REQUEST FOR PROPOSAL

for

SELECTION OF IMPLEMENTATION AGENCY FOR INTEGRATED TRAFFIC CONTROL SYSTEM (ITCS) IN SURAT CITY

Volume 1 – Terms of Reference

Tender Number: GM(TRANSIT)/SSCDL/BRTS/2/2022-2023

Last date for Online Price Bid Submission: 15.10.2022

Last date for Technical Bid Submission: 18.10.2022

Invited by

Surat Smart City Development Limited

1st Floor, South Zone Office, Surat Municipal Corporation, Opp. Satyanagar, Udhna, Surat – 394210, Gujarat, India

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1. Disclaimer

The information contained in this Request for Proposal document ("**RFP**") whether subsequently provided to the bidders, ("**Bidder/s**") verbally or in documentary form by Surat Smart City Development Limited (henceforth referred to as "**SSCDL**" in this document) or any of its employees or advisors, is provided to Bidders on the terms and conditions set out in this Tender document and any other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is not an offer or invitation to any party. The purpose of this RFP is to provide the Bidders or any other person with information to assist the formulation of their financial offers ("**Bid**"). This RFP includes statements, which reflect various assumptions and assessments arrived at by SSCDL in relation to this scope. This Tender document does not purport to contain all the information each Bidder may require. This Tender document may not be appropriate for all persons, and it is not possible for the Chief Executive Officer, SSCDL and their employees or advisors to consider the objectives, technical expertise and particular needs of each Bidder. The assumptions, assessments, statements and information contained in the Bid documents, may not be complete, accurate, adequate or correct. Each Bidder must therefore conduct its own analysis of the information contained in this RFP and to seek its own professional advice from appropriate sources.

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

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

SSCDL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP. SSCDL may in its absolute discretion, but without being under any obligation to do so, can amend or supplement the information in this RFP.

The issue of this Tender document does not imply that SSCDL is bound to select a Bidder or to appoint the Selected Bidder (as defined hereinafter), for implementation and SSCDL reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by SSCDL or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and SSCDL shall not be liable in any manner whatsoever for the same or

for any other costs or other expenses incurred by a Bidder in preparation for submission of the Bid, regardless of the conduct or outcome of the Selection process.

2. Glossary

Terms	Meaning
BOM	Bill of Material
BEC	Bidders Evaluation Committee
CC	Capital Cost
CCTV	Closed Circuit Television
CEO	Chief Executive Officer
DD	Demand Draft
EMD	Earnest Money Deposit
GoG	Government of Gujarat
ICT	Information and Communication Technology
IT	Information Technology
ITCS	Integrated Traffic Control System
ITES	Information Technology Enabled Services
INR	Indian Rupee
LoI	Letter of Intent
OEM	Original Equipment Manufacture
PBG	Performance Bank Guarantee
PDD	Proposal Due Date
PQ	Pre-Qualification
PSU	Public Sector Undertaking
RFP	Request for Proposal
PV	Present Value
SI	System Integrator
SLA	Service Level Agreement
SMC	Surat Municipal Corporation
SSCDL	Surat Smart City Development Limited
TQ	Technical Qualification

3. Notice Inviting Bid

Surat Smart City Development Limited (SSCDL)
1st Floor, South Zone Office, Surat Municipal Corporation,
Opp. Satyanagar, Udhna, Surat-394210, Gujarat, India

Notice for Inviting RFP for "SELECTION OF IMPLEMENTATION AGENCY FOR INTEGRATED TRAFFIC CONTROL SYSTEM (ITCS) IN SURAT CITY"
[GM(TRANSIT)/SSCDL/BRTS/2/2022-2023]

Bid for Implementation of Integrated Traffic Control System (ITCS) is invited online on https://smc.nprocure.com from the bidder meeting the basic eligibility criteria as stated in the bid document.

Bid Fee (Non-refundable)	Rs.21,240/- (Rs. 18,000 + 18% GST)by Demand Draft or Banker's Cheque
EMD	The bidder should pay EMD of Rs. 75,00,000 (Rupees Seventy five lakhs only) whereby 50% amount shall be in the form of Demand Draft/Banker's Cheque in favour of "Surat Smart City Development Limited" from Nationalized or Scheduled bank and 50 % amount shall be in the form of Bank guarantee(BG) of any nationalized / scheduled banks with validity of 180 days from the date of Bid opening
Last date of submit the Pre-Bid Queries	By email to brts@suratmunicipal.gov.in on or before 07.10.2022, 16:00 hrs.
Online Price Bid End Date	Till 15/10/2022 up to 18:00 hrs.
Technical Bid Submission (in Hard Copy) along with EMD & Bid fee	In sealed envelope strictly by RPAD/Postal Speed Post On or before 18/10/2022 up to 17:00 hrs. To the Chief Accounts, Surat Municipal Corporation, Muglisara, Surat – 395003, Gujarat by RPAD or Speed Post Only.
RFP Document Availability	https://smc.nprocure.com, http://suratsmartcity.com/Tenders,

The right to accept/reject any or all bid(s) received is reserved without assigning any reason thereof.

General Manager (Transit)
Surat Smart City Development Ltd

4. Important Dates

#	Information	Details
1.	Project Name/ Name of Work	"Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City"
2.	RFP Reference No.	GM(TRANSIT)/SSCDL/BRTS/2/2022-2023
3	Website to download RFP	https://smc.nprocure.com, http://suratsmartcity.com/Tenders,
4	RFP Fees	Rs.21,240/- (Rs. 18,000 + 18% GST)by Demand Draft or Banker's Cheque
5	**EMD Amount**	The bidder should pay EMD of Rs. 75,00,000 (Rupees Seventy five lakhs only) whereby 50% amount shall be in the form of Demand Draft/Banker's Cheque in favour of "Surat Smart City Development Limited" from Nationalized or Scheduled bank and 50 % amount shall be in the form of Bank guarantee(BG) of any nationalized / scheduled banks with validity of 180 days from the date of Bid opening

5. Introduction and Background

5.1. About Surat

Surat is located in western part of India in the state of Gujarat, Surat is referred as the silk city and the diamond city. It has the most vibrant present and an equally varied heritage of the past. Surat is also known as economic capital of Gujarat and is having one of the highest growth rates amongst Asian cities. As per the Census 2011, it is the eighth largest city in the country with population of 4.48 million population. On the scale of population growth, Surat is the fastest growing city in Asia and holds 4th rank in the world. On the economic front, Surat holds top position with highest per house-hold income in the country

Surat has been selected at 4th position as one of the twenty Indian cities (in the first round of selection) to be developed as a smart city under Smart Cities Mission.

5.2. About Surat Municipal Corporation

The Surat Municipal Corporation (SMC) has responded to the challenges of fastest population growth and high-speed economic development by adopting the best urban management practices. The administration of SMC with the help of the people and elected members of the city has transformed Surat to one of the cleanest cities of India. SMC has taken all necessary steps to make the city a better place to live with all amenities. SMC has taken up many path breaking initiatives and these efforts have been acknowledged at national and international level.

Utilization of Information Technology (e-Governance)

SMC had harnessed the power of IT before it became ubiquitous and a necessity for organizations of its nature and size. SMC is one of the few local self-government to adopt computerization in its early phases and use it for better governance, improving operational efficiency and increasing ease of interaction with citizens. SMC has initiated various e-Governance and m-Governance projects. The same have been recognized at national/international level. Following is the list of awards received in recent past:

1. 'Project Award' to Surat Smart City's 'One City One Card - Digitalization for cashless travel by integration of Automatic Fare Collection System with Surat Money Card' under 'Mobility & Transportation' Category by MoHUA in'India Smart Cities Awards 2019' in January 2020
2. 'Smart Project Award' to Surat Smart City's 'Automatic Fare Collection System (AFCS)' under 'Smart Transportation' Category by Smart Cities Council India in September 2019
3. 'Digital India Award' for 'Open Data Initiative' under 'Open Data Champion' Category by Ministry of Electronics and Information Technology, Govt. of India in February 2019
4. 'City Award' to Surat Smart City for showing best momentum in implementation of projects under 'India Smart Cities Award' 2018 by MoHUA in July 2018
5. 'Project Award' to Surat Smart City's Integrated Transit Management System (ITMS) under 'Transport and Mobility' Category of 'India Smart Cities Award' 2018 by MoHUA in July 2018
6. 'Smart Project Awards' for SMAC Centre and ITMS projects by Smart City Council of India, March 23, 2018

7. SKOCH 'Order-of-Merit' Award for Surat Smart City's Project Management System, 2018
8. Digital Leader of the Year Award, 2017
9. National e-Governance Award, 2017
10. Business World Smart Cities Award 2016–Dec, '16
11. Digital India Award 2016 (Platinum Icon)–Dec, '16
12. IT Innovation & Excellence 2016 Award–Oct, '16
13. Express IT Award 2015 (Bronze) For SMC Mobile App
14. Vodafone – Mobile for Good Award 2014 to Citizen's Connect – SMC Mobile App
15. Skoch Order-of-Merit to Citizen's Connect – SMC Mobile App
16. mBillionth Award South Asia 2014 to Citizen's Connect – SMC Mobile App
17. HUDCO Award for Best Practices to Improve the Living Environment 2013-14 for Mobile App & Virtual Civic Center (Online Services)
18. Skoch Gold Award & Order-of-Merit for Use of e-Governance for Improved Service Delivery
19. The Janaagraha G2C Award 2012 for Best website under the category "Transparency and Accountability"
20. City Civic Centre won the National Award for e-Governance 2007-08 (Bronze) for Outstanding Performance in Citizen Centric Service Delivery
21. Golden Jubilee Memorial Trust Awards 2007-08 for Outstanding Utilisation of Communication & Information Technology from Southern Gujarat Chamber of Commerce
22. The Grievance Redressal System awarded the Best Practice Award by CMAG & FIRE[D]
23. Certificate of Merit by NIUA – FIRE(D) for the best website in the year 2001

5.3. About Surat Smart City Development Limited (SSCDL)

As per the GoI guidelines, Surat Municipal Corporation has formed a separate Special Purpose Vehicle (SPV) as Surat Smart City Development Ltd. (SSCDL) for the implementation of projects under the smart city mission for the city of Surat. This SPV shall carry end to end responsibility for vendor selection, implementation and operationalization of various smart city projects.

