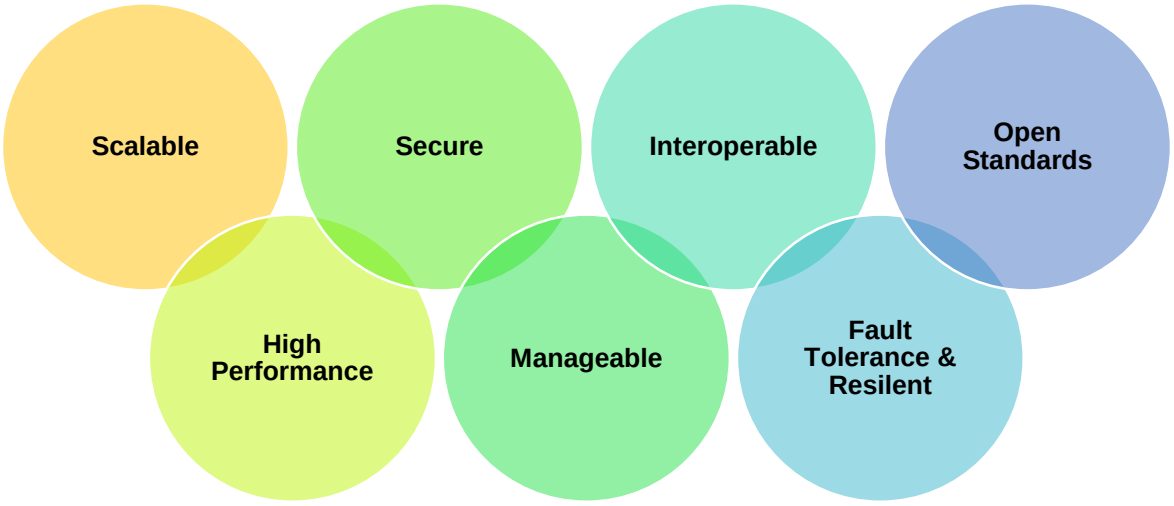


*Figure 2-2: ITMS Design Principles*

2) **High Performance:** The System will be up and running without any single point of failure as per the demands of various Project critical applications running on the network. Components of the architecture must provide redundancy and ensure that are no single point of failures in the key project components. Considering the high sensitivity of the system, design will be in such a way as to be resilient to technological sabotage. To take care of remote failure, the System will be configured to mask and recover with minimum outage.

3) **Secure:** The network in the proposed System will have built-in security features as per good industry practices in line with the requirement for ITMS. Access control will be implemented at various levels as per requirement of the system. The ITMS System Integrator will be required to make provisions for security of field equipment as well as protection of the software system from hackers and other threats. The virus and worm's attacks will be well defended with gateway level Anti-virus system. Furthermore, all the system logs will be properly stored & archived for future analysis and forensics whenever desired. The following guidelines need to be observed for security:

    a) Build a complete audit trail of all activities and operations using log reports, so that errors in system – intentional or otherwise – can be traced and corrected.
    b) Access controls must be provided to ensure that the system is not tampered or modified by the system operators.
    c) Implement data security to allow for changes in technology and business needs.
    d) The security of the field devices must be ensured in a way to secure the field devices in terms of physical damage & unauthorized access.

4) **Manageable:** The System will be seamlessly managed with centralised enterprise management software. All the network components will be manageable using open standard management protocols such as SNMP. Ease of configuration, ongoing health monitoring, and failure detection are vital to the goals of scalability, availability, and security and must be able to match the scalability of the system.

5) **Interoperable -** The system will have capability to take inputs from other third-party systems as per situational requirements. All products will be open standards based and should be interoperable with different vendors' products following industry standards.

6) **Fault Tolerance and Resilient**: The System should have inbuilt redundancy features to provide high availability. Redundant connectivity will be proposed for all locations to ensure that single link failure does not affect the functionality.

7) **Open Standards –** The System should use open standards and protocols to the extent possible without compromising on the security.

## 2.3. Geographical Coverage of the Project

Summary of the geographical extent of the project is as provided in table below:

***Table 2-2: Summary of ITMS Solutions - Jabalpur***

| Sl # | Solutions | Locations/Numbers |
|---|---|---|
| **A.** | **Traffic Management** | |
| 1. | Intelligent Traffic Control System | 17 junctions |
| 2. | Public Address (PA) system | 17 junctions |
| 3. | Traffic Junction Surveillance system | 17 junctions |
| **B.** | **Traffic Enforcement** | |
| 4. | Red Light Violation Detection (RLVD) System | 17 junctions |
| 5. | Automatic Number Plate Recognition (ANPR) System | 3 locations |
| 6. | Speed Violation Detection (SVD) System | 5 locations |
| 7. | E-Challan System | E-Challan Software |

The Indicative list of locations to be covered under this project are provided in **Annexure I - List of Locations**

## 2.4. Detailed Scope of Work

The detailed scope of work for ITMS System Integrator (ITMS System Integrator) shall be as under:

### 2.4.1. Detailed Project Plan and System Design Document

The ITMS System Integrator shall prepare and submit a Detailed Project Plan to JSCL which should cover following aspects, at the minimum:

- Names of the Project Team members, their roles and responsibilities
- Approach and methodology to be adopted to implement the Project (which should be in line with what has been proposed during bidding stage, but may have value additions / learning in the interest of the project).
- Responsibility matrix for all stakeholders
- Risks the ITMS System Integrator anticipates and the plans they have towards their mitigation
- Activity and work plan specifying dependencies between various project activities / sub-activities and their timelines

The ITMS System Integrator shall prepare and submit a System Design document which shall include a comprehensive As-Is study of the traffic junctions/intersections (identified for ITCS) during various time periods of day including peak and non-peak hours traffic flows to establish the key performance indicators (KPI) for the project. The KPIs of the project shall be included in the system design report. The following minimum parameters should be captured in the System Design Document:

1) Data of existing operating conditions, traffic volumes across various time periods of a day, which will cover all peak and non-peak hours, weekends, etc., saturation flow rates, on individual lanes, free flow travel time through the junction and actual travel time in peak operating conditions.
2) Journey time surveys for As-Is conditions should be conducted along designated corridors which should be designed such that all junctions are picked in at least one corridor. For major junctions, both directions (e.g east-west and north-south) and key turning movements should also be covered. Bidders may propose alternate methodology for collecting travel time survey along all major corridors and junction delays at each of the junctions
3) Vehicle type distribution, Directional distribution
4) Physical and visual characteristics of the area
5) Travel times, delays between different points of the network
6) Additional dependencies with respect to the available infrastructure and geometry at the junctions
7) Any other relevant data which the ITMS System Integrator anticipates will assist in establishing the benchmarks for the project
8) Any other study/survey required for effective implementation and operation of ITMS shall be carried out by ITMS System Integrator.

The System Design Document shall also include the expected measurable improvements against each KPI as detailed out in the above ‘As-Is’ study after implementation of ITCS. The benchmarking data should also be developed to track current situation and desired state. The System Integrator shall study the existing business processes, functionalities, existing traffic management systems and applications.

Additionally, the ITMS System Integrator should provide as part of System Design Document the detailed 'To-Be' designs (Junction layout plans) specifying the following:

1) High Level Design (including but not limited to) Application architecture, Logical and physical database design, Data dictionary and data definitions, ER diagrams and other data modelling documents and Physical infrastructure design for devices on the field
2) Software Requirement Specifications for the ITMS applications including traffic management and traffic enforcement applications.
3) Low Level Design (including but not limited to) Application flows and logic including pseudo code, GUI design (screen design, navigation, etc.), Database architecture, including defining data structure, data dictionary as per standards laid-down by Government of India/ Government of Madhya Pradesh
4) Location of all field systems and components proposed at the junctions, (KML / KMZ file plotted on GIS platform like Google Earth etc.)
5) Detailed BOQ of all the equipment required to be installed in the field as well as in the Traffic Control Center for the ITMS. The ITMS System Integrator will optimize the quantity of the equipment (such as cameras, gantries/poles, junction boxes, UPSs etc.) required for different sub-systems of ITMS without compromising on the desired functionalities.
6) Height, foundation and locations of all field devices such as Junction Boxes, Traffic Signals, PA system, RLVD, SVD, ANPR and other sub-systems of ITMS.
7) Height and foundation of poles, cantilevers, gantry and other mounting structures for other field devices
8) Location of Network Provider's Point of Presence (PoP)
9) Design of Cables, Ducts routing, digging and trenching
10) Electrical power provisioning

### 2.4.2. Site Clearance obligations & other general provisions

#### 2.4.2.1. Survey and Commencement of Works

Prior to starting the site clearance, the ITMS System Integrator shall carry out survey of field locations as specified in **Annexure I - List of Locations,** for buildings, structures, fences, trees, existing installations, etc. The JSCL shall be fully informed of the results of the survey and the amount and extent of the demolition and site clearance shall then be agreed with the JSCL.

#### 2.4.2.2. Existing Traffic Signal system

The infrastructure of existing traffic signal systems including the aspects, controllers etc. shall be dismantled and replaced with the new systems which are proposed and required under the scope of the ITMS project. The existing equipment shall be handed over to JMC or its designated agency.

#### 2.4.2.3. Road signs

All existing road signs which are likely to be effected by the works are to be carefully taken down and stored. Signs to be re-commissioned shall be cleaned, provided with new fixings where necessary and the posts re-painted in accordance with JSCL guidelines. Road signs, street name plate, etc. damaged by the ITMS System Integrator during their operation shall be repaired or replaced by ITMS System Integrator at no additional cost.

#### 2.4.2.4. Electrical works and power supply

The ITMS System Integrator shall directly interact with electricity boards for provision of mains power supply at all project locations. The recurring electricity charges will be borne by ITMS System Integrator as per actual consumption. The ITMS System Integrator shall be responsible to submit the electricity bill including connection charge, meter charge etc. to the electricity board directly.

#### 2.4.2.5. Lightning protection measures

The ITMS System Integrator shall comply with lightning-protection and anti –interference measures for system structure, equipment type selection, equipment earthing, power, signal cables laying. The ITMS System Integrator shall describe the planned lightning-protection and anti –interference measures in the system design report.

Corresponding lightning arrester shall be erected for the entrance cables of power line, video line, data transmission cables. All crates shall have firm, durable shell. Shell shall have dustproof, anti-fouling, waterproof function & should be capable to bear certain mechanical external force.

Signal separation of low and high frequency; equipment's protective field shall be connected with its own public equal power bodies; small size/equipment signal lightning arrester shall be erected before the earthling. The Internal Surge Protection Device for Data Line Protection shall be selected as per zone of protection described in IEC 62305, 61643-11/12/21, 60364-4/5. Data line protection shall be used for security system, server data path and other communication equipment.

#### 2.4.2.6. Earthing System

All electrical components are to be earthen by connecting two earth tapes from the frame of the component ring and will be connected via several earth electrodes. The cable arm will be earthen through the cable glands. The entire applicable IT infrastructure i.e signal junction or pole or TCC shall have adequate earthing. Further, earthling should be done as per Local state/national standard in relevance with IS standard.

1) Earthing should be done for the entire power system and provisioning should be there to earth UPS systems, Power distribution units, AC units, etc. so as to avoid a ground differential. JSCL shall provide the necessary space required to prepare the earthing pits.
2) All metallic objects on the premises that are likely to be energized by electric currents should be effectively grounded.

3) There should be enough space between data and power cabling and there should not be any cross wiring of the two, in order to avoid any interference, or corruption of data.
4) The earth connections shall be properly made.
5) A complete copper mesh earthing grid needs to be installed for the server farm area, every rack need to be connected to this earthing grid. A separate earthing pit needs to be in place for this copper mesh.
6) Provide separate Earthing pits for Servers, & UPS as per the standards.

#### 2.4.2.7. Junction Box, Gantries, Poles and Cantilever

1) The ITMS System Integrator shall provide the junction boxes, gantries, poles and cantilever to mount the field devices like the cameras, traffic sensors, traffic light aspects, active network components, controller and UPS at all field locations, as per the specifications given in the RFP.
2) The Junction Box needs to be appropriately sized in-order to accommodate the systems envisaged at the Junctions, and the ITMS System Integrator should design the Junction box for 1.5 times the actual size the ITMS System Integrator requires for utilization under the ITMS project.
3) The additional 50% space in the Junction Box shall be available to JMC/JSCL to accommodate any future requirements.
4) The Junction Box for UPS with Battery bank needs to be considered separately.
5) It should be noted that the ITMS System Integrator would have designed the Junction box keeping in mind the scalability requirements of ITMS project, and the additional 50% volume needs to considered over and above such requirement
6) The junction box should be designed in a way that, separate compartment will be available for separate system (i.e. ITCS Controller, Active component, etc.). Each compartments shall have lock & key facility. There should be provision made to integrate the systems if required.
7) The junction boxes, gantries, poles and cantilevers will be aesthetically designed.

#### 2.4.2.8. Cabling Infrastructure

1) The ITMS System Integrator shall provide standardized cabling for all devices and subsystems in the field and Traffic Control Center.
2) ITMS System Integrator shall ensure the installation of all necessary cables and connectors between the field sensors /devices assembly, outstation junction box, for pole mounted field sensors /devices the cables shall be routed down the inside of the pole and through underground duct to the outstation cabinet.
3) All cables shall be clearly labelled with indelible indications that can clearly be identified by maintenance personnel. The proposed cables shall meet the valid directives and standards.

4) Cabling must be carried out per relevant BIS standards. All cabling shall be documented in a cable plan by the ITMS System Integrator.

#### 2.4.2.9. Zebra crossing and stop line marking

1) The ITMS System Integrator shall be required to undertake the Junction markings including edge lines, centre line, pedestrian markings for Zebra crossing and stop line, lane markings, directional arrow markings etc. at all junctions as per Ministry of Road Transport and Highways (MoRTH) and Indian Roads Congress (IRC) guidelines.
2) The ITMS System Integrator shall submit as part of the system design report, the detailed plan of undertaking this task including prior approvals for timings of road closure/ junction closure if required from the JMC.
3) The task of junction marking shall be carried out with minimum disruption of traffic, with appropriate signage informing the road users of any diversions/ road closures being undertaken.

#### 2.4.2.10. Design, Supply, Installation & Commissioning of the Field Equipment

The Scope includes Supply, Installation, Commissioning and Customization (as required) of various field systems comprising Intelligent Traffic Control System (ITCS) at Traffic Junctions, Traffic Junction Surveillance System, PA system, ANPR system, RLVD systems, Speed Violation Detection System, E-Challan system and other IT infrastructure required for successful operation of the ITMS solutions. Based on the System Design Document, the ITMS System Integrator will undertake the system configuration and customization in line with the changed, improved or specific requirements of JSCL and Jabalpur Traffic Police and JSCL including:

1) The implementation methodology and approach must be based on the global good practices in-order to meet the defined Service Levels during the operation.
2) Best efforts have been made to define major functionalities for each sub- system of ITCS. However, ITMS System Integrator should not limit its offerings to the functionalities proposed in this RFP and may to propose any functionality over and above what has already been given in this tender.
3) The ITMS System Integrator shall design the field level equipment architecture to ensure maximum optimization of cameras, network equipment, gantries, poles, cantilever, mounting infrastructures, power supply equipment including, electric meters and junction box.
4) Final approved/accepted solution for each component of ITMS solutions shall be accompanied with “System Configuration” document and the same should be referenced for installation of ITMS that are identified within the scope of this project.
5) The ITMS System Integrator shall be required to submit a detailed installation report post installation of all the equipment at approved locations. The report shall be utilized during the acceptance testing period of the project to verify the actual quantity of the equipment supplied and commissioned under the project.

6) The ITMS System Integrator shall be responsible for obtaining all permits and approvals necessary to install the ITMS components as per the approved design.
7) The sub-components included as part of the project for which field equipment needs to be deployed and integrated are given in the subsequent sections.
8) The ITMS System Integrator shall have to take approval from JSCL for schematic drawing of junction box, gantry, pole or any fabrication work.

### 2.4.3. Design, Supply, Installation & Commissioning of Field Equipment

#### 2.4.3.1. Intelligent Traffic Control System (ITCS)

The ITMS System Integrator shall design, implement, customize, integrate & maintain the Intelligent Traffic Control System at identified traffic junctions as provided in Section 8.1 of this RFP document. The broad scope of work to be covered under ITCS module will include the following, but is not limited to:

i. Supply and installation of vehicle detectors, controllers, Traffic light aspects, poles, gantries, cantilevers and other required equipment/accessories for successful operation of the ITCS for JSCL/Jabalpur Traffic Police.
ii. Procurement and supply of requisite licenses (Commercial-off-the-shelf-COTS) software required for successful functioning of the ITCS module.
iii. Configuration of traffic signal at each of the junction along with development of signal control plan for individual operations, coordinated signal plan for the junction in sync with the area wide signal plan for different operating conditions. The operating conditions may include different peak and off-peak conditions, special events, contingency plans etc.
iv. Third Party Audit of the ITMS implementation and its performance evaluation as per SLA's defined in the RFP.

Details on technical and functional specifications of ITCS, have been provided at Section 5.1 and **Error! Reference source not found.** of this RFP document.

#### 2.4.3.2. PA system

The broad scope of work to be covered under this module will include the following, but is not limited to:

1) The ITMS System Integrator shall supply and install PA system at the locations as provided in Section 8.1 of this RFP document. PA systems shall be controlled from the TCC. The purpose of the PA system shall be to provide pre-recorded and real time announcements in case of emergencies, disasters etc.at identified traffic junctions.
2) Details on technical and functional specifications of PA system, have been provided at Section 5.2 of this RFP document.

#### 2.4.3.3. Traffic Junction Surveillance System

The broad scope of work to be covered under this module will include the following, but is not limited to:

1) The ITMS System Integrator shall install Traffic Surveillance cameras at identified junctions for traffic monitoring and management at identified junctions Section 8.1 in this RFP document.
2) The ITMS System Integrator shall undertake due diligence for selection and placement of traffic surveillance cameras to ensure the full coverage of the traffic junction along with all associated junction arms, accuracy of the information captured on the field and for rugged operations.
3) The ITMS System Integrator shall design, supply, and install the traffic surveillance cameras as defined in the RFP, all wiring connections for the system shall be installed by the ITMS System Integrator. The ITMS System Integrator shall supply all of the necessary equipment for the camera operations including camera housings and mountings, camera poles, switches, cabling, and shall make the final connections to the junction box.
4) The ITMS System Integrator shall be responsible for providing all the necessary IT infrastructure for monitoring, recording, storage & retrieval of the infraction information at TCC or any other location as specified in the RFP.