5.4. Project Background

One of the primary objective of Surat Smart City Development Limited (SSCDL) is to develop Smart traffic management & enforcement solutions - Integrated Traffic Control System (ITCS) which provide greater information to the authorities to proactively manage the ongoing traffic situation and allow citizens to make informed travel choices. With ITCS, the overall burden of traffic on the roads will reduce and it will result in greater journey time, reliability for the citizens and local businesses improving overall productivity levels.

SSCDL is considering the appointment of an agency to set up priority initiatives identified under the Smart City mission which will include Adaptive Traffic control System (ATCS), Traffic Enforcement System (TES) including Red Light violation Detection(RLVD) System, Speed Violation Detection(SVD) System, General Surveillance System, etc.

5.5. Project objectives

The ITCS services will include strengthening of four key areas of traffic management within the city:

1. Enhance Situational Awareness of existing traffic conditions on real time basis
2. Develop ability to assimilate and Analyze Real Time Traffic Information and historic trends to enable automated adaptive traffic control and support decision making on traffic management strategies
3. Create linkages to support Information Sharing through traffic controllers, Web Services and APIs
4. Ensure long term Capacity Building through training and support for city administrative staff

The following technology solutions will be procured through this tender as per the requirements set out in Volume II of this RFP:

1. Adaptive Traffic Signal Control System (ATCS)
2. Traffic Surveillance systems
3. Red Light Violation Detection (RLVD) system
4. Automatic Number Plate Recognition (ANPR) System
5. Speed Violation Detection System

5.6. Project Beneficiaries

The beneficiaries of the project include:

- Citizens
- Government Departments (i.e., Surat Municipal Corporation, Police Department, etc.)

5.7. Project coverage

Project coverage will include Supply, Installation, Testing, Commissioning and Operation & Maintenance of Traffic Signal Hardware/equipment, other intelligent transport solutions (i.e., RLVD, SVD, General Surveillance, etc.) to support Smart Traffic Management of city transport infrastructure and Operation & Maintenance of existing infrastructure as mentioned in this RFP. The selected vendor will also be responsible for supply of IT solution for the management of these signals, hardware, and application software and signal management, networking, installation, Training, Maintenance and operations of the solution for 5 year for Surat in an efficient and effective manner.

5.8. Overall project scope

The minimum specified scope of work to be undertaken by the bidder for setting up and operating ITCS Project is mentioned below. The selected bidder shall install Adaptive Traffic Control System(ATCS) at identified junctions and link them with the Integrated Command and Control Centre(ICCC) and Traffic Command and Control Center (TCC) including a centralized traffic management platform enabled with real time analytics capability as per SLA requirements.

The following key tasks are covered under the scope document:

1. To provide the traffic signal related services round the clock, without any break in the service at all junctions
2. To plan, develop and operate the adaptive traffic signals which could be operated remotely from the ICCC & TCC under normal condition in coordination with other junctions and while retaining the capability to operate independently in case of system failure based on the existing traffic information.
3. To monitor health of every signal point from the centralized ICCC & TCC to attend to the failures/ breakdowns through a robust IT solution that networks all signals.
4. Create a Centralized Management Information System (MIS) as a part of the IT solution for faster decision making in traffic emergency such as heavy rain fall, accidents, terrorist attack, VVIP movements, etc.
5. To provide integration methods of gathering information from the online real time cameras (cameras at Traffic Junction) into the IT solution for future requirements and analysis of traffic flows and violations.
6. To manage the signals as well as the traffic through a Centralized IT solution / application software located at the command center as per the specifications provided in the RFP.
7. To facilitate traffic rules enforcement through design, supply, and installation of Red-Light Violation Detection (RLVD). Each of these systems shall be integrated with the Traffic Command and Control Centre/Integrated Command and Control Center
8. The traffic enforcement cameras will be integrated with existing e-Challan system currently deployed at Police Department for issuance of challans. Necessary integration to be done by SI without any financial implication to the SSCDL.
9. To provide open APIs for traffic related information and services, such as journey planners and accident reporting through an online portal and mobile app
10. All the Application deployed under this project needs to be Integrated with Integrated Command and Control Center (ICCC) Application, which is being implemented at present by SSCDL. Necessary API needs to be shared with SSCDL as per requirement of SSCDL without any additional implication to SSCDL.
11. To train and manage the administrative staff and offer back-end support on the operations of the ICCC & TCC using the departmental manpower
12. Operation & Maintenance of the existing IT infrastructure as mentioned in RFP

6. Bidder's Eligibility Criteria

The bidder must possess the requisite experience, strength and capabilities in providing services necessary to meet the requirements as described in the RFP document. Keeping in view the complexity and volume of the work involved, following criteria are prescribed as the Bidder's Eligibility criteria for the bidder interested in undertaking the project. The bidder must also possess technical know-how and financial ability that would be required to successfully provide System Integration, Operation and Maintenance services sought by SMC/SSCDL for the entire contract duration. The bids must be complete in all respect and should cover entire scope of work as stipulated in the bid document. This invitation to bid is open to all bidders who qualify the eligibility criteria as given below:

The Bidder's Eligibility Criteria for the selection of the SI are given below. In case of consortium , please refer the section 7.6.

Note: For evaluation following definition is considered

The completion / implemented project is defined as those projects that have been install, commissioned and gone live in last 7 years from the date of publishing of this RFP.

For Bidder's Eligibility criteria 4 – the total Project value shall be considered as Capex Cost + Opex Cost (Operation & Maintenance Cost)

OEM experience will not be considered for Bidder's Eligibility Criteria and Technical Evaluation as bidder's experience unless bidder is also an OEM

#	Eligibility Criteria	Documentary Evidence
1	The Prime Bidder/Sole Bidder should be registered under the Companies Act 1956/2013 and subsequent amendments thereto and should be in operation in India for a period of at least 7 years from the date of publishing of this RFP. In case of Consortium, the Consortium Partner should be registered under the Companies Act 1956/2013 and subsequent amendments thereto or a partnership firm registered under LLP Act, 2008	Copy of certification of incorporation issued by competent authority Copy of PAN card Copy of GST registration Certificate
2	The Bidder (Consortium)/Sole Bidder jointly should have minimum average annual turnover of Rs. 100 crores from ICT based business in last three financial years (i.e., FY 2019-20, 2020-21, 2021-22). In case of consortium, each partner should have minimum average annual turnover of Rs. 20 crores from ICT based business in last three financial years (i.e., FY 2019-20, 2020-21, 2021-22). If FY 2021-22 Financial Statements of any	Copy of the audited profit and loss financial statements Certificate from the statutory auditor / CA clearly specifying the annual turnover for the specified years. The Original or Notarized copy of the certificate should be submitted

#	Eligibility Criteria	Documentary Evidence
	bidder is unaudited then the Audited Financial Statements of 2018-19 along with an undertaking letter from the bidder that the 2021-22 Statements are not audited is to be submitted.	
3	The bidder should have a positive net worth, as on 31st March 2022. If 2021-22 Financial Statements of any bidder is unaudited then Bidder should have a positive net worth as on 31st March 2021. Moreover, an undertaking letter from the bidder that the 2021-22 Statements are not audited is to be submitted	Copy of audited profit and loss financial statementCertificate from the statutory auditor / CA clearly specifying the net-worth for the specified years. The Original or Notarized copy of the certificate should be submitted
4	The Sole Bidder/Prime Bidder (In case of Consortium) should have implemented (Installed, commissioned and gone live) project covering at least 2 of the 4 components defined below in the last 7 years from the date of publishing this RFP : • At least one project of minimum value Rs 50 Cr OR • Two Projects of minimum value Rs 37 Cr each OR • Three Projects of minimum values Rs 30 Cr each **Projects Components** 1. Adaptive Traffic Control System (ATCS) 2. Traffic Management System including Red Light Violation Detection System (RLVD) 3. Traffic Management System including Speed Violation Detection System (SVD) 4. General CCTV based City Surveillance (including Video Analytics)	Copy of completion / Go Live certificate issued by client, Copy of Work order clearly highlighting scope of work, Bill of Material and value of contract / order Copy of contract agreement with client Project Citation on bidder's letterhead as per format attached
5	The Sole bidder/ Bidder (In case of consortium as per R&R defined in Consortium Agreement) should have implemented (Installed, commissioned and Gone Live) at least one	Copy of completion / Go Live certificate issued by client, Copy of Work order clearly highlighting scope of work, Bill of

#	Eligibility Criteria	Documentary Evidence
	project having Traffic Law enforcements system like Speed Violation Detection (SVDS) / Red Light Violation Detection (RLVD). This project should have at least 50 cameras having serving as sensors to detect speed violation/red light violation in last 7 years from the date of publishing this RFP along with analytics software.	Material and value of contract / order Copy of contract agreement with client Project Citation on bidder's letterhead as per format attached
6	The Sole bidder/ Bidder (In case of consortium as per R&R defined in Consortium Agreement) should have implemented(Installed, commissioned and gone live) at least one project having 50 Vehicle Actuated (Semi-Actuated or Fully Actuated) Traffic Signals Junctions with centralized software system in last 7 years from the date of publishing this RFP.	Copy of completion / Go Live certificate issued by client, Copy of Work order clearly highlighting scope of work, Bill of Material and value of contract / order Copy of contract agreement with client Project Citation on bidder's letterhead as per format attached
7	The bidder (all member of consortium) should not have been blacklisted or debarred by any Central Government / Any State Government / Smart City SPV / PSU/ Supreme Court of India/Any Government Agency in India as on the date of bid submission.	Self-declaration by the Bidder(All the members of the Consortium individually, in case the Bidder is a consortium) duly signed by the authorized signatory on non-judicial stamp paper of INR 300. Note: Original or Notarized copy of self-declaration should be submitted.
8	The bidder should have an ISO 9001:2008 certification or should be SEI CMMI Level 3 or above certified organization Note: In case of Consortium any member can satisfy this criteria.	Certification with the Sole Bidder or any member of consortium (valid as on date of issuance of this RFP)
9	The bidder should have a local office with Warehouse facility in Surat. Note: • If bidder does not have the local presence, it should open a local office within 30 days from issuance of LOI/Work Order. • In case of Consortium any member can	Supporting Documents like Rent Agreement/ Electricity Bill / Self Declaration on Company's Letter head to be submitted. In case local presence is not available then an Undertaking from authorized signatory to open the local office within 30 days from issuance of LOI/Work Order to be submitted.

#	Eligibility Criteria	Documentary Evidence
	satisfy this criteria.	

7. Instructions to Bidder

Bidders are advised to study all instructions, forms, terms, requirements and other information in the Bid Documents carefully.

Submission of bid shall be deemed to have been done after careful study and examination of the Bid Document with full understanding of its implications.

The response to this Bid Document should be full and complete in all respects. Failure to furnish all information required by the Bid Documents or submission of a proposal not substantially responsive to the Bid Documents in every respect will be at the bidder's risk and may result in rejection of its Proposal.

Additionally, proposals of only those Bidders who satisfy the Conditions of Eligibility, stated herein, will be considered for evaluation by SSCDL.

7.1. Purpose of Bid Document

The purpose of this tender is to select an Implementation Agency for setting up Integrated Traffic Control System (ITCS) across Surat City. This document provides information to enable the bidders to understand the broad requirements to submit their 'Bids'.

The manner in which the Proposal is required to be submitted, evaluated and accepted is explained in this RFP. The detailed scope of work is provided in Volume II of this tender document.

The bidder shall be required to submit their bid in two parts –Technical Bid (Bidder's Eligibility criteria documents, Technical Qualification documents) and Commercial Bid (in line with instructions in Section 7.11).

7.2. Proposal Preparation Cost

1. The bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, Demonstration (POC) (if required by authority), participation in meetings/ discussions/ presentations, preparation of proposal, in providing any additional information required by SSCDL to facilitate the evaluation process, and in negotiating a definitive Contract or all such activities related to the bid process. The department will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
2. This Bid Document does not commit the SSCDL to award a contract or to engage in negotiations. Further, no reimbursable cost may be incurred in anticipation of award. All materials submitted by the Bidder shall become the property of SSCDL/ SMC and may be returned at its sole discretion.

7.3. Online Pre-Bid Queries

A prospective Bidder requiring any clarification on the RFP Document may submit his queries, via email, to the following e-mail id on or before as mentioned in Notice Inviting Tender. Email Id for submission of queries: **brts@suratmunicipal.gov.in**

The queries should necessarily be submitted in the following format:

Bidders 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: Mobile: Fax: Email:
#	**RFP Document Reference (Volume No. , Section No., Page No.)**	**Content of the RFP requiring clarification**	**Clarification Sought**

Queries submitted post the above-mentioned deadline, or which do not adhere to the above-mentioned format may not be considered

7.4. Amendment of RFP Document

At any time before the deadline for submission of bids, the SSCDL, may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the RFP Document by an amendment.

The bidders are advised to visit the, http://suratsmartcity.com/Tenders and https://smc.nprocure.com on regular basis for checking necessary updates. SSCDL also reserves the rights to amend the dates mentioned in this RFP for bid process

In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, the SSCDL may, at its discretion, extend the last date for the receipt of Bids.

7.5. Conflict of Interest

A "Conflict of Interest" is any situation that might cause an impartial observer to reasonably question whether Bidder's actions are influenced by considerations of your firm's interest at the cost of Government. The Bidder agrees that it shall hold the SSCDL's interest paramount, without any consideration for future work, and strictly avoid any Conflict of Interest with other assignments of a similar nature. In the event the Bidder foresees a Conflict of Interest, the System Integrator shall notify SSCDL forthwith and seek its approval prior to entering into any arrangement with a third party which is likely to create a Conflict of Interest.

Bidders shall not have a conflict of interest that may affect the Selection Process or the scope (the "Conflict of Interest"). Any Bidder found to have a Conflict of Interest shall be disqualified.

SSCDL requires that the Bidder provides professional, objective, and impartial advice and at all times hold the SSCDL's interests paramount, avoid conflicts with other assignments or its own interests, and act without any consideration for future work.

The System Integrator shall disclose to SSCDL in writing, all actual and potential Conflicts of Interest that exist, arise or may arise (either for the System Integrator or its team) during the term of the Agreement as soon as it becomes aware of such a conflict.

7.6. Consortium Condition

The number of consortium members cannot exceed two, including the Prime Bidder.

A Bidder applying individually or as consortium member shall not be entitled to submit another application either individually or as a member of any other consortium, as the case may be.

Consortium members must provide a Memorandum of Understanding (MoU) covering above points and showing their intention to enter into such an Agreement at the time of bidding along with Pre-Qualification Bid.

A Bidding Consortium is required to nominate a Prime Member. The formation of the consortium including identification of Prime member and role and responsibilities of each member/s shall be supported by Memorandum of Agreement and Power of Attorney signed by all the members on a stamp paper of INR 300/-.

The successful bidder (SI) shall require to enter into agreement with all members of Consortium Members specifying following points in the Agreement. These points shall also be captured in MoU

Identity Prime Member and Power of Attorney in favor of Prime Member.

Roles and responsibilities of each consortium partner, the identification of the lead partner, and providing for joint and several liability for each partner/s.

All consortium members would be available throughout the Contract Period.

Each member of the Consortium shall be jointly and severally liable for the due implementation, and operation and maintenance of the Project.

The role and responsibility of any member must be commensurate with the technical/financial capabilities that such member is contributing towards meeting the qualification criteria. Each consortium member is liable to contribute resources in terms of knowledge, skills and trained manpower commensurate with its role and responsibilities during the Contract Period.

The Consortium Agreement must also state that the period of the Agreement would coincide with the Contract period. Consortium must continue to be in existence during the period of the contract and that any change will be subject to approval of the Authority (SSCDL) only.

The final contract between the consortium members (The Consortium Contract) would be available for legal vetting and open to suggestions by the SSCDL. SSCDL will suggest binding corrections if it finds that such contract does not meet its requirements and interests as per the Tender in letter and spirit.

The Agreement should be on stamp paper and notarized. The signatories must be duly authorized.

Any modification in roles and responsibilities between consortium members during Contract Period shall be allowed only after approval from SSCDL. Any changes and deviation of roles and responsibilities of consortium members during the execution, operation and maintenance of this Project without prior approval of Authority shall be viewed seriously by the SSCDL as it can affect an important public service. Such unilateral action by the SI shall entitle SSCDL to take appropriate action including considering it an Event of Default under this Contract leading to consequences including termination with appropriate notice.

Any Dispute arising during Contract Period between the Consortium Member/s shall be resolved amicably without adversely impacting Project Implementation and Operation. If in SSCDL's opinion, Dispute between Consortium members adversely impacting implementation and operation of the Project then Authority may its sole discretion in the interest of the Project (a) Terminate the Contract after due process and/or (2) Provide a binding solution.