Details on technical and functional specifications of Traffic Junction Surveillance system, have been provided at Section 5.3 of this RFP document.

#### 2.4.3.4. Red Light Violation Detection (RLVD) System

The broad scope of work to be covered under this module will include, but not limited to, the following:

5) The ITMS System Integrator shall install the RLVD Systems at the identified traffic junctions as provided in Section 8.1 in this RFP document. This system shall capture the following infractions, at the minimum, at these junctions:
    a. Red light violation
    b. Stop line violation
    c. Speed limit violation
    d. Wrong way driving
    e. Triple riding on two-wheelers
    f. Driving two-wheelers without helmet
6) The ITMS System Integrator shall design, supply, and install the RLVD system as defined in the RFPs, all wiring connections to the traffic signal controllers and to the camera platforms shall be installed by the ITMS System Integrator. The ITMS System Integrator shall supply all of the necessary equipment for the camera and detection system, including but not limited to: computers, ancillary camera equipment, camera housings, camera poles, warning signs and shall make the final connections to the camera.

7) The ITMS System Integrator shall be responsible for providing all the necessary IT infrastructure for analysis, storage & retrieval of the infraction information at TCC or any other location as specified in the RFP.

8) Details on technical and functional specifications of Red Light Violation Detection (RLVD) system have been provided at Section 5.4 of this RFP document.

#### 2.4.3.5. Automatic Number Plate Recognition (ANPR) System

The broad scope of work to be covered under this module will include the following, but not limited to:

1) The ITMS System Integrator shall install the ANPR Cameras at identified location as provided in Section 8.2 of this RFP document. This system shall automatically capture the license number plate of the vehicle at these locations.

2) The ITMS System Integrator shall design, supply, and install the ANPR camera system as defined in the RFPs, all camera accessories such as IR Illuminators, camera housing and mounting shall be installed by the SI. The ITMS System Integrator shall supply all of the necessary equipment for the camera and local processing system, including but not limited to: computers, local storage, and ancillary camera equipment, camera poles, warning signs and shall make the final connections to the camera.

3) The ITMS System Integrator shall be responsible for providing all the necessary IT infrastructure for detection, analysis, storage & retrieval of the infraction information at TCC or any other location as specified in the RFP.

4) Details on technical and functional specifications of ANPR Cameras have been provided at Section 5.5 of this RFP document.

#### 2.4.3.6. Speed Violation Detection System

The broad scope of work to be covered under this module will include the following, but is not limited to:

1) The ITMS System Integrator shall install the Speed Violation Detection Systems at identified locations as provided in Section 8.3 of this RFP document. This system shall capture the infractions of speed violations at these locations.

2) The ITMS System Integrator shall design, supply, and install the speed violation detection system as defined in the RFPs, all wiring connections for the system shall be installed by the ITMS System Integrator. The ITMS System Integrator shall supply all of the necessary equipment for the camera and detection system, including but not limited to, ancillary camera equipment, camera housings, camera poles, warning signs and shall make the final connections to the camera.

3) The solution proposed by the ITMS System Integrator shall have the capability to seamlessly integrate with the E-Challan system as proposed as a part of this project.

4) The ITMS System Integrator shall be responsible for providing all the necessary IT infrastructure for analysis, storage & retrieval of the infraction information at TCC or any other location as specified in the RFP.

5) Details on technical and functional specifications of Speed Violation Detection System are provided at Section 5.6 of the RFP document.

#### 2.4.3.7. E-Challan System

The ITMS System Integrator shall be responsible to undertake following activities, but not limited to:

a) Design, development and implementation of e-Challan Software Solution for end-to-end e-challan management

b) Integration with external systems including MP transport/RTO database, national Vahan/Sarathi database, MP online portal, 311 mobile app, MP treasury portal, traffic police website, etc.

1) The E-Challan system shall be configured to automatically generate traffic challans based on infractions received from the installed field equipment including RLVD, ANPR and SVD systems.

2) The ITMS System Integrator shall ensure that the proposed system has the capability for complete automation of the challan processing/ printing process with manual verification. This shall involve automatic capturing of relevant information from the evidence generated by the traffic enforcement system and integrating it with the vehicle database (MP Transport, national Vahan database or any other database).

3) The detailed functional and technical specification details of the E-Challan system are provided at Section 5.7 of this RFP document.

### 2.4.4. Provision for Network Connectivity

1) The ITMS System Integrator shall provide a detailed network architecture of the overall ITMS solution, incorporating findings of detailed site survey. The network so envisaged should be able to provide real time data streams to the TCC. All the components of the technical network architecture should be of industry best standard and assist in ensuring that all the connectivity SLAs are adhered to during the O&M phase.

2) A combination of network technology including leased lines, OFC Network, Wireless broadband and Mobile Network technologies may be used to provide seamless connectivity to all field devices. Connectivity to Data Center and TCC shall be provided with scalable capacities to allow for expansion in the future.

3) Bidder shall be allowed to procure bandwidth related services from multiple Telecom Service Providers.

4) The ITMS System Integrator is required to provide connectivity for all the components of ITMS including the following:

a) Connectivity for locations with ITCS, Traffic Junction surveillance system, PA system and RLVD system
b) Connectivity for locations with ANPR system
c) Connectivity for locations with SVD system
d) Internet Leased line connectivity for Data Center & TCC

The Bidders are also required to do the estimation of bandwidth requirements considering following benchmark parameters:

| Sl. # | ITMS Solution/Module | Approximation for consideration |
|---|---|---|
| 1. | Junctions with the following systems:<br>• ITCS<br>• PA system<br>• Traffic Junction Surveillance System<br>• RLVD System | Minimum 12 Mbps per junction |
| 2. | Locations with ANPR System | Minimum 4 Mbps per location |
| 3. | Locations with Speed Violation Detection System | Minimum 4 Mbps per location |

5) The actual bandwidth requirement to cater the above mentioned bandwidth parameters and to meet SLAs would be calculated by the ITMS System Integrator and the same shall be clearly proposed in the technical proposal with detail calculations. JSCL also requires the ITMS System Integrator to meet the parameters of video feed quality, security & performance and thus the Bidders should factor the same while designing the solution. JSCL reserves the right to ask the ITMS System Integrator to increase the bandwidth if the provided bandwidth is not sufficient to give the functionality of the system mentioned in the RFP and adhere to the SLAs.

### 2.4.5. Traffic Control Center and Data Center

#### A. Traffic Control Center (TCC)

The ITMS System Integrator shall set up a Traffic Control Centre (TCC) for the ITMS project, at the building provided by JSCL. The Traffic Control Center is planned to be set up in the Jabalpur. The final location for the TCC will be intimated during the design phase of ITMS. JSCL shall make available approximate 1750 square feet built-up space for setting up of TCC. The key components of the TCC will be as follows:

- Video wall
- Operators workstations
- Connectivity
- Network printers
- Video conferencing solution
- UPS etc.
- Servers and other ICT infrastructure

The scope of work of the ITMS System Integrator shall include civil & interior works such as masonry work, raised flooring (for server room), false ceiling (for Traffic Operation Room), partitioning work, office workstations, furniture and fixtures, painting, lighting, air-conditioning etc. The ITMS System Integrator shall provide The TCC shall tentatively comprise the following rooms/partitions:

- Traffic Operations Room (approx. 1200 sq. ft)
- War/Meeting Room (approx.150 sq. ft)
- Rack & Server Room (approx.150 sq. ft)
- Stationary/Dispatch room (approx.150 sq. ft)

The above list of rooms and respective area are indicative, and actual no. of rooms and their area shall be designed by ITMS System Integrator during implementation phase in consultation with JSCL/Jabalpur Traffic Police.

**B. Data Center (DC)**

The ITMS System Integrator shall supply and install hosting infrastructure for ITMS (including but not limited to servers, storage, operating systems, database, security, networking, connectivity, rack, etc.) at Traffic Control Center (TCC). JSCL shall provide adequate space for servers and other IT infrastructure. The ITMS System Integrator shall also maintain and manage the Data Center during the Contract Period.

Detailed requirement and the Bill of Materials for TCC and DC are provided at Section 7 of this RFP Part 2.

### 2.4.6. Implementation of the Information security policy

The ITMS System Integrator shall prepare the Information Security Policy for the overall Project and the same would be reviewed and then finalized by JSCL & its authorized committees. The Security policy needs to be submitted by the ITMS System Integrator within 1st quarter of the successful Final Acceptance Tests.

### 2.4.7. Capacity Building and Training

The ITMS System Integrator is required to conduct a proper training need analysis of all the concerned staff and draw up a systematic training plan in line with the overall Project Plan. For all these training programs the ITMS System Integrator has to provide necessary course material and reference manuals (user/maintenance/ administration) along with training schedules for all phases. The training shall be held at various office/department locations as finalised by JSCL.

Trainings would be of two types for different phases of the Project:

1) **Functional Training**

This training would focus on the use of the software of the various ITMS components at Traffic Control Center, so that the users are aware of all the operations of the ITCS and other Traffic Enforcement solutions. The training will be provided to about10-20 staff identified by JSCL/Jabalpur Traffic Police.

**2) Administrative Training**

This training would focus on the administration of ITCS and other Traffic Enforcement solutions and would be imparted to about 10-20 staff identified by the JMC/JSCL/Jabalpur Traffic Police.

### 2.4.8. Integration with ICCC and other external systems

The ITMS System Integrator shall provide open APIs / SDKs / web services and extend all necessary support for integration with city level Integrated Control and Command Center (ICCC) and other external systems, during the contract period.

### 2.4.9. Acceptance Testing

JSCL shall review and finalize the detailed acceptance test plan proposed by the ITMS System Integrator. JSCL would also conduct audit of the process, plan and results of the Acceptance Test carried out by the ITMS System Integrator for both IT & non-IT components.

All acceptance testing, project review and monitoring shall be enabled through a Project Management Unit (PMU) nominated by JSCL.

Commissioning shall involve the completion of the site preparation, supply and installation of the required components and making the Project available to the JSCL and Jabalpur Traffic Police for carrying out live Operations and getting the acceptance of the same from the JSCL.

Testing and Commissioning shall be carried out before the commencement of Operations.

### 2.4.10. Final Acceptance Testing

The final acceptance shall cover 100% of the ITMS Project, after successful testing by the JSCL and Jabalpur Traffic Police or the appointed PMU. A Final Acceptance Test Certificate (FAT) shall be issued by JSCL to the ITMS System Integrator.
Prerequisite for Carrying out FAT activity:

1) Detailed test plan shall be developed by the ITMS System Integrator and approved by JSCL. This shall be submitted by ITMS System Integrator before FAT activity to be carried out.
2) All documentation related to ITMS Project and relevant acceptance test document (including IT Components, Non IT Components etc.) should be completed & submitted before the final acceptance test to the JSCL/Jabalpur Traffic Police.
3) The training requirements as mentioned should be completed before the final acceptance test.
4) Successful hosting of Application and MIS Software.
5) For both IT & Non-IT equipment's / software manuals / brochures / Data Sheets / CD / DVD / media for all the ITMS project supplied components.

The FAT shall include the following:

1) All hardware and software items must be installed at respective sites as per the specification.
2) Availability of all the defined services shall be verified.
3) The ITMS System Integrator shall be required to demonstrate all the features / facilities / functionalities as mentioned in the RFP.
4) The ITMS System Integrator shall arrange the test equipment required for performance verification, and will also provide documented test results.
5) The ITMS System Integrator shall be responsible for the security audit of the established ITMS system to be carried out by a certified third party as agreed by JSCL.

Any delay by the ITMS System Integrator in the Final Acceptance Testing shall render him liable to the imposition of appropriate Penalties. However, delays identified beyond the control of ITMS System Integrator shall be considered appropriately and as per mutual agreement between JSCL and ITMS System Integrator.

### 2.4.11. System Documents and User Manuals

The ITMS System Integrator shall provide documentation, which follows the ITIL (Information Technology Infrastructure Library) standards or IEEE/ISO Acceptable Documentation Standards. This documentation should be submitted as the project undergoes various stages of implementation and provide all traceability documentation on changes done on the IT components during the course of the implementation of the solution. Indicative list of documents include:

1) Project Commencement: Detailed Project Plan should provide micro level activities with milestones & deadlines.
2) Delivery of Material: Original Manuals from OEMs.
3) Training: Training Material will be provided which will include the presentations used for trainings and also the required relevant documents for the topics being covered.
4) Process Documentation: The ITMS System Integrator shall be responsible for preparing process documentation related to the operation and maintenance of each and every component of the ITMS Project. The prepared process document shall be formally signed off by JSCL before completion of final acceptance test.
    a) The ITMS System Integrator shall document all the installation and commissioning procedures and provide the same to the JSCL within one week of the commissioning of ITMS Project.
    b) The ITMS System Integrator shall submit a complete set of Single Line diagram, a complete cabling system layout (as installed), including cable routing, telecommunication closets and telecommunication outlet/ connector designations. The layout shall detail locations of all components and indicate all wiring pathways.
    c) Manuals for configuring of switches, routers etc. shall be provided by the selected ITMS System Integrator.
    d) The ITMS System Integrator shall be responsible for documenting configuration of all devices and keeping back up of all configuration files, so as to enable quick recovery in case of failure of devices.

### 2.4.12. Operations and Maintenance during Contract Period

The ITMS System Integrator is required to depute a dedicated team of professionals to manage the Project and ensure adherence to the required SLAs. ITMS System Integrator shall provide operations and maintenance services for the software, hardware and other IT and Non-IT infrastructure installed as part of ITMS project during the Contract Period, including one (1) year of warranty period after “Go-Live”.

The activities to be carried out by the ITMS System Integrator during the Contract Period shall include, but not limited, to the following:

1) Monitor the operation of traffic signals and take suitable interventions as required such as change of signal plan, change of signal timing from TCC enabling green corridor etc.
2) Periodic change of signal plans and other configurations parameters on directions of JSCL/Jabalpur Traffic Police.
3) Monitor health of traffic signal equipment and initiate immediate corrective action in any of any fault.
4) Process e-challans for the violation captured by ITMS, including generation, verification, printing. Dispatch and tracking of e-challans.
5) Tracking the record of payment received against e-challans and print & dispatch reminder for pending challans.
6) Track specified vehicles (stolen vehicles or vehicles involved in crimes) based on ANPR data.
7) Undertake configuration management for all systems.
8) Undertake analytics of traffic data and generate various MIS and analytics reports.
9) Undertake system admin, database admin, back up, archival, network admin activities.
10) Comprehensive maintenance of all equipment/sub-system during Contract period.
11) Set up a Call center for verification of addresses, pending challans, reminders, public help regarding challan etc. The Call center shall be one-seater and shall work in 2 shifts 7 days a week.

#### 2.4.12.1. Project Management Services

The ITMS System Integrator will be required to provide Project management services to support the JSCL and Jabalpur Traffic Police in performing their day-to-day functions related to this system.

ITMS System Integrator is required to depute a dedicated, centralised project management and technical team for the overall Project management and interaction with JMC, JSCL and Jabalpur Traffic Police. An indicative resource requirement for this centralised administration of the Project is as follows.

| Sl. # | Name of Position/Role | Total No. of Resources | Deployment Period (Implementation Phase) | Deployment Period (O&M Phase) |
|---|---|---|---|---|
| 1. | Project Director | 1 | 50% (On-site and Off-site, As per project need) | As per project need, for attending important meetings etc. |
| 2. | Project Manager | 1 | 100% (Full time On-site) | 100% (Full time On-site) |
| 3. | Technical expert- Intelligent Traffic Management Systems | 1 | • 70% (On-site)<br>• 30% (Off-site) | As per project requirement. |
| 4. | Technical Expert- Traffic Control Center | 1 | • 70% (On-site)<br>• 30% (Off-site) | As per project requirement. |

| Sl. # | Name of Position/Role | Total No. of Resources | Deployment Period (Implementation Phase) | Deployment Period (O&M Phase) |
|---|---|---|---|---|
| 5. | Technical Expert – Network & Security | 1 | • 70% (On-site)<br>• 30% (Off-site) | As per project requirement. |
| 6. | Technical Expert – Server, Storage, EMS & Application | 1 | • 70% (On-site)<br>• 30% (Off-site) | As per project requirement. |
| 7. | TCC Operators (O&M Phase) | 15* | NA | 100% (Full time On-site) |

N.B: * *These resources shall be deployed in shifts as per requirement.*

The above-mentioned manpower effort estimation/requirement is indicative and if the Bidder believes that to meet the SLAs, additional capacity is required, the same may be provided as scope of the project.

The minimum qualification criteria are provided as below:

| Sl. # | Name of Position/Role | Minimum Qualification & Experience |
|---|---|---|
| 1. | Project Director | • BE / B.Tech. (with Masters Degree preferred)<br>• 15+ Years of Experience<br>• 10+ Years of experience in large project management<br>• Should have experience of minimum 1 assignment of implementation of Intelligent Traffic Management System in India / globally |
| 2. | Project Manager | • BE / B.Tech<br>• 10+ Years of Experience<br>• 5+ Years of experience in large ICT project experience<br>• Minimum 1 large similar (similar to Intelligent Traffic Management Project) project experience |
| 3. | Technical expert- Intelligent Traffic Management Systems | • BE / B.Tech<br>• Minimum 10 years of experience, Min. 5 years of experience in traffic domain<br>• Should have experience of at least one project in design implementation of Intelligent (preferably Intelligent) Traffic Management System<br>• Experience in setting up Command and Control Centre would be added advantage |
| 4. | Technical Expert- Traffic Control Center | • BE / B.Tech<br>• Experience of 3+ Years in Command and Control Center |
| 5. | Technical Expert – Network & Security | • BE / B.Tech.<br>• Minimum 10 years of experience, Min. 5 years of experience in IT Networks |

| Sl. # | Name of Position/Role | Minimum Qualification & Experience |
|---|---|---|
| | | • Should have experience of at least one project in design implementation of large IT Network for similar project<br>• Certification in Networking would be added advantage |
| 6. | Technical Expert – Server, Storage & Application | • BE / B.Tech.<br>• 5+ Years of Experience in Server Management |
| 7. | TCC Operators (O&M Phase) | • Graduate<br>• Minimum 2 years of relevant experience with proper trainings on ITMS |

#### 2.4.12.2. Provision of the Operational Manpower to support Operations at Traffic Control Center

The ITMS System Integrator is required to provide suitable manpower to monitor the data feeds at Traffic Control Centre and support JSCL/ Jabalpur Traffic Police in operationalisation of the ITMS project.