In case SSCDL Intends to proceed for Termination on account of SI Event of Defect and /or unresolved disputes between the Consortium Members, both the Consortium Members shall be jointly and severally liable for Implementation, Operation and Maintenance of project at Agreed prices and payment terms specified in this Tender till Authority or any new agency appointed by it takes over the Project. SSCDL reserves the right to reject the Bid in case of change in the constitution of the consortium after the submission of Bid and before the execution of the Agreement

7.7. Right to amendment of the project scope

SSCDL retains the right to amend the scope of work or amend the program for service delivery at any time and without assigning any reason. SSCDL makes no commitments, express or implied, that the full scope of work as described in this RFP will be commissioned.

The bidder's technical and commercial proposals received in this process may result in SSCDL selecting to engage with the bidders' in further discussions and negotiations toward execution of a contract including finalization of the scope elements. The commencement of such negotiations does not, however, signify a commitment by the SSCDL to execute a contract or to continue negotiations. SSCDL may terminate negotiations at any time without assigning any reason.

7.8. SSCDLs rights to terminate the selection process

SSCDL may terminate the RFP process at any time and without assigning any reason. SSCDL makes no commitments, express or implied, that this process will result in a business transaction with anyone.

This RFP does not constitute an offer by SSCDL.

The bidder's participation in this process may result in SSCDL selecting the bidder to engage in further discussions and negotiations toward execution of a contract. The commencement of such negotiations does not, however, signify a commitment by the SSCDL to execute a contract or to continue negotiations. SSCDL may terminate negotiations at any time without assigning any reason.

7.9. Right to reject any proposal

Notwithstanding anything contained in this RFP, SSCDL reserves the right to accept or reject any Proposal and to annul the Selection Process and reject all Proposals, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons, therefore.

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

General rejection criteria

i. Conditional Bids;

ii. If the information provided by the Bidder is found to be incorrect / misleading / fraudulent at any stage / time during the Tendering Process;

iii. Any effort on the part of a Bidder to influence the bid evaluation, bid comparison or contract award decisions;

iv. Bids received after the prescribed time & date for receipt of bids;

v. Bids without signature of person (s) duly authorized on required pages of the bid;

vi. Bids without power of attorney/ board resolution or its certified true copy.

Bidder's Eligibility rejection criteria

i. Bidders not complying with the Eligibility Criteria given in this Tender ;

ii. Revelation of prices in any form or by any reason before opening the Commercial Bid;

iii. Failure to furnish all information required by the Tender Document or submission of a Bid not substantially responsive to the Tender Document in every respect;

Technical rejection criteria

i. Technical Bid containing commercial details;

ii. Revelation of Prices in any form or by any reason before opening the Commercial Bid;

iii. Failure to furnish all information required by the Tender Document or submission of a Bid not substantially responsive to the Tender Document in every respect;

iv. Bidders not quoting for the complete scope of work as indicated in the Tender Documents, addendum /corrigendum (if any) and any subsequent information given to the Bidder;

v. Bidders not complying with the Technical and General Terms and conditions as stated in the Tender Documents;

vi. The Bidder not confirming unconditional acceptance of full responsibility of providing services in accordance with the scope of work and Service Level Agreements of this Tender;

Commercial Rejection Criteria

i. Incomplete price Bid;

ii. Price Bids that do not conform to the Tender's price bid format;

iii. Total price quoted by the Bidder does not include all statutory taxes and levies applicable;

iv. If there is an arithmetic discrepancy in the commercial Bid calculations the Technical Committee shall rectify the same. If the Bidder does not accept the correction of the errors, its Bid may be rejected.

Misrepresentation/ improper response by the Bidder may lead to the disqualification. If the Bidder is the Lead Member of a consortium, then the entire consortium may be disqualified / rejected.If such disqualification / rejection occurs after the Proposals have been opened and the highest ranking Bidder gets disqualified / rejected, then SSCDL reserves the right to consider the next best Bidder, or take any other measure as may be deemed fit in the sole discretion of SSCDL, including annulment of the Selection Process.

7.10. Bid Fee and Earnest Money Deposit (EMD) and amount

The bidder should pay non-refundable Bid Fee of Rs.21,240/- (Rs. 18,000 + 18% GST) by Demand Draft or Banker's Cheque in favor of Surat Smart City Development Limited, from Nationalized or Scheduled Banks except Co-operative Banks, payable at Surat. The Bid fees shall be in the form of a Demand Draft / Banker's Cheque.

GST registration number for SURAT SMART CITY DEVELOPMENT LIMITED (SSCDL) is "24AAWCS9229G1ZR"

The bidder should also pay EMD of Rs. 75,00,000 (Rupees Seventy Five lakhs only) whereby 50% amount shall be in the form of Demand Draft/Banker's Cheque in favor of "Surat Smart City Development Limited", from Nationalized or Scheduled Bank and 50 % amount shall be in the form of Bank guarantee (BG) of any nationalized / scheduled banks with validity of 180 days from the date of bid opening. . The details of the SSCDL bank is as below

Name of Beneficiary:	Surat Smart City Development Ltd
Name of Bank:	State Bank of India
Bank address:	Nanpura, Surat Branch
Bank Account No:	35661186460
IFSC CODE:	SBIN0001388
MICR CODE:	395002004
BRANCH CODE:	1388

No interest will be payable by the SSCDL on the Earnest Money Deposit.

In case bid is submitted without EMD or Bid fees as mentioned above then SSCDL reserves the right to reject the bid without providing opportunity for any further correspondence to the bidder concerned.

The EMD of unsuccessful Bidders will be returned by the Authority, without any Interest, as promptly as possible on acceptance of the Proposal of the Selected Bidder or when the Authority cancels the Bidding Process.

The Selected Bidder's EMD will be returned, without any interest, upon the Selected Bidder signing the Agreement and furnishing the Security Deposit / Performance Guarantee in accordance with the provision thereof

The decision of SSCDL regarding forfeiture of the EMD and rejection of bid shall be final & shall not be called upon question under any circumstances.

The EMD may be forfeited:

If a Bidder withdraws their bid or increases their quoted prices during the period of bid validity or its extended period, if any; or

In the case of a successful bidder, if the Bidder fails to sign the Contract or to furnish Performance Bank Guarantee within specified time

During the bid process, if a Bidder indulges in any such deliberate act as would jeopardize or unnecessarily delay the process of bid evaluation and finalization.

During the bid process, if any information found wrong / manipulated / hidden in the bid.

7.11. Sealing, Marking and Submission of Bids

Bidders are required to submit their bids in separate sealed envelopes as per instructions given below:

Part-1 : BID FEES AND EMD

Part 1: **Bid Fees and EMD** with complete details and supporting documents as mentioned in Section 10 in **"Envelop 1"** super scribed with Tender No, Due Date and RFP Name – ***"Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City".***

Part-2: TECHNICAL BID

Part 2: Bidder's Eligibility Criteria, Technical Evaluation Criteria and **Technical proposal soft copy in Pen drive/ USB stick** with complete details as mentioned in Section 11 in **"Envelop 2"** super scribed with Tender No, Due Date and RFP Name – ***"Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City".*** The proposal shall also consist with all supporting documents, RFP Copy, Addendum & Corrigendum, if any.

The large envelope / outer envelope containing above envelopes must be sealed and super scribed and shall be sent as under:

Details to be mentioned exactly on sealed envelop	
Tender Details • RFP No.: • Bid for Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City • Last date of Submission:	To, **The Chief Accountant,** **Surat Municipal Corporation,** Mahanagar Seva Sadan, Gordhandas Chokhawala Marg, Muglisara, Surat – 395 003, Gujarat, INDIA.

The Bid must be sent strictly by **Postal Speed Post or Registered Post AD only** so as to reach on or before as per notice inviting page. Bids received in any other manner or mode (like courier, in person, etc.) will not be considered. SSCDL won't be responsible for postal delays.

SSCDL will not accept submission of a proposal in any manner other than that specified in the document. Proposals submitted in any other manner shall be treated as defective, invalid and rejected.

If the envelopes are not sealed and marked as instructed above, the SSCDL assumes no responsibility for the misplacement or premature opening of the contents of the application and consequent losses, if any suffered by the Bidder.

Each Bidder shall submit only one proposal containing documents as below. A bidder who submits more than one proposal under this contract will be disqualified

- Original copy of the Bid fee & EMD
- Bidder's Eligibility criteria related documents
- Technical Eligibility criteria, Technical Proposal related documents including and Technical Compliance
- RFP Copy and Addenda & Corrigendum
- The Bidder shall prepare original set of the Application (together with originals /copies of documents required to be submitted along therewith pursuant to this document) and applicant shall also provide a soft copy on a Pen Drive / USB stick. In the event of any discrepancy between the original and Pen Drive/USB stick, the original shall prevail
- **Each page of the above should bear the initials of the Applicant along with the seal of the Applicant in token of confirmation of having understood the contents. In case of consortium the bid will be signed by the Prime Bidder.**

Bidder's Eligibility criteria documents and technical proposal should be signed by an authorized person of the bidder. The Technical proposal should be submitted along with a certified true copy of a board resolution/power of attorney empowering authorized signatory to sign/act/execute documents binding the bidder to the terms and conditions detailed in this proposal. In case of the Consortium the Prime bidder will submit this document.