The exact role of these personnel and their responsibilities would be defined and monitored by JSCL/Jabalpur Traffic Police. The ITMS System Integrator shall be required to provide such manpower meeting following requirements:

1) All such manpower shall be minimum graduate pass
2) All such manpower shall be without any criminal background / record.
3) JSCL reserves the right to carry out background check of the personnel proposed on the Project for verification of criminal record, at the beginning of deployment or during deployment.
4) ITMS System Integrator shall have to replace any person, if not found suitable for the job.
5) All the manpower shall be adequately trained on the working of ITMS project and TCC.

The TCC operation support staff shall work from the TCC or any other locations as identified by JSCL/Jabalpur Traffic Police from where the back office operations for ITMS can be undertaken.

An indicative list of activities to be performed by the TCC operation staff are provided in **Annexure II.**

#### 2.4.12.3. Physical Infrastructure Management and Maintenance Services

All the devices that will be installed in the ITMS Project as part of the physical infrastructure should be SNMP enabled and shall be centrally and remotely monitored and managed on a 24x7x365 basis. Industry leading infrastructure management solution should be deployed to facilitate monitoring and management of the ITMS Infrastructure on one integrated console. The physical infrastructure management and maintenance services shall include:

1) Proactive and reactive maintenance, repair and replacement of defective components (IT and Non-IT/ Hardware and Software). The cost for repair and replacement shall be borne by the ITMS System Integrator.

2) The ITMS System Integrator shall have to stock and provide adequate onsite and offsite spare parts and spare component to ensure that the uptime commitment as per SLA is met. To provide this service it is important for the ITMS System Integrator to have back to back arrangement with the OEMs. The
3) Component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA). In case the selected ITMS System Integrator fails to meet the above standards of maintenance, there will be a penalty as specified in the SLA.
4) The ITMS System Integrator shall also maintain records of all maintenance of the system and shall maintain a logbook on-site that may be inspected by the Jabalpur Traffic Police/JSCL on a regular basis.

#### 2.4.12.4. Project Handover

The ITMS System Integrator shall provide proper transfer of technology to JSCL/Jabalpur Traffic Police for upkeep of signals post Contract Period. The ITMS System Integrator shall carry out project hand-over of the system at the end of contractual period along with all documentation required to operate and maintain the system ITMS System Integrator will supply to the JSCL/ Jabalpur Traffic Police the following before the expiry of the contract:

1) Information relating to the current services rendered and data relating to the performance of the services; Entire documentation relating to various components of the Project, any other data and confidential information related to the Project;

2) All other information (including but not limited to documents, records and agreements) relating to the products & services related to the project to enable Police Department and its nominated agencies, or its replacing Successful ITMS System Integrator to carry out due diligence in order to transition the provision of the Project Services to Police Department or its nominated agencies, or its replacing Successful ITMS System Integrator (as the case may be).

#### 2.4.12.5. Other

1) ITMS System Integrator to ensure that for operation and maintenance team has the uniform with the identity card etc.
2) ITMS System Integrator will have to arrange vehicles and other requisite such as ladder of adequate feet length, etc. for carry out implementation and maintenance work (including transportation of items required for Project) during the Contract Period.
3) ITMS System Integrator will pay the charges related to Electric Meter (if installed new) and recurring electricity charges. These charges will be then reimbursed by JSCL.
4) ITMS System Integrator will implement the attendance system for the attendance of Project team proposed in this document. The ITMS System Integrator will share the attendance report with the JSCL at the end of the month.
5) The ITMS System Integrator shall be responsible to file an FIR in nearest Traffic Police Station for any theft or physical damage of product under ITMS Project (including cable & accessories) due to any unforeseen reason. The ITSM System Integrator shall

have to submit the copy of FIR to JSCL within 7 days from the date of filing the FIR. The ITMS System Integrator shall be responsible for replacement/repair of any stolen, damaged, vandalized equipment at its own cost during the Contract Period.

6) The ITMS System Integrator has to procure Insurance of all ITMS equipment/system during the Contract Period of the project at its own cost to safeguard the equipment/systems from all elements of risk and disruptions.

## 2.5. Roles & Responsibilities of Key Project Stakeholders

Brief summary of roles and responsibilities of key stakeholders involved in the project is as below:

| Stakeholder | Role Description |
|---|---|
| Jabalpur Smart City Limited (JSCL) | • Co-ordination with Police & Transport departments for implementation of the project<br>• Co-ordination with ITMS System Integrator for implementation of the project<br>• Co-ordination with concerned department(s) to handover the sites to ITMS System Integrator<br>• Release payments as per the certification of up time, down time of signals<br>• Extend reasonable support to ITMS System Integrator for applying wired / wireless communication connections, power connections.<br>• Monitor the project progress in association with Traffic police department<br>• Provide built-in offices space for the Traffic Control Centre |
| Jabalpur Traffic Police | • Appoint a dedicated Nodal Officer (Traffic Police). Until the Nodal Officer is appointed or as and when the post is vacant, DSP (Traffic) will be the Nodal Officer (Traffic Police)<br>• Monitor the project progress in association with JSCL<br>• Phasing of the Sites for implementation in consultation with JSCL. |
| ITMS System Integrator | • Field survey to understand the detailed requirements<br>• Prepare the Project Plan in consultation with the JSCL and other stakeholders<br>• Mobilization of the team and take up the work<br>• Deliver the Project Milestones as defined<br>• Train JSCL officials, Traffic police & other concerned departments staff<br>• Connect existing signals and new system and connecting them to Traffic Control Centre<br>• Apply for electricity connection for requisite and payment of electricity charges throughout the Contract period.<br>• Apply for communication (connectivity) for all locations in the name of Traffic police and payment of the communication (connectivity) charges during Contract Period. |

| Stakeholder | Role Description |
|---|---|
| | • Transfer of all the assets created within 30 days from the date of completion of the Acceptance Test through proper sale Invoice.<br>• Conduct / appoint a third party for Acceptance Testing<br>• Customize, Configure, Maintain and update the ITMS Applications during the contract period.<br>• Train the identified personnel of JSCL, Traffic Department on operating and maintaining the complete system.<br>• Deployment of required experts who will provide daily support to TCC operators and handholding support<br>• Prepare periodic (monthly, quarterly and annual reports) |

# 3. Implementation Plan & Project Timelines

## 3.1. Implementation Plan

The implementation of the ITMS Project will be undertaken in two phases, viz. Implementation phase and Operation & Maintenance (O&M) Phase. The duration for both phases shall be as under:

- Implementation phase - 4 months
- Operation & Maintenance phase – 36 months

The implementation phase will be further divided into two phases – Pilot phase and Roll-out phase.

In the Pilot phase, development, testing and pilot implementation of ITMS modules will be undertaken by the ITMS System Integrator. Post successful pilot implementation of ITMS solutions and their Sign-Off by JSCL/Jabalpur Police, the ITMS System Integrator will Roll-out the implementation of ITMS solutions.

### 3.1.1. Implementation Phase

#### A. Pilot Implementation phase

The ITMS solutions will initially be deployed, installed and commissioned at identified locations/routes as described in the table below:

*Table 3-1: Milestones for Pilot Implementation*

| Milestones for Pilot Implementation | Coverage |
|---|---|
| **TRAFFIC MANAGEMENT** | |
| Intelligent Traffic Control System | 2 locations |
| PA system | 2 locations |
| Traffic Junction Surveillance system | 2 locations |
| **TRAFFIC ENFORCEMENT** | |
| Red Light Violation Detection (RLVD) System | 2 locations |
| Automatic Number Plate Recognition System (ANPR) System | 2 locations |
| Speed Violation Detection System | 2 locations |
| E-Challan System | Application Software |

Gaps identified during the pilot implementation will be addressed by making necessary changes to the ITMS applications, before embarking on the rollout of Implementation.

#### B. Roll-out of Implementation Phase

Once the Pilot Implementation is successfully completed and accepted (Sign-off) by JSCL/Jabalpur Police, the ITMS System Integrator will progressively implement the ITMS Solutions for the remaining scope as described in the table below:

**Table 3-2: Milestones for Roll-out of Implementation**

| Milestones for Roll-out Implementation | Coverage |
|---|---|
| Traffic Management | |
| Intelligent Traffic Control System | For all remaining locations |
| Public Address (PA) system | For all remaining locations |
| Traffic Junction Surveillance system | For all remaining locations |
| **Traffic Enforcement** | |
| Red Light Violation Detection (RLVD) System | For all remaining locations |
| Automatic Number Plate Recognition System (ANPR) System | For all remaining locations |
| Speed Violation Detection System | For all remaining locations |

### 3.1.2. Operation & Maintenance (O&M) Phase

The O&M phase will commence from the date of “Go-Live” of ITMS solutions. The O&M phase will be for a period of 3 years. The ITMS System Integrator will operate and maintain the ITMS solutions for contract duration of three years from the date of “Go-Live”.

## 3.2. Project Timelines

The ITMS System Integrator will be responsible for the implementation of the project within the timelines as indicated in the table below.

**Table 3-3: Project Timelines**

| Project Milestones | Timelines |
|---|---|
| **Implementation Phase** | |
| Signing of Contract | T |
| Submission of Detailed Project Plan document | $T_1$ = T + 1 week |
| Submission of System Design document (SDD) including Software Requirement Specifications (SRS) | $T_2$ = $T_1$ + 2 weeks |
| Approval of SDD by JSCL | $T_3$ = $T_2$ + 1 week |
| Conducting Pilot implementation of ITMS solutions as per the coverage provided in Table **3-1**. | $T_4$ = $T_3$ + 4 weeks |
| Acceptance /Sign-Off of Pilot implementation by JSCL | $T_5$ = $T_4$ + 1 week |
| Roll out of ITMS solutions ("**Go-Live**"), as per the coverage provided in **Table 3-2** | $T_6$ = $T_5$ + 6 weeks |
| Acceptance /Sign-Off of Complete implementation by JSCL | $T_7$ = $T_6$+ 1 week |
| **Operation & Maintenance Phase** | |
| Operation and Maintenance of ITMS solutions | $T_7$ + 3 years |

Where "T" is the date of Signing of Contract between JSCL and ITMS System Integrator.

# 4. Payment Milestones

## 4.1. Payment during Implementation Phase

The payment milestone for ITMS System Integrator during Implementation phase shall be as under:

| Sl. # | Payment Components | Payment Terms |
|---|---|---|
| 1. | ITMS Software solutions, licenses etc. as per Bill of Materials, including<br>• Traffic Management Components such as<br>  ○ ITCS<br>  ○ PA system<br>  ○ Traffic Junction Surveillance System<br>• Traffic Enforcement Components such as<br>  ○ ANPR<br>  ○ RLVD<br>  ○ SVD<br>  ○ E-Challan system | The payment for ITMS Software solutions will be made as below:<br>• 60% of the solution CAPEX price on acceptance of pilot implementation of all solutions<br>• 30% of the solution CAPEX price on 'Go-Live' implementation of all solutions<br>• 10% of the solution CAPEX price upon completion of 3 months from 'Go-Live' date. |
| 2. | Hardware and system software Components, as per Bill of Materials, including<br>• Traffic Management Components such as<br>  ○ ITCS<br>  ○ PA system<br>  ○ Traffic Junction Surveillance System<br>• Traffic Enforcement Components such as<br>  ○ ANPR<br>  ○ RLVD<br>  ○ SVD<br>  ○ Servers, storage, OS, RDBMS<br>  ○ Desktops workstations, MFP, Colour printer etc. as described in BoM and as per proposed solution of ITMS System Integrator | The payment for hardware and system software components will be made as below:<br>• 60% of the CAPEX price of corresponding items on acceptance of delivery & commissioning* of the respective item<br>• 30% of the CAPEX price of corresponding items on 'Go-Live' implementation of all ITMS solutions<br>• 10% of the CAPEX price of corresponding items upon completion of 3 months from 'Go-Live' date. |
| 3. | Other costs, including<br>• Managed services for Data Center and TCC components (hardware and software etc.)<br>• EMS<br>• Integration with City ICCC<br>• Training | The payment for other costs will be made as below:<br>• 100% of the CAPEX price on completion of execution/commissioning and 'Go-Live' |

| Sl. # | Payment Components | Payment Terms |
|---|---|---|
| | • Manpower Deployment during implementation phase<br>• Other line items, as per the Financial Proposal of ITMS System Integrator | |

* Commissioning would mean that the item has been put to its desired functional use and has been accepted by JSCL.

## 4.2. Payment during O&M Phase

The payment milestone for ITMS System Integrator during O & M phase shall be as under:

| Sl. # | Payment Heads | Payment Terms |
|---|---|---|
| 1. | Payments during O& M Phase | • On quarterly basis post completion of the quarter |

All payments shall be made by JSCL after obtaining a no-objection certification from Jabalpur Traffic Police regarding the deliverables carried out by the ITMS System Integrator, subject to any applicable deductions.

# 5. Functional and Technical Requirements

## 5.1. Intelligent Traffic Control system (ITCS)

### 5.1.1. Functional Requirements Specifications of ITCS

The Intelligent Traffic Control System will have the following building blocks:

- Traffic Signal Controller
- Vehicle Detectors and Counter & Classification
- Communication Network

#### 5.1.1.1. Traffic Signal Controller

1) The Traffic Signal Controller equipment is a 32 bit or 64-bit microcontroller with solid state traffic signal lamp switching module with the ability to program any combination of traffic signal stages, phases and junction groups. The controller will ideally have a conflict monitoring facility to ensure that conflicting, dangerous are pre-flagged at the programming stage and these are disallowed even during manual override phase.

2) The Traffic Signal Controller will be Intelligent so that it can be controlled through the central traffic control center as an individual junction or as part of group of traffic junctions along a corridor or a region. The signal controller design must be flexible for the junction could be easily configured to be part of any corridor or group definition and could be changed through central command controller easily

3) Site specific configuration data will be stored in a non-volatile memory device (FLASH memory) easily programmable at the site through keypad or laptop. A minimum of 512KB flash memory and 128KB RAM will be provided. Volatile memory will not be used for storing the junction specific plans or signal timings.

4) All timings generated within a traffic signal controller will be digitally derived from a crystal clock which will be accurate to plus or minus 100 milliseconds.

5) The controller will provide a Real Time Clock (RTC) with battery backup that set and update the time, date and day of the week from the GPS. The RTC will have minimum of 10 years battery backup with maximum time tolerance of +/- 2 sec per day.

6) The controller will have the facility to update the RTC time from ITCS server, GPS and through manual entry.

7) The traffic signal system including controller will have provision for audio output tones and should be disabled friendly.

8) The controller will be capable of communicating with the ITCS server through Ethernet on a managed leased line network or any other appropriate stable communication network.

### A. Police Panel

The controller will provide the following facilities in a separate panel with provision for lock & key arrangements for use by the Traffic Police.

1) Four Hurry Call switches: The Hurry Call mode will provide the means to force the controller to a defined stage, without violating safety clearances. A preemption input may be used to demand the Hurry Call mode to give right of way to emergency vehicles. It should be possible to configure the Hurry Call switches to any stage as per site requirements.
2) One Forced Flash Switch: Activation of this switch should force the signal to Flashing Amber/Flashing Red.
3) One Auto/Manual Switch: Activation of this switch should enable manual operation of the controller. Deactivation of the manual switch will continue from the current stage without interruption.
4) One Manual Advance Pushbutton Switch: In manual operation mode, the stages appear in the sequence specified in the signal plan timetable. Activating the pushbutton switch will terminate the currently running stage and start the next, without violating safety clearances.
5) One Junction OFF Switch: Activating this switch should put OFF all signal lamps. On deactivation of the switch the traffic signal controller will resume its normal operation without violating any safety clearances.

### B. Modes of Operation

The traffic signal controller will have the following modes of operation:

1) Fixed Time: In fixed time (pre-timed) mode the traffic signal controller will execute stage timings according to the site-specific timetable maintained in the traffic signal controller FLASH memory. Inputs from vehicle detectors will be ignored in this mode and no preemption will be made on any stage. Cycle time remains constant in every cycle execution for a given time period.
2) Vehicle Actuation with All Stages Preemption: In the vehicle actuation with all stages preemption mode, the traffic signal controller will execute stage timings as per demand from vehicle detectors within the constraints of Minimum Green, Maximum Green running period for the stage and Cycle time stored in the traffic signal controller FLASH memory. Preemption will be possible for all demand actuated stages. Cycle time may vary in every cycle execution.
3) Semi-Actuation (Vehicle Actuation with Split Cycle length): In the semi-actuation mode, the traffic signal controller will execute stage timings in the vehicle actuated stages as per demand from vehicle detectors within the constraints of Minimum Green, Maximum Green running period for the stage and Cycle time stored in the traffic signal controller FLASH memory. All other stages will execute the Maximum

green time configured for the stage. Preemption will be possible for all demand actuated stages. Cycle time may vary in every cycle execution.

4) Stage Skipping: The traffic signal controller will not execute the stage enabled for skipping when there is no vehicle demand registered for the stage till clearance amber time of the previous stage.

5) Vehicle Actuation with Fixed Cycle length: In vehicle actuation with fixed cycle length mode, the traffic signal controller will execute stage timings as per demand from vehicle detectors within the constraints of Minimum Green, Maximum Green running period for the stage and Cycle time will be maintained constant during a given timeslot. Preemption for all demand actuated stages except for Priority Stage will be possible.

**C. Input and Output facilities**

1) Lamp Switching: The controller will have maximum 64 individual output for signal lamp switching, configurable in 16, 32, 48 and 64 lamps. The signal lamps will be operating on appropriate DC/AC voltage of applicable rating.
2) Detector Interface: A minimum of 16 vehicle detector inputs will be available in the controller. All detector inputs will be isolated and provided with LED indication for detection of vehicle.
3) Communication Interface: The traffic signal controller will support Ethernet interface.
4) Power Saving: The traffic signal controller will have a facility to regulate the intensity of signal lamps during different ambient light conditions thereby saving energy.
5) The traffic signal controller will update the date, time and day of the week automatically from GPS during power ON and at scheduled intervals.(Desirable)
6) Manual entry for date, time and day of week will be provisioned for setting the traffic signal controller RTC (Real Time Clock).
7) Keypad (optional): The traffic signal controller will have a custom-made keypad or should have provision for plan upload and download using PC/laptop/Central Server
8) Operator Display (optional): The traffic signal controller will optionally have a LED backlit Liquid Crystal Display (LCD) as the operator interface.

#### 5.1.1.2. Non-intrusive Vehicle Detector and Counter & Classification

The Non-intrusive vehicle detector shall be a separate equipment, which shall be mounted on a pole and shall be connected to the Traffic controller through appropriate interface to provide the stop line detection of the vehicles at each arm of the Junction. The ITMS System Integrator will clearly specify the placement of the detector (upstream, downstream, stop-line, exit etc.) for independent straight and right turn signals.

1) The outputs of the detectors shall indicate the presence of vehicles and shall be used to influence the operation of the traffic signal controller.The detector should be able to capture vehicle flow across junctions including vehicle counts and classification along with appropriate supporting software.
2) The detector should have supporting software interface to create and configure the virtual loops on the road.

#### 5.1.1.3. Countdown Timer

Two and a Half digit Countdown Timer shall be installed at each traffic junction ARM

1) Count Down Timer to be configured in Vehicular Mode. ( Fixed Time )
2) The Vehicular countdown timer should be in dual RED Colour for STOP and GREEN Colour for the GO with Flashing digits for the Last 5 seconds count down.
3) The CDT should be self-learning (for min 3 cycles) and powered from the Traffic Lamp aspect supply.

#### 5.1.1.4. Communication Network

1) Function of the Communication network is for remote monitoring of the intersection and its management. Real time data (like RTC time, stage timing, mode, events, etc.) from the traffic signal controller is required to be sent to the TCC. The ITMS System Integrator will clearly specify the bandwidth requirements and the type of network recommended for the ITCS.
2) The ITMS System Integrator will specify the networking hardware requirements at TCC and remote intersections for establishing the communication network.
3) The ITMS System Integrator will specify the networking hardware requirements at the Junction.

#### 5.1.1.5. Intelligent Traffic Control- LED Traffic Light Aspects

**A. Key Features**

1) Lowest power consumption for all colours, maximum 8 watts for each colour
2) Meets or exceeds intensity, colour and uniformity specifications
3) Temperature compensated PWM supported driver for longer LED life
4) Uniform appearance light diffusing
5) Should be EN 12368 compliant
6) All units operate at voltage of - 12 / 24 volts DC
7) Pedestrian traffic lights should be provided with clearly audible signals for the benefit of pedestrians with visual impairments
8) Size of LED Aspect 300 mm diameter housed in IP65 rated UV stabilized Polycarbonate housing
9) Operating Temperature Range: 0 degree Celsius to 55 degree Celsius Turn Off/Turn On Time: 75 milli-seconds maximum
10) Minimum Luminous Intensity (measured at intensity point) (cd):
    - Red 400
    - Amber 400
    - Green Arrow 400
11) Dominant Wavelength (nm):
    - Red 630
    - Amber 590
    - Green 490

#### 5.1.1.6. Countdown Timer

**A. Mechanical Specifications**

1) Structural Material: Polycarbonate strengthened against UV rays
2) Body Colour: Light Grey/Black
3) Dimensions: 360 mm x 370 mm x 220 mm

**B. Display Specification**

1) Lamp Diameter: 300 mm
2) Digit Height: 150 mm -165 mm
3) Display Type: Dual Coloured (Red & Green)
4) No. of Digit: Two and half Digit

**C. LED Specifications**

1) LED Diameter: 5 mm LED
2) Viewing Angle: 30°
3) LED Wave Length: 630 nm-640 nm (Red), 505 nm – 520 nm (Blue-Green)
4) LED Dice Material: AIInGap (Red), InGaN (Blue-Green)

**D. Technical Features**

1) Power Consumption: 20 Watt
2) Input Power: 12-24 V DC
3) Operating Temperature: - 20° C to 60 °C
4) Humidity: 0% to 95% Relative Humidity
5) Water & Dust Ingress: IP 65
6) Standard: En12966 Compliant

#### 5.1.1.7. Cables for Traffic Signals

1) No's of core - 7 and 14 core 1.5 sq. mm. 3 Core 2.5 sq. mm.
2) Materials - PVC insulated and PVC sheathed armored cable with copper conductor of suitable size as specified in BOQ.
3) Certification - ISI Marked
4) Standards - Indian Electricity Act and Rules
5) IS:1554 - PVC insulated electric cables (heavy duty)

## 5.2. Public Address (PA) system

1) The PA system should have the capability to control individual PA system i.e. to make an announcement at select location (1:1) and all locations (1: many) simultaneously. The PAS should also support both, Live and Recorded inputs.
2) Speaker - Should be provided with sufficient number of speakers to cover all the arms of each traffic junction, to be used for PA system
3) Connectivity shall be IP Based

4) Access Control - Access control mechanism would be also required to establish so that the usage is regulated.
5) Integration –The PA system shall be integrated with Traffic Control Center (TCC)
6) Battery - Internal Battery with different charging options (Solar/Mains).
7) Power - Automatic ON/OFF operation.
8) Casing - IP-55 rated for housing
9) Operating conditions - 0 to 50°C

## 5.3. Traffic Junction Surveillance System

**General Requirements**:

1) The proposed Traffic Junction Surveillance System shall be installed at each identified locations for traffic monitoring and management purpose.
2) One Traffic Surveillance Cameras camera shall be placed at each arm of the junction ensuring coverage of the traffic junction, accuracy of the information captured on the field and they are rugged, durable & compact. These cameras need to work on 24 X 7 basis and transmit quality video feeds to the Traffic Command Center and would capture the video feeds at 30 FPS during entire duration of day.
3) The traffic surveillance cameras should transmit quality video feed (appropriately focused, clear, un-blurred, jitter free, properly lit, unobstructed, etc.). Packet loss is to be less than 0.5 percent.
4) The Traffic Junction Surveillance system shall be able work with other ITMS solutions such as RLVD system and ITCS system to provide traffic flow, counts and classifications across the city through their detection at locations covered in ITMS.

### 5.3.1. Technical specifications for Fixed Box camera for Traffic Surveillance Camera

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 1. | Video Compression | H.264 or better |
| 2. | Video Resolution | 1920 X 1080 (2 MP) |
| 3. | Frame rate | • Min. 30 FPS<br>• Camera should support minimum 2 streams<br>• 2 streams should be configured at H.264, 1080p @ 30 FPS<br>All the streams shall be independently configurable e.g. FPS, resolutions, compression to optimise the bandwidth |
| 4. | Image Sensor | 1/3” or 1/4” progressive scan CCD/CMOS |
| 5. | Lens Type | Auto IRIS<br>5~50mm/ 8 – 40 mm, F1.4 |
| 6. | Minimum Illumination | Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) |
| 7. | IR cut filter | Automatically Removable IR-cut filter |
| 8. | Day/Night Mode | Colour, Mono, Auto |
| 9. | S/N Ratio | ≥ 50 Db |

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 10. | Auto adjustment + Remote Control of Image settings | Colour, brightness, sharpness, contrast, white balance, exposure control, backlight compensation, Gain Control, Wide Dynamic Range |
| 11. | Protocol | HTTP, HTTPS, FTP/SMTP, NTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, IPV4, IPV6, ONVIF S&G |
| 12. | Security | Password Protection, IP Address filtering, User Access Log, HTTPS, and encryption TLS 1.2, SSL, DES, 3DES, trusted computing function, Public key infrastructure to prevent suspicious attacks. |
| 13. | Local storage | Micro SDXC minimum 256 GB. In the event of failure of connectivity to the central server the camera will record video locally on the SD card automatically. After the connectivity is restored these recordings will be automatically merged with the server recording such that no manual intervention is required to transfer the SD card based recordings to server. |
| 14. | Protocol | IPV4, IPV6, HTTP, HTTPS, FTP/SMTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, |
| 15. | Operating conditions | 0 to 50°C (temperature), 50 to 90% (humidity) |
| 16. | Intelligent Video | Motion detection & tampering alert |
| 17. | Casing | NEMA 4X / IP-66, IK10 rated |
| 18. | Alarm I/O | Minimum 2 Input & 1 Output contact for 3rd part interface |
| 19. | Certifications | UL/EN,CE,FCC |
| 20. | IR | Internal/External. IR range should be 100 mtr or better |

## 5.4. Red Light Violation Detection (RLVD) System

### 5.4.1. Functional Requirements Specifications of RLVD system

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 1. | General Requirements | The following Traffic violations to be automatically detected by the system by using appropriate Non-Intrusive sensors technology. The system should have both provisions to detect red light status by taking the signal feed from the traffic signal controller as well as by video analytics method using another camera (Evidence Camera). The system should be used for evidence snap generation for the following violations:<br>a) Red Light Violation<br>b) Stop Line Violation<br>c) Over Speed Violation<br>d) Wrong Way driving<br>e) Driving two-wheelers without helmet<br>f) Triple riding on two-wheelers |

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 2. | General Requirements | The system should be capable of capturing multiple infracting vehicles simultaneously in different lanes on each arm at any point of time with relevant infraction data like:<br>a) Type of Violation<br>b) Date, time, Site Name and Location of the Infraction<br>c) Registration Number of the vehicle through ANPR Camera system for each vehicle identified for infraction. |
| 3. | General Requirements | The system should be equipped with a camera system to record a digitized image and video of the violation, covering the violating vehicle with its surrounding and current state of signal (Red/Green/Amber) by which the system should clearly show nature of violation and proof thereof:<br>a) When it violates the stop line<br>b) When it violates the red signal<br>c) When it violates the speed limit<br>d) Wrong way violation<br>e) Besides, a closer view indicating readable registration number plate patch of the violating vehicle for court evidence for each violation.<br>The system must have in-built tool to facilitate the user to compose detail evidence by stitching video clips from any IP camera in the junction (including but not limited to the red-light violation detection camera, evidence camera), and any other surveillance cameras in the vicinity of the spot of incidence. The entire evidence should be watermarked and encrypted to stand the court of law. |
| 4. | General Requirements | The system will be able to detect all vehicles infracting simultaneously in each lane/ arm at the junction as per locations provided. It should also be able to detect the vehicles infracting serially one after another in the same lane. The vehicles should be clearly identifiable and demarcated in the image produced by the camera system. |
| 5. | General Requirements | The Evidence image produced by the system should be wide enough to give the position of the infracting vehicles with respect to the stop line and clearly indicate colour of the Traffic light at the instant of Infraction even if any other means is being used to report the colour of the light. |
| 6. | General Requirements | The system should interface with the traffic controller to validate the colour of the traffic signal reported at the time of Infraction so as to give correct inputs of the signal cycle. |
| 7. | General Requirements | The Evidence and ANPR camera should continuously record all footage in its field of view to be stored at the local base station. This should be extractable onto a portable device as and when required. The option of live viewing of evidence cameras from the locations will be available at the Traffic Control Center. The network should have the capability to provide the real-time feed of the evidence camera to the Traffic Control Center (TCC) at the best resolution possible on the available network. |
| 8. | General Requirements | The system will be equipped with IR Illuminator to ensure clear images including illumination of the Number Plate and capture the violation image under low light conditions and night time. |

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 9. | General Requirements | The system should generate Alarms at control room software if any signal is found not turning RED within a specific duration of time. |
| 10. | General Requirements | Should generate alarm if cameras get misaligned or dysfunctional including images- multiple images for pre-and post-infraction for red light over jumping, data, time, location, speed, with automatic number plate detection mechanism (to recognize vehicle automatically) |
| 11. | General Requirements | • Video footage of incident (t-3 seconds to t+3 seconds, where t is time of incident) at required high resolution<br>• Minimum 4 Images of violating vehicle along with Number plate |
| 12. | Recording & display information<br>archive medium | The recording and display of information should be detailed on the snapshot of the infracting vehicle as follows:<br>• Computer generated unique ID of each violation<br>• Date (DD/MM/YYYY)<br>• Time (HH:MM: SS)<br>• Equipment ID<br>• Location ID<br>• Carriageway or direction of violating vehicle<br>• Type of Violation (Signal/Stop Line/Over Speed)<br>• Lane Number of violating vehicle<br>• Time into Red/Green/Amber<br>• Registration Number of violating vehicle |
| 13. | On site-out station processing unit | The system should automatically reset in the event of a program hang up and restart on a button press. However, the system should start automatically after power failure. |
| 14. | On site-out station processing unit | The system should have secure access mechanism for validation of authorised personnel. |
| 15. | On site-out station processing unit | Deletion or addition and transfer of data should only be permitted to authorised users. |
| 16. | On site-out station processing unit | A log of all user activities should be maintained in the system. |
| 17. | On site-out station processing unit | Roles and Rights of users should be defined in the system as per the requirements of the client. |
| 18. | On site-out station processing unit | All formats of the stored data with respect to the infractions should be Non-Proprietary. |
| 19. | On site-out station processing unit | The communication between the on-site outstation processing unit housed in the junction box and the detection systems mounted on the cantilever will be through appropriate secured technology. |
| 20. | On site-out station processing unit | The system should have the capability to transfer the data to TCC through proper encryption in real time and batch mode for verification of the infraction and processing of challan. Call forwarding architecture will be followed to avoid any data loss during transfer. |
| 21. | On site-out station processing unit | In the event that the connectivity to the TCC is not established due to network/connectivity failures, then all data pertaining to the infraction will be stored on site and will be transferred once the connectivity is re-established automatically. There will also be a facility of physical transfer |

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| | | of data on portable device whenever required. There should be a provision to store minimum one week of data at each site on a 24x7 basis. |

### 5.4.2. Functional Requirements Specifications of RLVD Application

1) The RLVD Application should be capable of importing violation data for storage in database server which should also be available to the Operator for viewing and retrieving the violation images and data for further processing. The programme should allow for viewing, sorting, transfer & printing of violation data.
2) The Application should generate the photograph of violations captured by the outstation system which include a wider view covering the violating vehicle with its surrounding and a closer view indicating readable registration number plate patch of the violating vehicle or its web link on notices for court evidence.
3) All outstation units should be configurable using the software at the Central Location.
4) Violation retrieval could be sorted by date, time, location and vehicle registration number and the data structure should be compatible with Jabalpur Police database structure. It should also be possible to carry out recursive search and wild card search.
5) The operator at the back office should be able to get an alarm of all fault(s) occurring at the camera site (e.g. sensor failure, camera failure, failure of linkage with traffic signal, connectivity failure, Camera tampering, sensor tampering).
6) The ANPR Software will be part of the supplied system, Success rate of ANPR will be taken as 80% or better during the day time and 70% or better during the night time for all number plates (including standard and non-standard of both four wheelers and two wheelers).
7) The application software should be integrated with the e-Challan software for tracing the ownership details of the violating vehicle and issuing/printing notices. Any updates of the software (OS, Application Software including any proprietary software), will be updated free of cost during the contract period by the ITMS System Integrator.
8) The Image zoom function for number plate and the images should be provided.
9) Various users should be able to access the system using single sign on and should be role based. Different roles which could be defined (to be finalized at the stage of SRS) could be Administrator, Supervisor, Officer, Operator, etc.
10) Apart from role based access, the system should also be able to define access based on location.
11) Rights to different modules / Sub-Modules / Functionalities should be role based and proper log report should be maintained by the system for such access.
12) The components of the architecture must provide redundancy and ensure that there are no single points of failure in the key components. Considering the high sensitivity of the system, design will be in such a way as to be resilient to technological sabotage. To take care of remote failure, the systems need to be configured to mask and recover with minimum outage.

13) The architecture must adopt an end-to-end security model that protects data and the infrastructure from malicious attacks, theft etc. Provisions for security of field equipment as well as protection of the software system from hackers and other threats will be a part of the proposed system. Using Firewalls and Intrusion detection systems such attacks and theft will be controlled and well supported (and implemented) with the security policy. The virus and worm's attacks will be well defended with Gateway level Anti-virus system, along with workstation level Anti-virus mechanism. There will also be an endeavour to make use of the SSL/VPN technologies to have secured communication between Applications and its end users. Furthermore, all the system logs will be properly stored & archived for future analysis and forensics whenever desired.
14) The evidence of Infraction should be encrypted and protected so that any tampering can be detected.
15) Ease of configuration, ongoing health monitoring, and failure detection are vital to the goals of scalability, availability, and security and must be able to match the growth of the environment.
16) System will use open standards and protocols to the extent possible and declare the proprietary software wherever used.
17) The user interface should be user friendly and provide facility to user for viewing, sorting and printing violations. The software should also be capable of generating query based statistical reports on the violation data.
18) The data provided for authentication of violations should be in an easy to use format as per the requirements of user.
19) User should be provided with means of listing the invalid violations along with the reason(s) of invalidation without deleting the record(s).
20) Basic image manipulation tools (zoom etc.) should be provided for the displayed image but the actual recorded image should never change.
21) Log of user actions be maintained in read only mode. User should be provided with the password and ID to access the system along with user type (admin, user).
22) Image should have a header/footer depicting the information about the site IP and violation details like date, time, equipment ID, location ID, Unique ID of each violation, lane number, Registration Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behaviour is recorded including (Red Light violation and Stop Line Violation)
23) Number plate should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well
24) Interface for taking prints of the violations (including image and above details).