Proposals must be direct, concise, and complete. SSCDL will evaluate bidder's proposal based on its clarity and completeness of its response to the requirements of the project as outlined in this RFP. The Chairman, SSCDL or Municipal Commissioner, SMC reserves the right to accept or reject any or all the proposals without assigning any reason.

PART 3 : Online PRICE BID

The price bid must be submitted online on https://smc.nprocure.com. It should not be sent physically, if submitted physically the bid shall be rejected. Please refer Section 12 for format and instructions.

Bidders are required to submit the online price bid well in advance on (n)procure website. And representation from the bidder of non-submission of bid due to the (n)procure portal issue will not be entertained. In case bidder needs any clarification or if training required for participating in online tender, they can contact the following office: -

(n) Code solutions – A division GNFC Ltd.
403, GNFC Infotower, Bodakdev, Ahmedabad – 380 054, Gujarat (India)
Tel: +91 26857316/17/18 Fax: + 91 79 26857321
E-mail: nprocure@gnvfc.net Website: www.nprocure.com
Toll Free: 1800-233-1010 (Ext. 501 & 512)
For further particulars contact above office/ or visit on following websites:
www.nprocure.com ,
www.smc.nprocure.com

7.12. Language of Bids

The Bids prepared by the Bidder and all correspondence and documents relating to the bids exchanged by the Bidder and SMC, shall be written in English language, provided that any printed literature furnished by the Bidder in another language shall be accompanied by an English translation in which case, for purposes of interpretation of the bid, the English translation shall govern.

If any supporting documents submitted are in any language other than English, Notarized copy of the translation of the same in English language shall be submitted by the bidder.

7.13. Concessions permissible under statutes

Bidder, while quoting against this tender, must take cognizance of all concessions permissible, if any, under the statutes and ensure the same is passed on to SSCDL, failing which it will have to bear extra cost. In case Bidder does not avail concessional rates of levies like customs duty, excise duty, sales tax, etc. SSCDL will not take responsibility towards this. However, SSCDL may provide necessary assistance, wherever possible, in this regard.

7.14. Bid Validity

The proposal should be valid for acceptance for a minimum period of 180 days from the Bid Opening Date (the "Proposal Validity Period"). If required, Authority may request the bidder to have it extended for a further period. The request and the responses thereto shall be made in writing. A Bidder agreeing to the request will not be required or permitted to modify his Proposal but will be required to extend the validity of EMD for the period of the extension, and in compliance with Clause 7.10 in all respects

7.15. Taxes

The Prices mentioned in the Price Bid should include all applicable taxes & duties as applicable. The L1 evaluation will be done exclusive of taxes only. If any duties are applicable to the product the same will be considered for L1 evaluation. The bidder to quote the duties along with the rate of products proposed for L1 evaluation.

However, the bidder is expected to provide the tax components in commercials. The payment of taxes to the selected bidder will be done on actuals. In this regard, selected bidder is required to submit documents describing the total tax paid for Surat ITCS Project (for each component). The payment for tax component will be made in the subsequent billing cycle.

Further, SSCDL shall be entitled to deduct tax at source or any other taxes/ cess as may be applicable.

GST

GST (Goods & Service Tax) has come in existence from 1st July, 2017. Contractor/Successful Bidder is bound to pay any amount GST prescribed by the Govt. of India as per the terms of Contract agreed upon during the course of execution of this Contract.

During the course of execution of Contract, if there is any change in Rate of GST (Goods & Service Tax) by the Government, the same shall be reimbursed/recovered separately by SSCDL, subject to the submission of Original Receipt/Proof for the amounts actually remitted by the Successful Tendered/Contractor to the Competent Authority along with a Certificate from

Chartered Accountant of Contractor/Successful bidder certifying that the amount of GST paid to the Government and the same shall be intimated/submitted/claimed within 30 (Thirty) Days from the date of payment. Remittance of GST within stipulated period shall be the sole responsibility of the Successful bidder/contractor, failing which, SSCDL may recover the amount due, from any other payable dues with SSCDL and decision of SSCDL shall be final and binding on the Contractor/Successful Bidder in this regard. Further the non- payment of GST to the Government may lead to the termination of contract and forfeiture of Security Deposit/Performance Guarantee Amount.

If imposition of any other new Taxes/Duties/Levies/Cess or any other incidentals etc. or any increase in the existing Taxes/Duties/Levies/Cess or any other incidentals etc. (excluding GST) are imposed during the course of the contract, the same shall be borne by the Contractor/Successful Bidder Only, in no case SSCDL shall be liable for the same.

7.16. Firm Prices and Bid Currency

Prices quoted must be firm and final and shall not be subject to any upward modifications, on any account whatsoever. Prices shall be expressed in Indian Rupees (INR) only.

7.17. Right to vary the scope of the work at the time of award

SSCDL reserves its right to make changes to the scope of the work at the time of execution of the resultant Agreement. If any such change causes an increase or decrease in the cost of, or the time required for the SI's performance of any part of the work under the Agreement, whether changed or not changed by the order, an equitable adjustment (if required) shall be made in the Contract Value or time schedule, or both, and the Agreement shall accordingly be amended. Any claims by the SI for adjustment under this Clause must be asserted within thirty (30) days from the date of the SI's receipt of the SSCDL changed order.

7.18. Modification or Withdrawal of Bids

No bid may be withdrawn in the interval between the bid submission deadline and the expiration of the specified bid validity period. Withdrawal of a bid during this interval may result in the forfeiture of the Bidder's EMD.

7.19. Evaluation Process

A two-stage selection procedure will be adopted: Stage-1: Technical Bid (Bidder's Eligibility Criteria + Technical Compliance) and Stage-2: Commercial bid.

In the first stage SSCDL/SMC shall examine the statement of eligibility, experience, technical capabilities etc. furnished by the Bidder and select the bidders who satisfy the technical evaluation criteria

In the second stage, subsequent to technical evaluation stage, commercial bids of only shortlisted Bidders will be opened. It should be noted the bids shall be evaluated on the basis of price. However, if required SSCDL/SMC as per its own discretion may also consider other factors like technology, innovative solution, etc.

The Bidder must possess the technical know-how and the financial wherewithal that would be required to successfully provide the services sought by SSCDL, for the entire period of the contract. 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.

SSCDL will appoint a Bidder's Evaluation Committee (BEC) to scrutinize and evaluate the Bidder's Eligibility of bidders, technical and commercial bids received. The BEC will examine the Bids to determine whether they are complete, response and whether the Bid format confirms to the Bid Document requirements. SSCDL may waive any informality or nonconformity in a Bid which does not constitute a material deviation according to SSCDL.

There should be no mention of bid prices in any part of the Bid other than the Commercial Bids.

7.20. Opening of Technical Bid

SSCDL shall open the Technical Bid in public, in the presence of Bidders' designated representatives and anyone who chooses to attend. The bidders shall be intimated the venue, date and time for bid opening

The Technical Bids of Bidders shall be considered and will be evaluated as per the eligibility criteria mentioned in section 6 & 7.22

Only bids that are opened and read out at the proposal opening and are accompanied with Original Copy of Bid Processing Fee and EMD shall be considered further.

7.21. Evaluation of Technical Bid

The Bidder must meet the eligibility / technical criteria laid in this RFP and possess the technical know-how and the financial wherewithal that would be required to successfully provide the services sought by SSCDL, for the entire period of the contract. 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.

The bidder must make sure to provide all the relevant documents to support the claim made with regards to various evaluation criteria like turnover, net worth, projects executed, etc. SSCDL will examine the Bids to determine whether they are complete, response and whether the Bid format confirms to the Bid Document requirements. SSCDL may waive any informality or nonconformity in a Bid which does not constitute a material deviation according to SSCDL.

There should be no mention of bid prices in any part of the Bid other than the Commercial Bids.

SMC/SSCDL may require written clarifications from the Bidders to clarify ambiguities and uncertainties arising out of the evaluation of the Bid.

The Bid Evaluation Committee may invite each Bidder to make a presentation as part of the technical evaluation.

Only those Bids which have a minimum score of 70% of total marks in technical evaluation will be considered for opening of their Commercial Bid. However, Commissioner, SMC or Chairman, SSCDL reserves the right to lower the minimum required marks to 65% of total marks if no Bidder achieves 70% of the total marks. Only the Bids qualifying the technical evaluation will be considered for commercial evaluation.

7.22. Technical Evaluation Criteria

The bidder's technical solution proposed in the technical evaluation bid shall be evaluated as per the evaluation criteria in the following table.