### 5.4.3. Technical Requirements Specifications of RLVD system

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 1. | General Requirements | The system should be capable of generating a video & minimum 3 snapshots in any of the standard industry formats (MJPEG, JPG, Avi, Mp4, Mov, etc) with at least 10 frames per second. The video will be from t-5 to t+5 sec of the violation and should also be recorded (being the instant at which the infraction occurred). |
| 2. | **Digital Network Camera for ANPR** | |
| a) | Video Compression | H.264 or better |
| b) | Video Resolution | 1920 X 1080 (2 MP) |
| c) | Frame rate | • Min. 50 FPS<br>• Camera should support minimum 2 streams<br>• 2 streams should be configured at H.264, 1080p @ 50 FPS<br>• All the streams shall be independently configurable e.g. FPS, resolutions, compression to optimise the bandwidth |
| d) | Image Sensor | 1/3” progressive scan CCD/CMOS |
| e) | Lens Type | Varifocal, C/CS Mount, IR Correction full HD lens |
| f) | Lens# | Auto IRIS<br>5~50mm /8 – 40 mm, F1.4 |
| g) | Minimum Illumination | Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) |
| h) | IR Cut Filter | Automatically Removable IR-cut filter |
| i) | Day/Night Mode | Colour, Mono, Auto |
| j) | S/N Ratio | ≥ 50 Db |
| k) | Auto adjustment + Remote Control of Image settings | Auto adjustment + Remote Control of Image settings |
| l) | Audio | Audio Capture Capability, G.711, G.726 |
| 3. | Local storage | Micro SDXC minimum 256 GB. In the event of failure of connectivity to the central server the camera will record video locally on the SD card automatically. After the connectivity is restored these recordings will be automatically merged with the server recording such that no manual intervention is required to transfer the SD card based recordings to server. |
| 4. | Protocol | IPV4, IPV6, HTTP, HTTPS, FTP/SMTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, |
| 5. | Security | Password Protection, IP Address filtering, User Access Log, HTTPS, Public key infrastructure, AES 256 Bit encryption. |
| 6. | Operating conditions | 0 to 50°C (temperature), 50 to 90% (humidity) |
| 7. | Casing | NEMA 4X / IP-66, IK10 rated |
| 8. | Intelligent Video | Motion Detection & Tampering alert |

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 9. | Alarm I/O | Minimum 2 Input & 1 Output contact for 3rd part interface |
| 10. | Certification | UL/EN, CE, FCC |
| 11. | Camera Analytics | Support analytics line crossing, crowd detection, route direction, motion detection, tampering, object identification.<br><br>If bidder is proposing analytics server based then system should have N: N Redundancy. |
| 12. | On site-out station processing unit communication & Electrical Interface (Junction Box) | Date Storage on Site –<br>The system should be equipped with appropriate storage capacity for 7 days 24X7 recording, with overwriting capability. The images should be stored in tamper proof format only. |
| 13. | On site-out station processing unit communication & Electrical Interface (Junction Box) | Network Connectivity –<br>Wired/GPRS based wireless technology with 3G upgradable to 4G capability. |
| 14. | On site-out station processing unit communication & Electrical Interface (Junction Box) | Minimum 2(two) USB Port to support the latest external mass storage devices and Ethernet (10/100) Port for possible networking. However, all logs of data transfer through the ports will be maintained by the system. |
| 15. | On site-out station processing unit communication & Electrical Interface (Junction Box) | The system should be capable of working in ambient temperature range of $0^{o}$C to $60^{o}$C. |
| 16. | On site-out station processing unit communication & Electrical Interface (Junction Box) | Lightening arrester will be installed for safety of system (As per BIS standard IS 2309 of 1989). |
| 17. | On site-out station processing unit communication & Electrical Interface (Junction Box) | The housing(s) should be capable of withstanding vandalism and harsh weather conditions and should meet IP66, IK10 standards (certified). |
| 18. | Violation Transmission and Security | Encrypted data, images and video pertaining to Violations at the Onsite processing station should be transmitted to the TCC electronically through GPRS based wireless technology with 3G upgradable to 4G, or wired connectivity if available in Jpeg format |
| 19. | Violation Transmission and Security | Advanced Encryption Standard (AES) will be followed for data encryption on site and TCC, and its access will protected by a password. |
| 20. | Violation Transmission and Security | The ITMS System Integrator will ensure that the data from the onsite processing unit will be transferred to TCC within one day. |
| 21. | Video Recording | The system should be capable of continuous video recording in base station for 7 days. The system will automatically overwrite the data after 7 days. It should be noted that at any point of time the local storage at the base station should have the data of previous 7 days. |
| 22. | Video Recording | Direct extraction through any physical device like USB flash drive, Portable Hard disk etc. will be possible |

### 5.4.3.1. Technical Specifications for Overview/Evidence Camera

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 1. | Video Compression | H.264 or better |
| 2. | Video Resolution | 5 MP |
| 3. | Frame rate | • Min. 25 FPS<br>• Camera should support minimum 2 streams<br>• 2 streams should be configured at H.264, 5 MP@ 25 FPS<br>• All the streams shall be independently configurable e.g. FPS, resolutions, compression to optimise the bandwidth |
| 4. | Image Sensor | 1/3” progressive scan CCD/CMOS |
| 5. | Lens Type | Automatic Varifocal 2.7-10mm lens or better, IR Correction, remote focus |
| 6. | Minimum Illumination | Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) |
| 7. | IR Cut Filter | Automatically Removable IR-cut filter |
| 8. | Day/Night Mode | Colour, Mono, Auto |
| 9. | S/N Ratio | ≥ 50 Db |
| 10. | Auto adjustment zoom and focus | Available |
| 11. | Audio | Audio Capture Capability, G.711, |
| 12. | Local storage | Micro SDXC up to 64 GB(Class 10) In the event of failure of connectivity to the central server the camera will record video locally on the SD card automatically. After the connectivity is restored these recordings will be automatically merged with the server recording such that no manual intervention is required to transfer the SD card based recordings to server. |
| 13. | Protocol | IPV4, IPV6, HTTP, HTTPS, FTP/SMTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, |
| 14. | Security | Password Protection, IP Address filtering, User Access Log, HTTPS, Public key infrastructure, AES 256 Bit encryption. |
| 15. | Operating conditions | 0 to 60°C (temperature), 50 to 90% (humidity) |
| 16. | Casing | IP66 or better, IK10 |
| 17. | Intelligent Video | Motion Detection & Tampering alert |
| 18. | Alarm I/O | Minimum 2 Input & 1 Output contact for 3rd part interface |
| 19. | Certification | UL/EN, CE, FCC |
| 20. | Camera Analytics | Support analytics line crossing, crowd detection, route direction, motion detection, tampering, object identification.<br><br>If bidder is proposing analytics server based then system should have N:N Redundancy. |

#### 5.4.3.2. Specifications for Field Junction Box

1) Size - Suitable size as per site requirements to house the field equipment
2) Cabinet Material - GI with powder coated
3) Material Thickness - Min 1.2 mm
4) Locks - Secure Lockable to ensure protection
5) Protection - IP 66, Junction Box design should ensure to keep the temperature within suitable operating range for equipment's and should also avoid intentional water splash and dust intake
6) Mounting - On Camera Pole / Ground mounted on concrete base
7) Form Factor - Rack Mount/DIN Rail
8) Other Features - Rain Canopy, Cable entry with glands, proper earthing and Fans/any other accessories as required for operation of equipment within junction box.
9) Branding - As per requirement of Jabalpur Smart City Limited
10) Installation - At locations as per the direction of JSCL/Jabalpur Traffic Police / Jabalpur Municipal Corporation

## 5.5. Automatic Number Plate Recognition (ANPR) System

The ANPR System shall enable monitoring of vehicle flow at strategic locations. The system shall support real-time detection of vehicles at the deployed locations, recording each vehicle, reading its number plate, database lookup from central server and triggering of alarms/alerts based on the vehicle status and category as specified by the database. The system usage shall be privilege driven using password authentication.

### 5.5.1. Functional Requirements Specifications

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 1. | General Requirements | The Cameras will cover single lanes of 3.5m each. For places where more than two lanes are to be monitored, the lane cameras to be increased in proportion to the lane |
| 2. | General Requirements | The system will have IR illuminators to provide illumination for night-time scenario. Camera with IR illuminators should be deployed at heights between 20 feet to allow HMV (high motor vehicle) to pass underneath it, and to minimize occlusion. |
| 3. | General Requirements | The system should have the facility to provide the live feed of the camera at the central command centre or as per user requirement. |
| 4. | General Requirements | The system should be able to provide video clips of the transaction from the ANPR lane cameras as evidence |
| 5. | General Requirements | The system should perform ANPR on all the vehicles passing the site and send alert to the central command centre on detection of any Hot-listed vehicles (whose numbers have been marked as Stolen, Wanted, etc. at the Central server). |
| 6. | General Requirements | With the detected number plate text, picture should also be sent of hot listed vehicle. It is highly likely to misread similar alphabets like 7/1/L or 8/B |

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 7. | General Requirements | The system should work 24 x 7 in both day and night conditions with good accuracy for the duration of the project |
| 8. | General Requirements | System should be able to detect and recognize the English alpha numeric License plate standard fonts and formats, defined under CMVR 1989 |
| 9. | General Requirements | The system should have ANPR/ OCR to address the Alpha numerical character of irregular font sizes. |
| 10. | General Requirements | The system should accurately read all vehicle's (including both four wheelers and two wheelers) number plates with an accuracy of at least 80% at day time and at least with an accuracy of 70% at night time. (On basis of number of vehicles) |
| 11. | General Requirements | The system should have an option for the user to enter Hot-Listed vehicles at the Central Server and the same should be sent to all the sites automatically over the network. |
| 12. | General Requirements | Bidder to provide system with local processing unit at site and send only processed data |
| 13. | General Requirements | Local processing unit should be industrial grade type. capable of working up to $70^0$ |
| 14. | General Requirements | • Video footage of incident (t-3 seconds to t+3 seconds, where t is time of incident) at required high resolution<br>• Minimum 4 Images of violating vehicle along with Number plate |
| 15. | Vehicle detection by Colour | • The system shall detect the color of all vehicles in the camera view during daytime and label them as per the predefined list of configured system colors. The system will store the color information of each vehicle along with the license plate information for each transaction in the database.<br>• The system will have options to search historical records for post event analysis by the vehicle colour or the vehicle colour with license plate and date time combinations |
| 16. | Alert Generation | The system should have option to input certain license plates according to the hot listed categories like "Wanted", "Suspicious", "Stolen", "Expired" etc. by authorized personnel. (System should have provision/expansion option to add more Categories for future need). |
| 17. | Alert Generation | The system should be able to generate automatic alarms to alert the control room personnel for further action, in the event of detection of any vehicle falling in the Hot listed categories. |
| 18. | Logs | The system will enable easy and quick retrieval of snapshots, video and other data for post incident analysis and investigations. |
| 19. | Logs | The system should be able to generate suitable MIS reports that will provide meaningful data to concerned authorities and facilitate optimum utilization of resources.A) Report of vehicle flow at each of the installed locations for Last Day, Last Week and Last Month.B) Report of vehicles in the detected categories at each of the installed locations for Last Day, Last Week and Last Month.C) Report of Vehicle Status change in different Vehicle Categories. |

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 20. | Logs | The system will have Search option to tune the reports based on license plate number, date and time, site location as per the need of the authorities. |
| 21. | Logs | The system will have option to save custom reports for subsequent use. The system will have option to export report being viewed to common format for use outside of the ANPRS or exporting into other systems. |

## 5.6. Speed Violation Detection (SVD) System

### 5.6.1. Functional Requirements Specifications of SVD system

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 1. | General specifications | The Speed Violations should be automatically detected by the system by using appropriate sensors technology. |
| 2. | General specifications | The system should be capable of capturing multiple infracting vehicles simultaneously in defined lanes at any point of time simultaneously with relevant infraction data like:<br>• Type of Violation<br>• Speed of violating vehicle<br>• Notified speed limit<br>• Date, time, Site Name and Location of the Infraction<br>• Registration Number of the vehicle through ANPR Camera system for each vehicle identified for infraction |
| 3. | General specifications | The system should be equipped with a camera system to record a digitized image or video frames of the violation, covering the violating vehicle with its surrounding |
| 4. | General specifications | The system will provide the No. of vehicles infracting simultaneously in each lane. The vehicles will be clearly identifiable and demarcated in the image produced by the camera system |
| 5. | General specifications | The system will be equipped with IR Illuminator to ensure clear images including illumination of the Number Plate and capture the violation image under low light conditions and night time. |
| 6. | Speed | Speed measurement may be made by using non-intrusive technology such as Radar/sensor/camera/virtual based or any other appropriate certified technology. CE and homologation certificate from Ministry of Traffic or equivalent department from respective country of origin, document authenticated by Indian Embassy (to authenticate that systems are legalized and tested for infractions to avoid legal issues) or Certificate from internationally accredited metrology laboratories (approved for speed calibration) is acceptable |
| 7. | On site-out station processing unit communication & Electrical Interface | The system should automatically reset in the event of a program hang up and restart after power failure. |

| Sl. # | Parameter | Minimum Requirement Descriptions |
|---|---|---|
| 8. | On site-out station processing unit communication & Electrical Interface | The system should have secure access mechanism for validation of authorised personnel |
| 9. | On site-out station processing unit communication & Electrical Interface | Deletion or addition and transfer of data should only be permitted to authorised users. |
| 10. | On site-out station processing unit communication & Electrical Interface | A log of all user activities should be maintained in the system |
| 11. | On site-out station processing unit communication & Electrical Interface | Roles and Rights of users should be defined in the system |
| 12. | On site-out station processing unit communication & Electrical Interface | The data will be transferred to the TCC in real time for verification of the infraction and processing of challan. |
| 13. | On site-out station processing unit communication & Electrical Interface | In the event that the connectivity to the TCC is not established then all data pertaining to the infraction will be stored on site and will be transferred once the connectivity is re-established automatically. |

#### 5.6.1.1. Functional Requirements Specifications of SVD Application

1) The Speed Violation Detection Application should be capable of importing violation data for the Operator for viewing and retrieving the violation images and data for further processing. The programme should provide for sort, transfer & print command.
2) The Application should generate the photograph of violations captured by the outstation system which include a wider view covering the violating vehicle with its surrounding and a closer view indicating readable registration number plate patch of the violating vehicle or its web link on notices for court evidence.
3) All outstation units should be configurable using the software at the Central Location
4) Violation retrieval could be sorted by date, time, location and vehicle registration number and data structure should be compatible with Jabalpur Traffic Police database and Madhya Pradesh Transport department database structure.
5) The operator at the back office should be able to get an alarm of any possible fault(s) at the camera site (outstand) (e.g. sensor failure, camera failure, failure of linkage with traffic signal, connectivity failure, Camera tampering, sensor tampering)
6) The ANPR Software may be part of the supplied system, or can be provided separately as add on module to be integrated with violation detection. The Success rate of ANPR will be

taken as 80% or better during the day time and 70% or better during the night time on all number plates (including standard and non-standard of both four wheelers and two wheelers).

7) The Image zoom function for number plate and the images should be provided. Any updates of the software available, will be updated free of cost during the contract period by the vendor and will integrate the same with existing application and database of Jabalpur Traffic Police and Jabalpur Transport department.

8) The Application software should be integrated with the notice branch software for tracing the ownership details of the violating vehicle and issuing/printing notices.

9) Various users should be access the system using single sign on and should be role based. Different roles which could be defined (to be finalized at the stage if SRS) could be Administrator, Supervisor, Officer, Operator, etc.

10) Apart from role based access, the system should also be able to define access based on location.

11) Rights to different modules / Sub-Modules / Functionalities should be role based and proper log report should be maintained by the system for such access

12) Important technical components of the architecture must support scalability to provide continuous growth to meet the growing demand of Jabalpur Police. The system will support vertical scalability so that depending on changing requirements from time to time, the system may be scaled upwards. There must not be any system imposed restrictions on the upward scalability. Main technological components requiring scalability are Storage, Bandwidth, Computing Performance (IT Infrastructure), Software / Application performance and advancement in proposed system features.

13) The system will also support horizontal scalability so that depending on changing requirements from time to time, the system may be scaled horizontally.

14) The components of the architecture must provide redundancy and ensure that are no single point of failures in the key project components. Considering the high sensitivity of the system, design will be in such a way as to be resilient to technological sabotage. To take care of remote failure, the systems need to be configured to mask and recover with minimum outage.

15) The architecture must adopt an end-to-end security model that protects data and the infrastructure from malicious attacks, theft, natural disasters etc. provisions for security of field equipment as well as protection of the software system from hackers and other threats will be a part of the proposed system. Using Firewalls and Intrusion detection systems such attacks and theft will be controlled and well supported (and implemented) with the security policy. The virus and worm's attacks will be well defended with Gateway level Anti-virus system, along with workstation level Anti-virus mechanism. There will also be an endeavour to make use of the SSL/VPN technologies to have secured communication between Applications and its end users. Furthermore, all the system logs will be properly stored & archived for future analysis and forensics whenever desired.

16) Ease of configuration, ongoing health monitoring, and failure detection are vital to the goals of scalability, availability, and security and must be able to match the growth of the environment.

17) System will use open standards and protocols to the extent possible

18) The user interface should be user friendly and provide facility to user for viewing, sorting and printing violations. The software should also be capable of generating query based statistical reports on the violation data.

19) The data provided for authentication of violations should be in an easy to use format as per the requirements of user unit.

20) User should be provided with means of listing the invalid violations along with the reason(s) of invalidation without deleting the record(s).

21) Basic image manipulation tools (zoom etc.) should be provided for the displayed image but the actual recorded image should never change.

22) Log of user actions be maintained in read only mode. User should be provided with the password and ID to access the system along with user type (admin, user).

23) Image should have a header and footer depicting the information about the site IP and violation details like viz. date, time, equipment ID, location ID, Unique ID of each violation, lane number, Registration Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behaviour is recorded viz. (Speed of violating vehicle, notified speed limit, Speed Violation with Registration Number Plate Recognition facility. Number plate of cars, buses/HTVs should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well.

24) Number plate of cars, buses/HTVs should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well.

25) Interface for taking prints of the violations (including image and above details).