Section	Evaluation Criteria	Marks
A	Bidders Financial Competence & Organizational Strength	35
B	Project Experience of Bidder	65
Total		**100**

#	Technical Evaluation Criteria	Technical Evaluation parameter	Maximum Marks
A. Bidder's Financial Competence & Organizational Strength			**35**
1	Bidder's Competence – Turnover	The Bidder (Consortium)/Sole Bidder jointly should have minimum average annual turnover of Rs. 100 crores from ICT based business in last three financial years (i.e., FY 2019-20, 2020-21, 2021-22). In case of consortium, each partner should have minimum average annual turnover of Rs. 20 crores from ICT based business in last three financial years (i.e., FY 2019-20, 2020-21, 2021-22).	***25***

Average Turnover (In crores)	Marks [Maximum: 25]
>= INR 100 Cr. and < INR 120 Cr.	17
>= INR 120 Cr. and < INR 140 Cr.	19
>= INR 140 Cr and < INR 160 Cr.	21
>= INR 160 Cr and < INR 180 Cr.	23
>= INR 180 Cr.	25

Supporting Document

Copy of the audited profit and loss financial statements

Certificate from the statutory auditor / CA clearly specifying the annual turnover for the specified years. Original or Notarized copy of the certificate should be submitted

If FY 2021-22 Financial Statements of any bidder is unaudited then the Audited Financial Statements

<table>
<tr><th>#</th><th>Technical Evaluation Criteria</th><th>Technical Evaluation parameter</th><th>Maximum Marks</th></tr>
<tr><td></td><td></td><td>of 2018-19 along with an undertaking letter from the bidder that the 2021-22 Statements are not audited is to be submitted.</td><td></td></tr>
<tr><td>2</td><td>Manpower</td><td>The prime bidder having at least 100 Full time Employees (FTE) on payroll of organization working on ICT domain and/or any of the SMART city component covered in the pre-qualification criteria as on date of release of RFP.
<table><tr><th>No. of Manpower</th><th>Marks [Maximum: 10]</th></tr><tr><td>>= 100 FTE and <150 FTE</td><td>7</td></tr><tr><td>>= 150 FTE and <200 FTE</td><td>8</td></tr><tr><td>>= 200 FTE and <250 FTE</td><td>9</td></tr><tr><td>>= 250 FTE</td><td>10</td></tr></table>
Supporting Document
Certificate form the head of Human Resource or equivalent on bidding entity's letterhead
SSDCL reserves the right to verify the certification submitted by the bidder for consideration for evaluation.
Note: Full time Employees defined as employees on the Payroll of organization.</td><td>10</td></tr>
<tr><td colspan="3">B. Project Experience of Bidder</td><td>65</td></tr>
<tr><td>4</td><td>Bidder Experience – Large ICT Project</td><td>The Sole Bidder/Prime Bidder (In case of Consortium) should have implemented (Installed, commissioned and gone live) project covering at least 2 of the 4 components defined below in the last 7 years from the date of publishing this RFP :
• At least one project of minimum value Rs 50 Cr
OR
• Two Projects of minimum value Rs 37 Cr each
OR
• Three Projects of minimum values Rs 30 Cr each
Projects Components
1. Adaptive Traffic Control System (ATCS)
2. Traffic Management System including Red</td><td>25</td></tr>
</table>

<table>
<tr><th>#</th><th>Technical Evaluation Criteria</th><th>Technical Evaluation parameter</th><th>Maximum Marks</th></tr>
<tr><td></td><td></td><td>Light Violation Detection System (RLVD)
3. Traffic Management System including Speed Violation Detection System (SVD)
4. General CCTV based City Surveillance (including Video Analytics)

<table>
<tr><th>Number of Projects</th><th>Marks [Maximum: 25]</th></tr>
<tr><td>For satisfying Eligibility criteria</td><td>18</td></tr>
<tr><td colspan="2">Additional project over and above the projects submitted under Eligibility criteria</td></tr>
<tr><td>Eligibility Criteria Project/s + Every Additional Project of Minimum 50 Cr</td><td>7</td></tr>
<tr><td>Eligibility Criteria Project/s + Every Additional Project of Minimum 37 Cr</td><td>5</td></tr>
<tr><td>Eligibility Criteria Project/s + Every Additional Project of Minimum 30 Cr</td><td>2</td></tr>
</table>

Supporting Document

Copy of completion / Go Live certificate issued by client,

Copy of Work order clearly highlighting scope of work, Bill of Material and value of contract / order

Copy of contract agreement with client

Project Citation on bidder's letterhead as per format attached</td><td></td></tr>
<tr><td>5</td><td>Bidder's Experience – Traffic Law Enforcement</td><td>The Sole bidder/ Bidder (In case of consortium as per R&R defined in Consortium Agreement) should have implemented (Installed, commissioned and Gone Live) at least one project having Traffic Law enforcements system like Speed Violation Detection (SVDS) / Red Light Violation Detection (RLVD). This project should have at least 50 cameras having serving as sensors to detect speed violation/red light violation in last 7 years from the date of publishing this RFP along with analytics</td><td>20</td></tr>
</table>

<table>
<tr><th>#</th><th>Technical Evaluation Criteria</th><th>Technical Evaluation parameter</th><th>Maximum Marks</th></tr>
<tr><td></td><td></td><td>software.
<table><tr><th>Number of Projects</th><th>Marks [Maximum: 20]</th></tr><tr><td>For satisfying Eligibility criteria</td><td>14</td></tr><tr><td colspan="2">Additional project over and above the projects submitted under Eligibility criteria</td></tr><tr><td>Additional similar Projects meeting above mentioned criteria</td><td>3</td></tr></table>
Supporting Document
Copy of completion / Go Live certificate issued by client,
Copy of Work order clearly highlighting scope of work, Bill of Material and value of contract / order
Copy of contract agreement with client
Project Citation on bidder’s letterhead as per format attached</td><td></td></tr>
<tr><td>6</td><td>Bidder’s Experience – Traffic Signaling Project</td><td>The Sole bidder/ Bidder (In case of consortium as per R&R defined in Consortium Agreement) should have implemented(Installed, commissioned and gone live) at least one project having 50 Vehicle Actuated (Semi-Actuated or Fully Actuated) Traffic Signals Junctions with centralized software system in last 7 years from the date of publishing this RFP.
<table><tr><th>Number of Projects</th><th>Marks [Maximum: 20]</th></tr><tr><td>For satisfying Eligibility criteria</td><td>14</td></tr><tr><td colspan="2">Additional project over and above the projects submitted under Eligibility criteria</td></tr><tr><td>Additional similar Projects meeting above mentioned criteria</td><td>3</td></tr></table></td><td>20</td></tr>
</table>

#	Technical Evaluation Criteria	Technical Evaluation parameter	Maximum Marks
		Supporting Document Copy of completion / Go Live certificate issued by client, Copy of Work order clearly highlighting scope of work, Bill of Material and value of contract / order Copy of contract agreement with client Project Citation on bidder's letterhead as per format attached	

Note:

- Documentary evidence as below shall be required for evaluation
- Copy of completion certificate issued by client
- Work order / Contract
- For evaluation following definition is considered
- The completion / implemented project is defined as those projects that have been install, commissioned and gone live in last 7 years from the date of publishing of this RFP.
- For Technical Evaluation Criteria – the total Project value shall be considered as Capex Cost + Opex Cost
- For qualifying experience or credentials projects where the bidder or consortium member has executed the project as a sub-contractor will not be considered for evaluation purposes
- OEM experience will not be considered for Technical Evaluation criteria as bidder's experience unless bidder is also an OEM.

7.23. Opening of Commercial Bid

1. The Commercial bids shall not be opened by SSCDL until the evaluation of the Technical Proposals has been completed.
2. SSCDL will open the Commercial Bids of those Bidders who have achieved **minimum score of 70% of total marks in technical evaluation.** However, Commissioner, SMC or Chairman, SSCDL reserves the right to lower the minimum required marks to 65% of total marks if no Bidders achieves 70% of the total marks. Only the Bids qualifying the technical evaluation will be considered for commercial evaluation.
3. SSCDL will open the Commercial Bids in the presence of the nodal officer / designated representatives of the Bidder who choose to attend, at the time, date and place, as decided and communicated by SSCDL.

4. Commercial Bids from bidders who have failed to qualify in evaluation of the technical proposal will not be opened. Only bids that are opened and read out at the proposal opening shall be considered further.

7.24. Evaluation of Commercial Bids and Selection Method

SSCDL will award the Contract to the Bidder based on **Least Cost Selection (LCS / L1)** method**.** No additional cost in any form will be entertained by SSCDL during the contract period. The L1 evaluation will be done exclusive of taxes. However, the bidder is expected to provide the tax components in commercials. The payment of taxes to the selected bidder will be done on actuals/prevailing rates. The L1 evaluation will be done exclusive of taxes only. If any duties are applicable to the product the same will be considered for L1 evaluation. The bidder to quote the duties along with the rate of products proposed for L1 evaluation.

Further, SSCDL shall be entitled to deduct tax at source or any other taxes/ cess as may be applicable.

Commercial bid should be exclusive of ROW and / RI Cost. The RI cost incurred shall be reimbursed in next billing cycle by SSCDL/SMC on submission and verification of bill submitted by SI

The CAPEX quoted should not be more than 70% of overall value of the price bid.

Total Estimated Commercial Bid of a bidder would be calculated based on quantities given in Section 12. The quantities in this table are estimated quantity, and the actual quantity will be determined at the time of project execution based on the feasibility report and actual requirement considering the site situation.

The Commercial Bids of only the technically qualified bidders will be opened for evaluation.

The bidder achieving the L1 price will be invited for negotiations for awarding the contract. In case of a tie where two or more bidders achieve the same price, the bidder with the higher technical score will be invited for negotiations and awarding the contract. In case of a tie on the technical scores and L1 price, the bidder with higher turnover will be invited for negotiations and awarding of the contract.

Arithmetical errors: If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the Bidder does not accept the correction of the errors, its bid will be rejected. If there is a discrepancy between words and figures, the amount in words will prevail

7.25. Other General Criteria

1. The bidder will be required to submit a manufacturer's authorization form from all the OEMs stating that the bidder in concern would be bidding for their products/solutions.
2. Bidders are required to specify only one make and model of each item and provide the details in the Technical bid. In any case multiple make and model for single item/component is not allowed.
3. Bidder to ensure that the proposed OEM(s) are based on criteria mentioned in section 11.8

4. Firms with common Proprietor/partner or connected with one another either financially or as principal and agent or as master and servant or with proprietor/partners closely related to each other such as husband, wife, father/mother and minor son/daughter and brother/sister and minor brother/sister, shall not bid separately under different names for the same contract. An independence form in the same regard must be submitted by the bidder.
5. If it is found that the same firm has submitted multiple bids under different names for the proposed contract, all such tender(s) shall stand rejected and bid deposit of each such firm/establishment shall be forfeited. In addition, such firms/establishments shall be liable, at the discretion of the Chief Executive Officer/ Municipal Commissioner, for further penal action including blacklisting.
6. If it is found that close relatives (as described above) have uploaded separate tenders/ quotations under different names of firms/ establishments but with common address for such establishments/firms and/or if such establishments/ firms, though they have different addresses, are managed or governed by the same person/persons jointly or severally, such tenders shall be liable for further penal action including blacklisting.
7. If after awarding the contract it is found that the accepted bid violated any of the directions pertaining to participation as stated above, the contract shall be liable for cancellation at any time during its validity in addition to penal action against the contractors as well as related firm/establishment.

7.26. Rights to Accept/Reject any or all Proposals

SSCDL reserves the right to accept or reject any proposal, and to annul the bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected bidder or bidders of the grounds for SSCDL's action.

7.27. Notifications of Award and Signing of Contract

Prior to the expiration of the period of proposal validity, the bidder will be notified in writing or by fax or email that its proposal has been accepted.

SSCDL shall facilitate signing of the contract within the period of 30 days of the notification of award. However, it is to be noted that the date of commencement of the project and all contractual obligations shall commence from the date of issuance of Purchase Order/Letter of Intent (LOI), whichever is earlier. All reference timelines as regards the execution of the project and the payments to the System Integrator shall be considered as beginning from the date of issuance of the Purchase Order/Letter of Acceptance, whichever is earlier.

The notification of award (LoI/Purchase Order) will constitute the formation of the Contract. Upon the Bidder's executing the contract with SSCDL, it will promptly notify each unsuccessful bidder and return their EMDs.

At the time SSCDL notifies the successful Bidder that its bid has been accepted, SSCDL will send the Bidders the Pro forma for Contract, incorporating all clauses/agreements between the parties. Within 15 days of receipt of the Contract, the successful Bidder shall sign and date the Contract and return it to SSCDL. Draft Format of the contract is given in the Annexure, Section 13.4

7.28. Quantity Variation

The quantity defined in the RFP are estimated and actual quantity will be executed based on the actual site survey by the selected bidder at the time of project implementation. The quoted rate will remain firm and same for such variation in quantity.

The variation in individual item of quantities permitted, provided it shall not exceed ± 30% in individual item of quantities except for cables, ducting, trenching and HDPE / DWC pipes, etc. which will be considered on actuals running meters (Rmtrs.). The successful bidder shall not object to the upward or downward variation in quantities (including locations) of any item within the variation limits.

Payment for additional quantities within the variation limit shall be made at tender rates and the tender rates shall be valid for entire duration of the contract. The payment for cables, ducting, trenching and HDPE / DWC pipes, etc. will be made on actual quantity (in running meters) and payment will be made at tender rates for entire duration of contract.

The payment will be made as per actual executed quantity as per tender rates for entire duration of contract.

No claim shall be entertained or become payable for price variation of additional quantities.

Quantities mentioned in the commercial formats are indicative in number. SMC/SSCDL at its discretion may or may not procure the listed components in mentioned quantities at the time of placing order / agreement. SSCDL has the rights to delete any of the component before final implementation. The successful bidder shall not object to the upward or downward variation in quantities of any item.

7.29. Performance Bank Guarantee

The successful bidder shall at his own expense, deposit with department, within 10 days of the notification of award (done through issuance of the Purchase Order/Letter of Acceptance), an unconditional and irrevocable Performance Bank Guarantee (PBG) from a list of approved banks as per the format given in this Bid Document, in favor of Surat Smart City Development Ltd for the due performance and fulfilment of the contract by the bidder. Failing which a penalty @ 0.065% of the amount of PBG will be imposed for delay of each day.

This Performance Bank Guarantee will be for an amount equivalent to 3% of contract value. All charges whatsoever such as premium, commission, etc. with respect to the Performance Bank Guarantee shall be borne by the bidder.

The successful bidder shall maintain a valid and binding Performance Guarantee for a period of six months after the expiry of the Contract Period ("Validity Period"). In case if Performance Bank Guarantee expired before the above-mentioned validity period. SI has to renew Performance Bank Guarantee before 30 days from the expiry date of the same. Failing which a penalty @ 0.065% of the amount of PBG will be imposed for delay of each day.

The Performance Bank Guarantee letter format can be found in the Annexure- section 13.1 of this document.

The Performance Bank Guarantee may be discharged/ returned by department upon being satisfied that there has been due performance of the obligations of the Bidder under the contract. However, no interest shall be payable on the Performance Bank Guarantee.

If the Bidder, fails to furnish the Performance Guarantee, it shall be lawful for the Authority to forfeit the EMD and cancel the contract or any part thereof

In the event of the Bidder being unable to service the contract for whatever reason, department would evoke the PBG. Notwithstanding and without prejudice to any rights whatsoever of department under the Contract in the matter, the proceeds of the PBG shall be payable to department as compensation for any loss resulting from the Bidder's failure to complete its obligations under the Contract. Department shall notify the Bidder in writing of the exercise of its right to receive such compensation within 14 days, indicating the contractual obligation(s) for which the Bidder is in default.

Department shall also be entitled to make recoveries from the Bidder's bills, performance bank guarantee, or from any other amount due to him, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.

Under this contract, wherever the contractor is required to submit F.D.R., bank guarantee, etc. against payment towards any deposit or advance e.g., EMD, SD, etc. Such F.D.R, bank guarantees, etc. shall be produced from any one of the approved bank as defined in Annexure Section 13.3. During the contract period if the bank from which the PBG is submitted is removed from the list of approved bank, the selected bidder shall be required to replace the PBG and submit the PBG from the approved bank. The notification in this regard will be given to the selected bidder by SMC/SSCDL and the same must be complied within 21 days of such notification

7.30. Governing Law

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

7.31. Failure to agree with the Terms & Conditions of the Bid Document/ Contract

Failure of the bidder to agree with the Terms & Conditions of the Bid Document/Contract shall constitute sufficient grounds for the annulment of the award of contract, in which event the contract may be awarded to the next most responsive bidder.

7.32. Terms and Conditions of the Tender

Bidder is required to refer to the draft Contract Agreement, attached as Annexure, section 13.4 in this Bid Document, for all the terms and conditions (including project timelines) to be adhered by the successful bidder during Project Implementation and Post implementation period.

The extension can be decided in future depending on the satisfactory performance of the bidder by competent authority, future IT Infrastructure expansion needs and sole discretion of SSCDL/SMC.

Please note that one needs to read the Contract Agreement as a whole document; and the Annexure mentioned there-in may not correspond to the Bid Document Annexure. Please refer to the Interpretation Section 13.4 of the Draft/Master Service Agreement.

7.33. Restriction on Transfer of Agreement

The System Integrator shall not assign or transfer its right in any manner whatsoever under this agreement to a third party or enter into any agreement for sub-contracting and/or partnership relating to any subject matter to the agreement to any third party or any sister-concerned firm within a group either in whole or in any part i.e., partnership/third party interest shall be created.