### 5.6.2. Technical Requirements Specifications of SVD system

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 1. | General Requirements | The system should be capable of generating a video & minimum 3 snapshots in any of the standard industry formats (MJPEG, JPG, Avi, Mp4, Mov, etc) with at least 10 frames per second. The video will be from t-3 to t+3 sec of the violation and should also be recorded (being the instant at which the infraction occurred). |
| **2.** | **Speed** | |
| a) | Unit of Speed Measurement | Kmph |
| b) | Speed detection system to Capture speed | 150Kmph ± 5 km |

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| c) | Speed Threshold | ITMS should provide manufacturer certificate/third party test report in support of their claim |
| d) | Speed Enforcement Technology | Radar/Laser/Others |
| 3. | **Digital Network Camera** | |
| a) | Video Compression | H.264 or better |
| b) | Video Resolution | 1920 X 1080 |
| c) | Frame rate | Min. 60 FPS |
| d) | Image Sensor | 1.3” progressive scan CCD/CMOS |
| e) | Lens Type | Varifocal, C/CS Mount, IR Correction full HD lens |
| f) | Lens# | Auto IRIS<br>5~50mm /8 – 40 mm, F1.4 |
| g) | Minimum Illumination | Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) |
| h) | IR Cut Filter | Automatically Removable IR-cut filter |
| i) | Day/Night Mode | Colour, Mono, Auto |
| j) | S/N Ratio | ≥ 50 Db |
| k) | Auto adjustment + Remote Control of Image settings | Colour, brightness, sharpness, contrast, white balance, exposure control, backlight compensation, Gain Control, Ture Wide Dynamic Range |
| l) | Audio | Audio Capture Capability, G.711, G.726 |
| m) | Local storage | Micro SDXC minimum 256 GB. In the event of failure of connectivity to the central server the camera will record video locally on the SD card automatically. After the connectivity is restored these recordings will be automatically merged with the server recording such that no manual intervention is required to transfer the SD card based recordings to server. |
| n) | Protocol | IPV4, IPV6, HTTP, HTTPS, FTP/SMTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, QoS, ONVIF Profile S |
| o) | Security | Password Protection, IP Address filtering, User Access Log, HTTPS |
| p) | Operating conditions | 0 to 50°C (temperature), 50 to 90% (humidity) |
| q) | Casing | NEMA 4X / IP-66, IK10 rated |
| r) | Intelligent Video | Motion Detection & Tampering alert |
| s) | Alarm I/O | Minimum 1 Input & 1 Output contact for 3rd part interface |
| t) | Certification | UL/EN, CE, FCC |

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 4. | Recording & display information archive medium | The system should be capable of recording the following details of the infracting vehicles.<br>• Computer generated unique ID of each violation<br>• Date (DD/MM/YYYY)<br>• Time (HH:MM: SS)<br>• Equipment ID<br>• Location ID<br>• Carriageway or direction of violating vehicle<br>• In cases when multiple infracting vehicles are detected in one instant the system should be capable to provide the following data for all Infracting vehicles detected<br>o Type of Violation<br>o Notified speed limit (in Kmph)<br>o Speed of violating vehicle (in Kmph)<br>o Lane Number of violating vehicle<br>o Registration Number of violating vehicle |
| 5. | On site-out station processing unit communication & Electrical Interface | Data Storage on site -<br>The system should be equipped with appropriate storage capacity for 7 days 24X7 recording, with overwriting capability. The images should be stored in tamper proof format only. |
| 6. | On site-out station processing unit communication & Electrical Interface | Network Connectivity -<br>Wired/GPRS based wireless technology with 3G upgradable to 4G capability. |
| 7. | On site-out station processing unit communication & Electrical Interface | Minimum 2(two) USB Port to support the latest external mass storage devices and Ethernet (10/100) Port for possible networking. However, all logs of data transfer through the ports will be maintained by the system. |
| 8. | On site-out station processing unit communication & Electrical Interface | The system should be capable of working in ambient temperature range of $0^{o}$C to $60^{o}$C. |
| 9. | On site-out station processing unit communication & Electrical Interface | At least one-hour UPS power back up to keep the system functional in case of power failure without any break in recording the violation. |
| 10. | On site-out station processing unit communication & Electrical Interface | Lightening arrester will be installed for safety of system (As per BIS standard IS 2309 of 1989) |
| 11. | On site-out station processing unit communication & Electrical Interface | The housing(s) should be capable of withstanding vandalism and harsh weather conditions and should meet IP66, IK10 standards (certified). |
| 12. | Violation Transmission and Security | Encrypted data, images and video pertaining to Violations at the Onsite processing station should be transmitted to the TCC electronically |

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| | | through GPRS based wireless technology with 3G upgradable to 4G or wired connectivity, in Jpeg format. |
| 13. | Violation Transmission and Security | Advanced Encryption Standard (AES) will be followed for data encryption on site and TCC, and its access will protected by a password. |
| 14. | Violation Transmission and Security | The vendor will ensure that the data from the onsite processing unit will be transferred to TCC within one day. |
| 15. | Video Recording | The system should be capable of continuous video recording in base station for 7 days. The system will automatically overwrite the data after 7 days. It should be noted that at any point of time the local storage at the base station should have the data of previous 7 days. |
| 16. | Video Recording | Direct extraction through any physical device like USB, Hard disk will be possible. |

## 5.7. E-Challan System Application

### 5.7.1. Functional Requirements Specifications

#### A. E-Challan Application

1) E-challan system will be able to retrieve vehicle owners' details and vehicle data from RTO/ Motor Vehicle Department data base to minimise data entry.

2) The system should provide facility to update addresses and mobile numbers of vehicle owners in the e-Challan database and if required, share those updates to RTO/ Motor Vehicle Department data base.

3) The system will have sufficient security features such as password protection, audit trail, etc.

4) A unique challan number will be generated through client software for each challan.

5) The system should provide SMS/Email/Whatsapp alert mechanism to the registered vehicle owners wherever mobile phone numbers are available.

6) As soon as a vehicle registration number is entered, the system should automatically check from the server if the vehicle is stolen, wanted in any criminal case or is in the list of suspicious vehicles.

7) The Challan generating unit will be able to generate Challans in Hindi and English. The content of the Challan will be developed in consultation with Jabalpur Traffic Police.

8) It will be possible to integrate payment gateway operator with the system for facilitation of payment.

9) It will possible to sort challans by Thana/Junctions, as required by Jabalpur Traffic Police.

10) The Challan generation module will be pre-integrated with the ANPR, RLVD & SVD System. The Challan generating system will generate and print Challans for all the RLVD & Speed Violation events that are duly validated and checked by the operator.

11) The Operator will have the option to filter the RLVD events and other traffic violation events such as over-speeding, wrong way driving, wrong –parking, no-helmet driving etc. based on the following criteria for generation of Challans.

    a. Number of violations by the same vehicle multiple times

    b. For a particular category (e.g.,4-wheelers) of vehicles

    c. For a particular Thana/Police Station

    d. Paid/Unpaid Challans

    e. Ageing Analysis of Pending Challans

12) The system should allow payment of e-Challan by violators through various modes such as MP online portal, 311 mobile app, MP treasury portal, traffic police website, direct cash payment at police stations and other modes as per requirement of JSCL/Jabalpur Traffic Police.

13) The system should be able to provide tracking of receipts and payments of e-challans.

14) Operator will have the option to mark the challan as “PAID” when the violator deposits the money against the challan. At the end of the day, the system should generate a report for the challans paid and the amount collected.

15) The Challan generation system will have a provision to be integrated with the Traffic Police website so that the owner of the vehicle can view his Challan details along with Evidence snaps by logging in to the website.

16) The system will be able to generate various periodical reports, summaries, MIS reports, query reply etc. as per the requirements of Jabalpur Traffic Police.

17) Software up-gradation must be provided by the ITMS System Integrator from time to time as per available technology without further cost impact to Jabalpur Traffic Police.

18) JSCL/Jabalpur Traffic Police will facilitate to provide the entire data of vehicle ownership and driving license for integration with the vendor’s application software.

19) All database tables, records etc. required for various drop-down menus etc. will also be created by the ITMS System Integrator.

20) The application software will to be provided by the ITMS System Integrator for handling various processes of the prosecution required by the office of senior police officers, Courts etc. as required.

21) The application software should have the capability to export records in CSV, SQL and binary format.

22) The software shall be device agnostic and should potentially be able to run on the full range of devices of the same family made by multiple OEMs.

23) The software should have dynamic work/ flow with hierarchical login for different levels of Traffic Police officials and user based rights as per government guidelines which may change from time to time.

24) Database Application Software should integrate all the functions of the Traffic Police Department including Traffic Police Stations.

25) New versions of application software should be installable with the available user interface.

### B. Modules for E-Challan System

The e-challan System Software should consists of the following modules

1) Photo Collection
2) Violation booking
3) e-challan Generation
4) Postal dispatches
5) Postal Statement
6) Postal returns and return info feeding
7) Data entry in vehicle Registration remarks database
8) Provision to enter comment Sold out vehicles/Fake vehicles /Fake addressed
9) Vehicles/Theft Vehicles/Authorized complaints/Multiple owners)
10) Identification of Police Stations, Junctions, Courts, Police Staff for the Traffic dept.
11) MV Act cases
12) Action dropouts as per Court decisions
13) Report Generation
14) Online Pending Challan Verification
15) Online Violation photo view facilities
16) Upgrading the e-Challan Software
17) Online Uploading photos by the Police in Control room
18) Server database and crash recovery of data.
19) Regular Backup System
20) Performance tuning of the Application, Database tuning, Network tuning, Web Service tuning.
21) APIs for sharing e-Challan information for online payment and updation of payment status in e-Challan application server.

### C. Security Provisions

A strong and comprehensive information security system based on leading standards such as ISO 27001 and guidelines from Department of Information Technology (DIT)

would need to be implemented. Information within the system should be classified as Public, Confidential and Restricted. Access to the information should be provided based on the classification of the information.

1) The system should have provision for preventing unauthorized access and damage to information resources.
2) The system should be accessible only after approval from application owner and the competent authorities.
3) The access should be on a role basis rather than designation.
4) The access control system should cover:
   - Identification
   - Authentication
   - Authorization and Access Control
   - Administration
   - Audit
5) The system should be able to maintain access control mechanisms, data security and audit trails to ensure that databases are not tampered or modified by unauthorized users.

## 5.8. Other Specifications

### 5.8.1. Technical Specifications of PTZ camera

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 1. | Video Compression | H.264 or better |
| 2. | Video Resolution | 1920 X 1080 (2 MP) |
| 3. | Frame rate | • Min. 30 FPS<br>• Camera should support minimum 2 streams<br>• 2 streams should be configured at H.264, 1080p @ 30 FPS<br>All the streams shall be independently configurable e.g. FPS, resolutions, compression to optimise the bandwidth |
| 4. | Image Sensor | 1/3” or 1/4” progressive scan CCD/CMOS |
| 5. | Lens | Auto-focus, 4.3 - 129 mm (corresponding to 30x) |
| 6. | Minimum Illumination | Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) |
| 7. | Day/Night Mode | Colour, Mono, Auto |
| 8. | S/N Ratio | ≥ 50 Db |
| 9. | PTZ | Pan: 360° endless/continuous, 0.2 to 300°/s (auto), 0.2 to 100°/s (Manual)<br>Tilt: +3 to -90°, 0.2 to 100°/s (Auto), 0.2 to 40°/s (Manual)<br>30x optical zoom and 16x digital zoom 64 preset positions<br>Auto-Tracking<br>Pre-set tour |

| Sl. # | Parameter | Minimum Requirement or Better |
|---|---|---|
| 10. | Edge Analytics | Camera must support base analytics. Enter/Leave field, loitering, line crossing, follow routes, idle/removed object, counting, occupancy, crowd density estimation, condition change, similarity search. |
| 11. | Auto adjustment + Remote Control of Image settings | Colour, brightness, sharpness, contrast, white balance, exposure control, backlight compensation, Gain Control, Wide Dynamic Range |
| 12. | Protocol | HTTP, HTTPS, FTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, IPV4, IPV6 |
| 13. | Security | Password Protection, IP Address filtering, User Access Log, HTTPS, and encryption TLS 1.2, SSL, DES, 3DES, trusted computing function, Public key infrastructure to prevent suspicious attacks. |
| 14. | Local storage | Micro SDXC minimum 256 GB. In the event of failure of connectivity to the central server the camera will record video locally on the SD card automatically. After the connectivity is restored these recordings will be automatically merged with the server recording such that no manual intervention is required to transfer the SD card based recordings to server. |
| 15. | Protocol | IPV4, IPV6, HTTP, HTTPS, FTP/SMTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, |
| 16. | Operating conditions | 0 to 50°C (temperature), 50 to 90% (humidity) |
| 17. | Casing | NEMA 4X / IP-66, IK10 rated |
| 18. | Alarm I/O | Minimum 2 Input & 1 Output contact for 3rd part interface |
| 19. | Certifications | UL/EN,CE,FCC |
| 20. | IR | Internal/External. IR range should be 100 mtr or better |

### 5.8.2. Video Wall

1) Configuration: Seamless Video wall of DLP Cubes. Each cube size to be 70” or more with complete configuration of (4 cubes x 3 cubes) with covered base. All cubes have to be of the exactly same size, configuration and model wise mandatorily. The wall to be installed in curved fashion with all required support system like Controller / stand for DLP Cubes / Interfaces / Connecting cables.
2) Operation 24 X 7: The Video Walls & Controllers and all support systems should be capable of working in 24 x 7 mode without any deterioration in the performance
3) Chip Type: DLP single chip
4) Native Resolution: Full HD (1920 x 1080) / UXGA (1600 x 1200)
5) Light Source Type: Laser light source
6) Brightness : Typ. 2400 Lumens
7) Brightness Uniformity: ≥ 98 %
8) Aspect ratio: 16:9 / 4:3

9) Contrast ratio: Typ. 1800:1
10) Redundant Dual Power Supply: Cube should be equipped with a built in dual redundant power supply
11) Hot Swappable Power Supply: The inbuilt power supply should be hot swappable
12) Control: IP based control to be provided
13) Remote: IR remote control should also be provided for quick access
14) Screen to Screen Gap: ≤ 0.2 mm
15) Full viewing angle: 180 degree
16) Maintenance Access: Rear mount
17) Inputs in the Cube: DVI-2, HDMI-1, HDbaseT-1, Display port-1, 21
18) Output in Cube: DVI – 1
19) Cube control & Monitoring: Video wall should have cube control & monitoring system which can provide video wall status including source, light source, temperature, fan & power information. The system should be based on web-browser architecture. Should be able to provide an error message in three sections:
    a. Problem area
    b. Error Module Location
    c. Error Module Image
20) Laser Lamp Life
    a. Eco mode: 100,000 hours
    b. Normal mode: 80,000 hours
    c. Bright mode: 60,000 hours

### 5.8.3. Video Wall Controller

1) Display controller: Controller to control Video Walls in a matrix of 4 x 3 with 16 DVI outputs (for future expansion) , 4 Universal inputs & DUAL LAN INPUTS along with requisite software
2) Processor: Single Quad Core Intel®: Xeon/i7 64-bit 2.0 GHz CPU or better
3) RAM: 8GB
4) HDD: 500 GB Hard Disk, Hard disk Capacity should be upgradable
5) RAID: RAID 0 configured with usable space of 500 GB in each controller
6) Networking:
    - Dual-port Gigabit Ethernet Controller inbuilt
    - Support for Add on Network adapters
    - Support for Optical Fiber interface Adapters
7) Accessories: DVD-R, DVD+RW, Keyboard, mouse
8) OS: Supports 64-bit Operating Systems Windows 7
9) Power Supply:
    - (1 + 1) Redundant AC-DC high-efficiency power supply w/ PFC
    - AC Voltage 100 - 240V, 50-60Hz
10) Chassis:
    - 19” industrial Rack mount movable
    - Front Panel should have lockable Door to Protect Drives
11) System Reliability:
    - Operating Temperature range: 10° to 35°C (50° to 95°F)

- Non-operating Temperature range: -40° to 70°C (-40° to 158°F)
- Operating Relative Humidity range: 8% to 90% (non-condensing)
- Humidity: 10 – 90% non-condensing
- Non-operating Relative Humidity: 5 to 95% (noncondensing)

12) Wall configuration: 16 DVI-D Outputs
13) Resolution: 1920x1200 per output minimum ( WUXGA )
14) Universal Inputs: 8 Universal Inputs (Should be able to accept at least 4 kinds of signals i.e. DVI/RGB/Component Video ) along with USB 3.0
15) Redundancy Support: System Should have the redundancy support for Controller HDD, power supply & LAN ( Gigabit Ethernet RJ-45 connection )
16) Connectivity: Connectivity between the controller & Video wall should be on Optical Fiber cables only.
17) Video Wall, Controller, Cube and wall management: Video Wall, Controller, Cube & Wall management software should be from same OEM for ensuring smooth operations and seamless integration and feature enablement and enhancement. All licenses of the software supplied with Controller and Video Wall should be with perpetual license and cost of the same should be included in the quoted cost.
18) Controller configuration: Two controllers should be provided which can act as backup to each other i.e. a single controller should be able to drive all the cubes of both the video walls.
19) Video Wall stand: Video Wall should be mounted on stand with minimum height of 750 mm ( two and half feet ) with flexibility of 50 mm height
20) Warranty: Comprehensive onsite warranty on the DLP video wall and Controller for 3 years

### 5.8.4. Video Management System

Video management system shall constitute of a platform which will be designed for viewing, recording and replaying acquired video as part of overall project solution. This platform will be based on the Internet Protocol (IP) open platform concept. Major functionalities are described here:

1) VMS shall be used for centralized management of all field camera devices, video servers and client users.
2) VMS server shall be deployed in a clustered server environment or support inbuilt mechanism for high availability and failover.
3) VMS shall support a flexible rule-based system driven by schedules and events.
4) VMS shall be supported for fully distributed solution for monitoring and control function, designed for limitless multi-site and multiple server installations requiring 24/7 surveillance with support for devices from different vendors.
5) VMS shall support ONVIF Profile S & G compliant internet protocol (IP) cameras.
6) The bidder shall clearly list in their proposal the make and models that can be integrated with the VMS, additionally all the offered VMS and cameras must have Open Network Video Interface Forum (ONVIF) compliance. VMS shall be enabled for any standard storage technologies and video wall system integration.

7) VMS shall be enabled for integration with any external Video Analytics Systems both server & edge based.
8) VMS shall be capable of being deployed in a virtualized server environment without loss of any functionality.
9) All CCTV cameras locations shall be overlaid in graphical map in the VMS Graphical User
10) Interface (GUI). The cameras selection for viewing shall be possible via clicking on the camera location on the graphical map. The graphical map shall be of high resolution enabling operator to zoom-in for specific location while selecting a camera for viewing.
11) VMS shall have an administrator interface to set system parameters, manage codecs, manage permissions and manage storage.
12) VMS day to day control of cameras and monitoring on client workstations shall be controlled through the administrator interface.
13) Whilst live control and monitoring is the primary activity of the monitoring workstations, video replay shall also be accommodated on the GUI for general review and also for pre- and post-alarm recording display.
14) The solution design for the VMS shall provide flexible video signal compression, display, storage and retrieval.
15) All CCTV camera video signal inputs to the system shall be provided to various command control center(s), viewing center etc., and the transmission medium used shall best suit the relative camera deployments and access to the CCTV Network.
16) VMS client shall have the capability to work with touch enabled multi-monitor workstations. It shall be capable of displaying videos in up to three (3) monitors simultaneously.
    a. AVI files
    b. Motion- Joint Photographic Experts Group (M-JPEG)
    c. Moving Picture Expert Group-4 (MPEG-4)
    d. MP4 Export or Latest
17) All streams to the above locations shall be available in real-time and at full resolution. Resolution and other related parameters shall be configurable by the administrator in order to provide for network constraints.
18) The VMS shall support field sensor settings. Each channel configured in the VMS shall have an individual setup for the following settings, the specific settings shall be determined according to the encoding device.
19) The VMS shall support the following operations:
    a. Adding an IP device
    b. Updating an IP device
    c. Updating basic device parameters
    d. Adding/removing channels
    e. Adding/removing output signals
    f. Updating an IP channel
    g. Removing an IP device
    h. Enabling/disabling an IP channel
    i. Refreshing an IP device (in case of firmware upgrade)

j. Multicast at multiple aggregation points

20) The VMS shall support retrieving data from edge storage. Thus, when a lost or broken connection is restored, it shall be possible to retrieve the video from SD card and store it on central storage. System should support to view the recordings available over cameras local storage device (such as an SD card), and copy them to the server.
21) The VMS shall support bookmarking the videos. Thus, allowing the users to mark incidents on live and/or playback video streams.
22) The VMS shall allow the administrator to distribute camera load across multiple recorders and be able shift the cameras from one recorder to another by simple drag and drop facility.
23) VMS shall support automatic failover for recording.
24) VMS should also support dual recording or mirroring if required.

### 5.8.5. Poles for Traffic Signals

#### A. Cantilever Pole

1) Pole type Hot Dip Galvanized after Fabrication with Silver coating of 86 micron as per IS:2629; Fabrication in accordance with IS-2713 (1980)
2) Height (ground-clearance): minimum 6 up to 10 meters, as per project site requirements.
3) Pole Diameter: Minimum 10 cm diameter pole (bidder to choose larger diameter for higher height)
4) Bottom base plate: Minimum base plate of size 30x30x1.5 cm
5) Mounting facilities: To mount Traffic signals, Pedestrian Signals, Switch, PA system etc.
6) Pipes, Tubes: All wiring must be hidden, through tubes/pipes. No wires shall be visible from outside.
7) Foundation: Casting of Civil Foundation with foundation bolts, to ensure vibration free erection (basic aim is to ensure that video feed quality is not impacted due to winds in different climatic conditions). Expected foundation depth of minimum 100 cm.
8) Protection: Lightning arrester shall be provided, to protect all field equipment mounted on pole.
9) For cantilever galvanised pole / gantry: 6.00 Meters long Pole having diameter 125 mm with a base plate is 300 x 300 x 20 mm.
   Pole sheet thickness is 4mm, with a suitable Arm length:-
   - For 2 lane Road 3 meters - ARM
   - For 3 lane road 4.5 metres - ARM
   - For 4 Lane Road 6 metres – ARM

   Arm to be made available on both sides where space for centrally mounted pole is available.

#### B. Standard Pole

1) Pole type Hot Dip Galvanized after Fabrication with Silver coating of 86 micron as per IS:2629; Fabrication in accordance with IS-2713 (1980)
2) Height (ground-clearance): minimum 4.5 up to 6 meters, as per project site requirements. Based on the location requirement suitable size standard pole to be considered.
3) Pole Diameter: Minimum 10 cm diameter pole (bidder to choose larger diameter for higher height)
4) Bottom base plate: Minimum base plate of size 30x30x1.5 cm
5) Mounting facilities: To mount Traffic signals, Pedestrian Signals, PA system Switch, etc.
6) Pipes, Tubes: All wiring must be hidden, through tubes/pipes. No wires shall be visible from outside.
7) Foundation: Casting of Civil Foundation with foundation bolts, to ensure vibration free erection (basic aim is to ensure that video feed quality is not impacted due to winds in different climatic conditions). Expected foundation depth of min. 100cms.
8) Protection: Lightning arrester shall be provided, to protect all field equipment mounted on pole.

### 5.8.6. Gantry or High-strength octagonal cantilever pole for RLVD system/SVD system

| S No | Description |
|---|---|
| 1 | Design Codes: Design should comply to following Standards/Codes/ and Documents |
| a | Load combination as per IS 800 : 2013 |
| b | Indian Standard IS 875 (Part 3):2015 |
| c | PLG 07 (High Mast for Lighting & CCTV) |
| d | Deflection Criteria As per clause no. 2.3.2.3 of PLG 07 |
| i | Maximum Deflection (in mm) – 25 times the nominal height (in m) |
| ii | Maximum Rotation (in degree) – 0.111 times the nominal height (in m) |
| e | Design Life of the structure should be minimum 15 years. |
| f | Basic Wind Speed shall be 120 km/h. |
| g | Ghust Effect Factor 3.5 |
| h | 6 Bolts Foundation Mount |
| 2 | MATERIAL GRADES |
| a | Pole shaft : A36 or Equivalent |
| b | Base plate : A572-50 or Equivalent |
| c | Anchor bolts : EN8 Grade |
| d | Structural shapes for Channel, angle, pipes as per IS:808 / IS:1161 / IS:2329 (YS: 240 Mpa or Equivalent) |
| e | Connection Bolts : Grade 5.6 |
| 3 | Galvanization |
| a | Galvanizing of the octagonal structure need to be in compliance w A123/153.Structure need to be PU painted of reputed makes after the Shot blasting on the galvanized surface for proper adhesion after applying the compatible primer coat. Galvanizing zinc tank should be lead free and Minimum Average Galvanization thickness should be 86 microns. |

| S No | Description |
|---|---|
| 4 | Tractability and Test Report |
| a | Manufacturer of the structures should have systems in place that will provide the following levels of test report traceability: direct, one-to-one traceability to pole shafts and base plates batch to other structural components The test reports and inspection records are maintained at manufacturer place. When requested, these can be provided to the customer no sooner than two weeks after the fabrication of the component |
| 5 | Dimension |
| a | Octagonal CCTV Pole height should be minimum 5.5 m height with minimum 3 m to 7.5 m cantilever arm. |
| b | There should be 7 m clear height available from the top of base plate. Structure joints should be such that they must accommodate the camera load and meet deflection criterion. It should not be using any supporting wire to meet the best asthetics of the structure above the cantilever arm. |
| 6 | Type of Foundation |
| a | Pole Structure should have design foundation with appropriate Grade of concrete ( M20) and should comply the soil test report 10T/SBC for foundation and J bolt Anchor Design |
| b | Steel anchor J bolts are embedded in the foundation. Base plate is welded at bottom of pole shaft and pole is fixed to foundation through base plate to anchor bolts connection. |
| c | The length of J bolt should be 1000 MM and dia of the J bolt should be 25 MM |
| | The distance between the bottom of the Base Plate to the Top of the concrete foundation should be max 1.5 times of the J bolt Diameter and this gap to be filled with the cement grout and sealed. |

### 5.8.7. Enterprise Management System (EMS)

To ensure that ICT systems are delivered at the performance level envisaged, it is important that an effective monitoring and management system be put in place. It is thus proposed that a proven Enterprise Management System (EMS) is proposed by the bidder for efficient management of the system, reporting, SLA monitoring and resolution of issues. Enterprise Management Solution should provide end-to-end, comprehensive, modular and integrated management of IT infrastructure components to maximize the availability of IT services and SLA performance. The proposed EMS should automatically document problems and interruptions for various IT services offered and integrate with the service level management system for reporting on service level agreements (SLAs).
The proposed EMS solution must consist of the following core modules:

A. Network Management System
B. SLA Management
C. Integrated Performance Management System:
D. Application Performance Management System

#### A. Network Management System

The system shall provide fault and performance management of the network infrastructure that various services operate in. The proposed solution shall provide the following features:

1) The proposed solution must automatically discover manageable elements connected to the infrastructure and map the connectivity between them. Solution should provide centralized monitoring console displaying the topology map view from a single central console.
2) The proposed Network Fault Management console must also provide network asset inventory reports and SLA reporting for the managed network infrastructure.
3) The proposed solution must automatically discover manageable elements connected to the network and map the connectivity between them.
4) The system must be able to support mapping and modelling of the infrastructure grouped by network connectivity, physical location of equipment and user groups or departments.
5) The modelling of network connectivity must be performed using standard or vendor-specific discovery protocols to ensure speed and accuracy of the network discovery.
6) The proposed solution should provide root-cause analysis with multiple root cause algorithms inbuilt for root cause analysis. It should also have a strong event correlation engine which can correlate the events on the basis of event pairing, event sequencing etc.

**B. SLA Management**

1) The proposed service management system should provide a detailed service dashboard view indicating the health of each of the ITMS components/solutions as well as the SLAs.
2) The proposed Service Dashboard should provide a high level view for executives and other users of the system. The system should provide an outage summary that gives a high level health indication for each service as well as the details and root cause of any outage.
3) The system must breakdown SLA by the hour and should allow to drill down on each hour to report violations.
4) The Service Level Agreements (SLAs) definition facility must support defining a set of one or more service Guarantees that specify the Service obligations stipulated in an SLA contract for a particular time period (weekly, monthly, and so on). Guarantees supported must include one that monitors service availability (including Mean Time to Repair (MTTR), Mean Time between Failure (MTBF), and Maximum Outage Time thresholds) and the other that monitors service transaction response time.
5) The system must provide the capability to designate planned maintenance periods for services and take into consideration maintenance periods defined at the IT resources level. In addition the capability to exempt any service outage from impacting an SLA must be available.

**C. Integrated Performance Management System**

This provides a comprehensive end-to-end performance management across key parts of the network infrastructure. It should allow identifying trends in performance in order to avert possible service problems.

1) The proposed performance management system shall integrate network, server and database performance information and alarms in a single console and provide a unified reporting interface for network components. The current performance state of the entire network & system infrastructure shall be visible in an integrated console.
2) Provide flow-based reporting for network troubleshooting and capacity management.
3) Provide Database Performance Monitoring.

**Network Performance Management System**

1) The Network Performance Management consoles must provide a consistent report generation interface from a single central console.
2) This central console shall also provide all required network performance reports (including latency, threshold violations, packet errors, availability, bandwidth utilization etc.) for the network infrastructure.
3) It shall provide comprehensive health reporting to identify infrastructure in need of upgrades and immediate attention.

**Server Performance Monitoring**

1) The proposed server performance management system shall integrate network performance management systems and provide the unified performance state view in a single console.

**Database Performance Monitoring**

1) The proposed database performance management system shall integrate network and server performance management systems and provide the unified view of the performance state in a single console.
2) It should be able to automate monitoring, data collection and analysis of performance from single point.
3) It should also provide the ability to set thresholds and send notifications when an event occurs, enabling database administrators (DBAs) to quickly trace and resolve performance-related bottlenecks.

**D. Application Performance Monitoring**

1) The proposed solution must provide a real-time application topology map to triage and quickly pinpoint the component causing a performance bottleneck in the end-to-end transaction flow.
2) The proposed solution must determine if the root cause of performance issues is inside the monitored application, in connected back-end systems or at the network layer from a single console view.
3) The proposed solution must proactively monitor 100% of real user transactions, detect failed transactions, gather evidence necessary for triage and diagnosis of problems that affect user experiences and prevent completion of critical business processes.

4) The proposed solution must gather available performance indicator metrics from all within real-time production environments and real user transactions 24x7 with minimal overhead on monitored applications without sampling.

## 5.9. Storage/Recording Requirements

It is proposed that the storage solution shall be modular enough to ensure compliance to the changes in storage / recording policy, to be evolved upon initial deployment of the system. The following storage requirements shall be fulfilled by the ITMS SI as scope for the project:

i. 30 days storage of all the traffic surveillance camera feeds to be stored at Data Centre and Flagged data (critical incidents) will be stored for approximately 90 days, permanent storage envisaged on secondary storage
ii. 90 days storage for all traffic enforcement systems including RLVD, SVD and ANPR at Data Centre.
iii. 365 days storage of traffic junction data for ITCS at Data Centre and Flagged data will be stored for 3 years.
iv. Above systems except ITCS are required to be stored on Primary storage for 7 days & on Secondary Storage for remaining days respectively at Data Centers.
v. For ITCS, Primary storage will be for 90 days and Secondary Storage for 275 days. Back up storage for 3 years.
vi. Data on storage would be over-written automatically by newer data after the stipulated time period. If some data is flagged by police personnel (or by designated personnel) as important data / evidence data due to some reporting of crime or accident in the area or due to court order or due to suspicious activity, it would need to be stored for longer duration, as per requirements.
vii. Full audit trail of reports to be maintained for 90 days.
viii. Bidder is expected to carry out the storage requirement estimation and supply as per the solution proposed.

Minimum Storage Requirement

| Sl. # | Minimum Storage requirement | TB |
|---|---|---|
| 1 | Primary Storage | 20 |
| 2 | Secondary Storage | 200 |

## 5.10. Common Guidelines regarding compliance of systems / equipment

1) All applicable laws, rules, regulations, and standards in force are required to be followed.
2) The specifications mentioned for various IT / Non-IT components are indicative requirements and should be treated for benchmarking purpose only. Bidders/ ITMS System Integrator are required to undertake their own requirement analysis and may propose higher specifications that are better suited to the requirements.
3) All IT Components should support IPv4 and IPv6

4) Technical Proposals should be accompanied by OEM‟s product brochure / datasheet. The Bidders shall provide complete make, model, part numbers and sub-part numbers for all equipment/software quoted in the Technical proposal.
5) The Bidders should ensure that only one make and model is proposed for one component in their Technical Proposal
6) The Bidders should ensure complete warranty and support for all equipment from OEMs.
7) All the back-to-back service agreements should be submitted along with the Technical Bid.
8) All equipment, parts should be original and new.
9) The user interface of the system should be a user friendly Graphical User Interface (GUI).
10) All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). JSCL reserves the right to ask replacement of any hardware / software if it does not conform to all the requirements specified in the RFP.

# 6. Service Level Agreements

The ITMS System Integrator will have to meet the Service Levels, as defined herein. The Service Levels have been segregated into:

- Implementation Service Levels
- Post-Implementation Service Levels

## 6.1. Implementation Phase Service Level

### 6.1.1. Timely Completion of Project Milestones

| | |
|---|---|
| **Definition** | Timely Completion of Project Milestones would comprise all milestones and deliveries including supply, installation and commissioning of ITMS Solutions that are to be completed as part of the project deliverables as per the defined timeframe, as per the Agreement.<br>Week is defined a seven-day calendar period, e.g. one starting with Sunday and continuing through Saturday. |
| **Service Level Requirement** | All the milestones/ deliverables defined in the have to be completed within the timelines without any delay. |
| **Measurement of Service Level Parameter** | To be measured in number of weeks of delay from the date of completion as defined in the Agreement. |
| **Default Charge for non-achievement of Service Level Requirement** | Default Charge of 0.25% of the corresponding value of line item(s) per week delay |

## 6.2. Post Implementation Service Level

### 6.2.1. Availability Measurement Calculation for a Month

Availability of Project components for a month will be measured using following formula.

{[(Actual Uptime + Scheduled Downtime) / Total No. of Working Hours in a Month] x 100}

Wherein,

**"Actual Uptime"** will mean, of the Total Hours, the aggregate number of hours in any month during which each equipment/Hardware/application is actually available for use.

**"Scheduled Downtime"** will mean the aggregate number of hours in any month during which each equipment, is down during total Hours, due to preventive maintenance, scheduled maintenance, infrastructure problems or any other situation which is not attributable to Service Provider's (or Service provider's) failure to exercise due care in performing Service Provider's responsibilities. The Authority would provide a maximum of 04 hours of planned downtime for the preventive maintenance (as part of scheduled downtime) per month per equipment/service.

**"Total Working Hours**" will mean the total hours over the measurement period i.e. one month (24 * number of days in the month).

**Downtime Calculation**

The recording of downtime will commence at the time of registering the call with Helpdesk/Service Provider for any downtime situation for the equipment. Downtime will end when the problem is rectified and the Hardware/equipment is available to the user.
Down time will not be considered for following:

1) Pre-scheduled preventive maintenance and health checks (Scheduled Downtime).
2) Downtime arising out of the incidents not attributable to ITMS System Integrator.

### 6.2.2. General Terms

The SLA will be monitored and Default Charges computed on monthly basis.

1) Default Charges for a month will be capped at ten percent (10%) of the total Service Charge for the given month.
2) The number and format of reports will be as per requirements provided by JSCL.
3) In case, JSCL so desires, the SLAs may be reviewed on yearly basis and may be amended based on mutual agreement. Till such time, any revision is mutually agreed, the existing SLAs will continue to be in force.
4) SLA will be excluded in case of incidents/instances not attributable to the ITMS System Integrator.

### 6.2.3. Availability of Field Equipment

| | |
|---|---|
| **Definition** | Availability of Field equipment will mean that the equipment is able to perform its intended functions.<br><br>Field equipment will include Traffic Signal, field components of ITCS, PA system, Traffic Junction Surveillance camera, enforcement cameras and other ITMS devices used in the field. |
| **Service Level Requirement** | The average availability of the Field equipment should be at least 99% in a month. |
| **Measurement of Service Level Parameter** | {[(Actual Uptime + Scheduled Downtime) / Total No. of Working Hours in a Month] x 100}<br>Each category of Device must separately meet the minimum Availability Standard of Performance on monthly basis |
| **SLA Exclusion** | Excludes:<br>• Scheduled downtime, subject to agreed schedule<br>• Vandalism damage |

<table>
<tr><td>Default Charge for non-achievement of Service Level Requirement</td><td>If the ITMS System Integrator is not able to meet the above defined service level requirement, then any deviation from the same would attract a default charge as per the following:
<table>
<tr><td>Availability (Monthly average)</td><td>>= 98 % to <99%</td><td>>= 97% to <98%</td><td><97%</td></tr>
<tr><td>Default Charge per month</td><td>Rs. 50 per percentage Point drop below Service Level for traffic signals (per traffic signal installed)</td><td>Rs. 75 per percentage Point drop below Service Level for traffic signals (per traffic signal installed)</td><td>Rs. 100 per percentage Point drop below Service Level for traffic signals (per traffic signal installed)</td></tr>
<tr><td></td><td>Rs. 25 per percentage Point drop below Service Level for enforcement system as below:<br><br>For PTZ/ANPR system – per camera<br><br>For RLVD/SVD system – per lane</td><td>Rs. 50 per percentage Point drop below Service Level for enforcement system as below:<br><br>For PTZ/ANPR system – per camera<br><br>For RLVD/SVD system – per lane</td><td>Rs. 75 per percentage Point drop below Service Level for enforcement system as below:<br><br>For PTZ/ANPR system – per camera<br><br>For RLVD/SVD system – per lane</td></tr>
</table>
</td></tr>
</table>

### 6.2.4. Availability of ITMS Applications

| | |
|---|---|
| **Definition** | Application availability refers to the total time when the ITMS Applications is available to the users for performing all activities and tasks.<br>ITMS Applications will include all applications being proposed by the ITMS System Integrator such as Applications for ANPR, RLVD, SVD, E-Challan Application etc. |
| **Service Level Requirement** | The average availability of the ITMS Applications should be at least 99.5 % in a month |

<table>
<tr><td>Measurement of Service Level Parameter</td><td>{[(Actual Uptime + Scheduled Downtime) / Total No. of Working Hours in a Month] x 100}</td></tr>
<tr><td>SLA Exclusion</td><td>Any scheduled and approved preventive maintenance activity by the ITMS System Integrator should be carried out with prior approval JSCL/Jabalpur Police. Such scheduled and approved preventive maintenance activities will preferably be carried out during night time (11 PM to 5 AM) and will not exceed two instances in a quarter and each instance will not exceed 4 hours.</td></tr>
<tr><td>Default Charge for non-achievement of Service Level Requirement</td><td>If the ITMS System Integrator is not able to meet the above defined service level requirement, then any deviation from the same would attract a default charge as per the following:
<table>
<tr><td>Application Availability (Monthly average)</td><td>>= 99.25 % to <99.5%</td><td>>= 99.0% to <99.25%</td><td>< 99.00%</td></tr>
<tr><td>Default Charge per month</td><td>Rs. 25,000</td><td>Rs. 50,000</td><td>Rs. 1,00,000 (per 0.20 % drop or part thereof subject to minimum of Rs. 1 lakh)</td></tr>
</table></td></tr>
</table>

### 6.2.5. Application Response Time

<table>
<tr><td>Definition</td><td>Application response time refers to the page load time, i.e. the time for loading a webpage of the ITMS Applications.<br>ITMS Applications will include all applications being proposed by the ITMS System Integrator such as Applications for ANPR, RLVD, SVD, E-Challan Application etc.</td></tr>
<tr><td>Service Level Requirement</td><td>The average application response time for users (time taken for loading of a web page) should not exceed 10 seconds in a month.</td></tr>
<tr><td>Measurement of Service Level Parameter</td><td>Application response time will be measured on the basis of automated reports. The data should be captured through automated tools every 30 minutes during the working hours.</td></tr>
<tr><td>Default Charge for non-achievement of Service Level Requirement</td><td>If the ITMS System Integrator is not able to meet the above defined service level requirement, then any deviation from the same would attract a default charge as per the following:
<table>
<tr><td>Response Time (Monthly average)</td><td>> 10 secs to <12 secs</td><td>>=12 secs to < 16 secs</td><td>>= 16 secs</td></tr>
<tr><td>Default Charge per month</td><td>Rs. 20,000</td><td>Rs. 30,000</td><td>Rs. 50,000</td></tr>
</table></td></tr>
</table>

### 6.2.6. Availability of Network Connectivity

<table>
<tr><td>Definition</td><td>Network Availability refers to the total time when the connectivity is available to the users.</td></tr>
<tr><td>Service Level Requirement</td><td>The average availability of the Network connectivity at various project locations except DC should be at least 99% in a month.</td></tr>
<tr><td>Measurement of Service Level Parameter</td><td>Total Uptime of the Network Connectivity in a month in minutes)/ (Total Time in a Month in minutes)] *100<br><br>The above time would be calculated on 24 X 7 basis.</td></tr>
<tr><td>SLA Exclusion</td><td>Any scheduled and approved preventive maintenance activity by the ITMS System Integrator should be carried out with prior approval JSCL/Jabalpur Police. Such scheduled and approved preventive maintenance activities will preferably be carried out during night time (11 PM to 5 AM) and will not exceed two instances in a quarter and each instance will not exceed 4 hours.</td></tr>
<tr><td>Default Charge for non-achievement of SLA</td><td>
<table>
<tr><td>Connectivity per location (Monthly average)</td><td>>= 98 % to <99%</td><td>>= 97% to <98%</td><td><97%</td></tr>
<tr><td>Default Charge per incident (per month)</td><td>Rs. 15,000</td><td>Rs. 20,000</td><td>Rs. 25,000 (per percentage drop or part thereof)</td></tr>
</table>
</td></tr>
</table>

### 6.2.7. Security & Incident Management

<table>
<tr><td>Definition</td><td>Security incidents could consist of any of the following but not limited to:<br>• Virus Attack – This will include malicious code infection of any of the desktops/servers in the network.<br>• Denial of Service Attack - This will include non-availability of service<br>• Data Theft - Compromise of any kind of data through network.<br>• Intrusion – Unauthorized access to ITMS Application / network resulting in loss of confidentiality/Integrity/ availability of data.</td></tr>
<tr><td>Service Level Requirement</td><td>Zero incident</td></tr>
<tr><td>Measurement of Service Level Parameter</td><td>Count of incidents of security breach including Virus Attack, Denial of Service Attack (DoS), Intrusion in a month</td></tr>
<tr><td>Default Charge for non-achievement of SLA</td><td>If the ITMS System Integrator is not able to meet the above defined service level requirement, then any deviation from the same would attract a default charge of Rs. 5,000 per incident.</td></tr>
</table>

# 7. Indicative Bill of Materials

The Proposed Indicative Bill of Materials for the Project is as given in Table **3-1**

*Table 7-1: Proposed Indicative Bill of Materials*

| Sl. # | Line Item/Description | Unit | Quantity |
|---|---|---|---|
| **A** | **TRAFFIC MANAGEMENT COMPONENTS** | | |
| 1. | Intelligent Traffic Control System (ITCS) for a T-Junction with complete hardware including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | Junction | 7 |
| 2. | Intelligent Traffic Control System (ITCS) for a 4-arm Junction including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | Junction | 9 |
| 3. | Intelligent Traffic Control System (ITCS) for a 5-arm Junction including traffic controller, LED aspects, non-intrusive detectors, mounting infrastructure, accessories etc. as required | Junction | 1 |
| 4. | PA system including mounting infrastructure, accessories etc. as required | Location | 17 |
| 5. | Traffic Junction Surveillance System – Traffic surveillance cameras as required. | No. | 17 |
| 6. | PTZ camera | No. | 3 |
| 7. | PA system software application | License | 1 |
| 8. | Traffic Junction Surveillance (software with licenses) | License | 17 |
| **B** | **TRAFFIC ENFORCEMENT COMPONENTS** | | |
| 1. | Red Light Violation Detection (RLVD) System with complete hardware including ANPR cameras, Overview Cameras, Local Processing Unit, with cabling, accessories & mounting infrastructure as required | Junctions/Lane | 17/90 |
| 2. | ANPR system at each junction/location with complete hardware and accessories as required | Location/camera | 3/6 |
| 3. | Speed Violation Detection System for covering 3 lanes in one direction with complete sub-components including ANPR camera, wide angle evidence camera, IR illuminator, non-intrusive speed sensor, with cabling, accessories & mounting infrastructure as required | Locations/lane | 5/24 |

| Sl. # | Line Item/Description | Unit | Quantity |
|---|---|---|---|
| 4. | RLVD Software with licenses | Licenses | 17 |
| 5. | ANPR Software with licenses | License | 3 |
| 6. | SVD Software with licenses | License | 5 |
| 7. | E-Challan Application Development/Customization Cost including Payment Portal Development Cost, and Payment Gateway integration Cost and other software (if any) | No. | 1 |
| C | **DATA CENTER** | | |
| 1. | Managed services for Data Center - Server and Operating systems for (including but not limited to):<br>• Intelligent Traffic Control System<br>• PA system<br>• Traffic Junction Surveillance System<br>• RLVD System<br>• ANPR System<br>• SVD System<br>• E-Challan System | No. | As per proposed solution of Bidder |
| 2. | Video Management System | Licenses | 17 |
| 3. | Enterprise Management System (including SLA Management, Helpdesk Management, Network Management, etc.) | No. | 1 |
| 4. | Integration with City CCC | LS | 1 |
| D | **CONNECTIVITY** | | |
| 1. | Junctions with the following systems:<br>• ITCS<br>• PA system<br>• Traffic Junction Surveillance System<br>• RLVD System | Location | 17 |
| 2. | Locations with ANPR System | Location | 3 |
| 3. | Locations with Speed Violation Detection System | Location | 5 |
| 4. | Internet Leased line connectivity for Data Center & TCC | Location | 1 |
| E | **CAPACITY BUILDING & TRAINING** | | |
| 1. | Functional training - For Traffic Management and Traffic Enforcement solutions | Training Day | 4 |
| 2. | Administrative Training - For Traffic Management and Traffic Enforcement solutions | Training Day | 4 |

| Sl. # | Line Item/Description | Unit | Quantity |
|---|---|---|---|
| H | **TRAFFIC CONTROL CENTER (TCC)** | | |
| 1. | Video Wall Cube - 70” in 4X3 matrix | Cube | 12 |
| 2. | Video Wall Controller & Application | No. | 1 |
| 3. | Monitoring Workstations with 3 Monitors for TCC with UPS | No. | 10 |
| 4. | Network Printers (MFC) | No. | 2 |
| 5. | Local Printer | Set | 1 |
| 6. | Video Conferencing Solution | Set | 1 |
| 7. | I.P Phones | No. | 5 |
| 8. | Managed Switch -48 Ports | No. | 2 |
| 9. | Civil Work (Masonry work, Flooring, Ceiling, Partitioning Work, Office Workstations, Furniture and Fixtures) | LS | 1 |
| 10. | Electrical Cabling & Necessary Illumination Devices | LS | 1 |
| 11. | Fire Safety System with alarms | LS | 1 |
| 12. | Access Control System (RFID/Proximity based, for all staff) | LS | 1 |
| 13. | Air Conditioning | LS | 1 |
| 14. | DG Set as per requirement | LS | 1 |
| 15. | Rodent Repellent system | Set | 1 |

# 8. Annexure I - List of Locations

## 8.1. List of Locations for Proposed ITCS, PA system, Traffic Junction Surveillance System and RLVD system

| Sl # | Name of Junction/Location | No. of Arms | Currently Signalised (Yes/No) | Lanes on Major Corridor (Single carriageway) | Lanes on Minor Corridor (Single carriageway) |
|---|---|---|---|---|---|
| 1 | Damoh naka chowk | 4- arm Junction | Yes | 4 | 1 |
| 2 | Choti Line Junction | 4- arm Junction | No | 3 | 4 |
| 3 | Jabalpur Hospital Jn. | T- Junction | Yes | 2 | 2 |
| 4 | Russel Chowk | T- Junction | Yes | 2 | 3 |
| 5 | Rajiv Gandhi Chowk | T- Junction | No | 2 | 2 |
| 6 | Tripuri Chowk | T- Junction | No | 2 | 1 |
| 7 | Old Bus Stand 'T' Piont | T- Junction | Yes | 3 | 2 |
| 8 | Bloom Chowk Junction | 4- arm Junction | Yes | 2 | 4 |
| 9 | Ranital Chowk | 5- arm Junction | Yes | 4 | 3 |
| 10 | Malviya Chowk | T- Junction | No | 2 | 2 |
| 11 | Madan Mahal Chowk | 4- arm Junction | Yes | 2 | 4 |
| 12 | Raddi Chowk | 4- arm Junction | Yes | 2 | 4 |
| 13 | Baldevbagh Jn. | 4- arm Junction | Yes | 3 | 3 |
| 14 | Labour chowk | 4- arm Junction | Yes | 2 | 4 |
| 15 | ISBT Chowk | 4- arm Junction | Yes | 2 | 4 |
| 16 | Satpula Crossing | T- Junction | No | 2 | 2 |
| 17 | Teen Patti Chowk | 4- arm Junction | Yes | 2 | 4 |

## 8.2. List of Proposed Locations for ANPR System

| Sl # | Proposed Location | No. of ANPR Cameras proposed | Remarks |
|---|---|---|---|
| 1. | Medical College | 2 | City entry/exit point |
| 2. | Police Chowki Thana Gaur Barela, Barela Road | 2 | City entry/exit point |
| 3. | Jabalpur Engineering College, Ghana Road | 2 | City entry/exit point |
| **Total** | | **6** | |

## 8.3. List of Locations for Speed Violation Detection System

| Sl. # | Name of Location | No. of lanes to be covered. |
|---|---|---|
| 1. | Deen Dayal Junction towards NH by-pass | 3 lanes on each side |
| 2. | Near Dhanvantri Nagar crossing | 2 lanes on each side |
| 3. | Near Maharajpur Junction towards NH by-pass | 3 lanes on each side |
| 4. | Near Medical College | 2 lanes on each side |
| 5. | IIITDM College, Dumna Road | 2 lanes on each side |
| | **Total** | **Total 24 lanes** |

# Annexure II – Indicative list of activities for E-challan process

| Steps | Process Description | Actor | Remarks, if any |
|---|---|---|---|
| 1. | RLVD/SVD/ANPR system detects a violation and captures the image of the Number plate of the vehicle and overview camera (in case of RLVD system) captures a snapshot of the surrounding<br>Following violations to be<br>- Red Light violation<br>- Stop line violation<br>- Speed limit violation<br>- Triple riding on two-wheelers<br>- Driving two-wheelers without helmet | System | 1. "Confidence level" for the System to be set. Automatic e-challan generation to be based on the set Confidence Level.<br>2. E-challan to be generated automatically for confidence level above set value. |
| 2. | In case the confidence level is below the set value, the operator validates the "Number" with the image(s) of the Number plate as popped up by the system. | ITMS System Integrator | |
| 3. | The System checks the registration details of the "Number" with the RTO database (MP transport database and Vahan Database) | System | |
| 4. | The operator validates the vehicle registration details for issuance of e-challan.<br>Operators prepares an exception list based on the following:<br>- Mismatch in information captured by the System and the information as per RTO database.<br>- Incomplete details relating to address, contact number as per RTO database due to which challan cannot be dispatched to violators. | ITMS System Integrator | |
| 5. | The system automatically calculates the penalty for different types of violation as per the MV Act, as applicable. | System | |
| 6. | In case of any discrepancy/incompleteness in the information regarding the address of the vehicle owner provided in the RTO database, the operator validates the details of the driver owner by calling up the contact number (wherever contact numbers are provided) as provided in the RTO database, and also updates the e-Challan database based on the confirmation received from the vehicle owner. | ITMS System Integrator | In case of discrepancy where contact number are not provided or where the information regarding address of vehicle owner cannot be confirmed due to any reason, those cases have to be dropped, and e-challan cannot be issued. |

| Steps | Process Description | Actor | Remarks, if any |
|---|---|---|---|
| 7. | Printing of e-Challan by Operators after proper verification of Name, address and Contact details | ITMS System Integrator | |
| 8. | Signing of printed copies of e-Challan. Provision also to be made for digital signature by police official | Police dept. | 1. Mechanism shall be worked with Traffic Police for signing of e-Challan hard-copies.<br>2. System Integrator to maintain a copy of signed e-challan for future reference, Hardcopy as well as soft copy. |
| 9. | Dispatch of hardcopy e-challan by speed post/registered post. And, also a soft copy via email/Whatsapp wherever applicable. | ITMS System Integrator | Speed post shall be mandatorily sent to vehicle owners. |
| 10. | Payment option for e-challan<br>- MP Online - Madhya Pradesh Police e-Challan<br>- MP Treasury portal<br>- 311 mobile App<br>- Payment in cash at police station | Public | The System shall integrate with existing payment options. |
| 11. | For payment in cash at police station - System Integrator to update the ITMS system, based on the challan payment receipts received from the police. | ITMS System Integrator | 1. Police to maintain triplicate copies of challan payment receipt - one for violator, one for police records and one for System Integrator.<br>2. System Integrator shall arrange to collect the challan payment receipts from designated police stations in Jabalpur on a periodic basis, say, daily, every two days, or as decided by JSCL and Police dept. |
| 12. | Police dept. deposits the accumulated cash received against issued challan at govt. treasury. | Police dept. | |
| 13. | The system to generate reminder e-challan for challan pending for more than specified duration as finalised by JSCL/Police dept. | System | |
| 14. | Reminder to payment to challan to be sent to violators via speed post | ITMS System Integrator | |

| Steps | Process Description | Actor | Remarks, if any |
|---|---|---|---|
| 15. | Various reports to be generated by the system, including but not limited to:<br>- Dashboard<br>- Total challans issued<br>- Challan paid<br>- No.of challan pending<br>- Types of default/violations<br>- Various analyses | ITMS System Integrator | |

Note: The above steps and roles are indicative and shall be finalised at the time of implementation phase.