7.34. Safety Regulation, Accident and Damage

The Bidder shall be responsible at his own cost in and relative to performance of the work and bidder to observe and to ensure observance by his Sub-contractors, agents and servants of the provisions of Safety Code as hereinafter appearing and all fire, Safety and security regulations as may be prescribed by the Owner from time to time and such other Precautions, measures as shall be necessary and shall employ / deploy all equipment necessary to protect all works, materials, properties, structures, equipment, installations, communications and facilities whatsoever from damage, loss or other hazard whatsoever (including but not limited to fire and explosion) and shall during construction and other operations minimize the disturbance and inconvenience to the Owner, other bidders, the public and adjoining land and property owners and occupiers, and crops, trees and vegetation and shall indemnify and keep indemnified the One from and against all losses and damages and costs, charges and expenses and penalties, actions, claims, demands and proceedings whatsoever suffered or incurred by or against the Owner, as the case may be, virtue of any loss, alteration, displacement, disturbance or destruction or accident to any works materials, properties, structures, equipment, installations communications and facilities and land and property owners and occupiers and crops, trees and vegetation as aforesaid, with the intent that the Bidder shall be exclusively responsible for any accident, loss, damage, alteration, displacement, disturbance or destruction as aforesaid resultant directly or indirectly from any breach by the Bidder of his obligation aforesaid or upon any operation, act or omission of the bidder his Sub-contractor(s) or agent(s) or servant(s).

The Bidder's liabilities under Clause (a) and otherwise under the Contract shall remain unimpaired notwithstanding the existence of any storage cum erection or other insurance covering any risk, damage, loss or liability for which the Bidder is liable to the Owner in terms of the foregoing Sub-Clause or otherwise and / or in respect of which the Bidder has indemnified the Owner with the intent that notwithstanding the existence of such insurance, the Bidder shall be and remain fully liable for all liabilities and obligations under the contract and indemnified to the Owner, and the Owner shall not be obliged to seek recourse under such policy(ies) in preference to recourse against the Bidder or otherwise to exhaust any other remedy in preference to the remedies available to in under the Contract prior written approval of SSCDL. However, even if the work is sub-contracted / outsourced, the sole responsibility of the work shall lie with the SI. The SI shall be held responsible for any delay/error/non-compliance etc. of its sub-contracted vendor. The details of the sub-contracting agreements (if any) between both the parties would be required to be submitted to SSCDL

7.35. Ownership and Licenses

The ownership of all hardware/software developed/customized/ configured/ procured as part of the project and related documentation for the project would always lie with the SMC/SSCDL. All licenses for software procured related to project have to be in the name of Surat Municipal

Corporation. The bidder will be required to produce the Licenses/ATS/Warranty and other documents from the respective OEMs clearly mentioning the product name, quantity, duration, type of support, etc. The payment for the respective item will be subject to submission of the aforesaid documents to SMC/SSCDL.

7.36. General Clause related to Any Bidders/Sub-Contractor from a Country which shares a Land Border with India

I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority (Registration committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT)).

II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

III. "Bidder from a country which shares a land border with India" means:

a. An entity incorporated, established or registered in such a country; or

b. A subsidiary of an entity incorporated, established or registered in such a country; or

c. An entity substantially controlled through entities incorporated, established or registered in such a country; or

d. An entity whose beneficial owner is situated in such a country; or

e. An Indian (or other) agent of such an entity; or

f. A natural person who is a citizen of such a country; or

g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

IV. The beneficial owner for the purpose of (iii) above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

a. Explanation—

b. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;

c. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
4. Where no natural person is identified under i or ii or iii above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

VI. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority (Registration committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT)).

8. Service Level Agreements

Service Level Agreement (SLA) shall become the part of Agreement between SSCDL and the Successful Bidder. SLA defines the terms of the Successful Bidder's responsibility in ensuring the timely delivery of the deliverables and the correctness of the same based on the agreed Performance Indicators as detailed in this section. The Successful Bidder has to comply with Service Levels requirements to ensure adherence to Project timelines, quality and availability of services.

The Successful Bidder (refer as System Integrator, SI) has to supply software/automated tools to monitor all the SLAs mentioned below.

Note: Penalties shall not be levied on the Successful Bidder in the following cases:

There is a Force Majeure event effecting the SLA which is beyond the control of the Successful Bidder

The non-compliance to the SLA has been due to reasons beyond the control of the Bidder.

Theft cases by default would not be considered as "beyond the control of Bidder". However, certain cases, based on circumstances & certain locations, SSCDL may agree to qualify as "beyond the control of Bidder". Damages due to any accident / mishap shall be considered as "beyond the control of Bidder". However, Power shut down or deliberate damage to field devices such as Cameras, Audio Systems etc. would not be considered as "beyond the control of Bidder".

The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service which shall be provided by the System Integrator to SSCDL for the duration of this Agreement.

8.1. Definitions

For the purposes of this service level agreement, the definitions and terms are specified in the contract along with the following terms shall have the meanings set forth below:

"Uptime" shall mean the time period for the specified services / components with the specified technical service standards are available to the user department. Uptime, in percentage, of any component (Non-IT & IT) can be calculated as:

Uptime = {1- [(Downtime) / (Total Time – Maintenance Time)]} * 100

"Downtime" shall mean the time period for which the specified services / components with specified technical and service standards are not available to the user department and excludes downtime owing to Force Majeure & Reasons beyond control of SI.

"Incident" refers to any event / abnormalities in the functioning of the Services specified as part of the Scope of Work of the Systems Integrator that may lead to disruption in normal operations of the Surveillance System.

"Resolution Time" shall mean the time taken (after the incident has been reported at the helpdesk), in resolving (diagnosing, troubleshooting and fixing) or escalating (to the second level or to respective vendors, getting the confirmatory details about the same from the vendor and conveying the same to the end user), the services related troubles during the first level escalation.

"Schedule Downtime" shall means 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 post written approval of the authority.

8.2. Measurement of SLA

The SLA metrics provided specifies performance parameters as baseline performance, lower performance and breach. All SLA calculations will be done on quarterly basis.

The SLA also specifies the liquidated damages for lower performance and breach conditions.

Payment to the SI is linked to the compliance with the SLA metrics.

The matrix specifies three levels of performance, namely, baseline performance, lower performance and breach.

The SI will get 100% of the Contracted value if all the baseline performance metrics are compiled and the cumulative credit points are 100.

The SI will get lesser payment in case of the lower performance. (For e.g., if SLA point score is 80 then the SI will get 20% less on the quarterly payment – The formula calculating the deductions is "(100 – SLA Point Score)%")

If the performance of the Agency in respect of any parameter falls below the prescribed lower performance limit, debit points are imposed for the breach.

The credit (+) points earned during the quarter will be considered for computing penalty. The quarterly payment shall be made after deducting the liquidated damages as mentioned above.

The aforementioned SLA parameters shall be measured as per the individual SLA parameter requirements and measurement methods, through appropriate SLA Measurement tools to be provided by the SI and audited by SSCDL or its appointed Consultant for accuracy and reliability.

SSCDL shall also have the right to conduct, either itself or through any other agency as it may deem fit, an audit / revision of the SLA parameters. The SLAs defined, shall be reviewed by SSCDL on an annual basis after consulting the SI, Project Management Consultants and other experts. All the changes would be made by SSCDL after consultation with the SI and might include some corrections to reduce undue relaxation in Service levels or some corrections to avoid unrealistic imposition of liquidated damages, which are noticed after project has gone live.

Total liquidated damages to be levied on the SI shall be capped at 10% of the total contract value. However, SSCDL would have right to invoke termination of the contract in case the overall liquidated damages equal 10% of total contract value. Liquidated damages to be levied during Post Implementation period shall be capped at 10% of the OPEX value. SSCDL would also have right to invoke termination of contract in case cumulative debit point (breach points) are above 30 in 2 consecutive quarters.

If in case during the O&M phase of the project, some of the sub-component's data is unavailable / sub system is inactive, the calculation of the SLA shall be carried out on a pro-rata basis for all the available sub-systems.

8.3. Pre-Implementation SLA

Timely delivery of the Scope of Work

Definition	Timely delivery of deliverables would comprise entire bill of material and the application systems, and as per successful UAT of the same.
Service Level Requirement	All the deliverables defined in the contract has to be submitted On-time on the date as mentioned in the contract with no delay.
Measurement of Service Level Parameter	To be measured in Number of weeks of delay from the timelines mentioned in the section 9
Penalty for non-achievement of SLA Requirement	Any delay in the delivery of the project (solely attributable to vendor) would attract a penalty of 0.2% per day of the CAPEX value of that particular item. Total penalty applicable under this clause shall be limited to 10% of the value of the equipment/device in software or hardware to be supplied, installed and commissioned for which Work Order/Request Order is placed If the penalty reaches 10% of the total contract value, Authority may invoke termination clause.

8.4. Post Implementation SLA Matrix

#	Performance Area	Baseline		Lower Performance	Breach		
		Metric	Points	Metric	Points	Metric	Points
Field devices- Traffic Surveillance Cameras, ANPR system, RLVD system, Traffic Sensors, Aspects, Controller, Speed Detection system							
1	Uptime per Traffic Surveillance Cameras (live feed available irrespective of network/power/etc. issues)	98%	5	>= 96% to <98%	2.5	<96%	0
2	Uptime of Traffic signal Aspects (irrespective of cabling/power etc. issues)	99%	5	>= 92% to <99%	2.5	<92%	0
3	Uptime of Traffic signal Controller (irrespective of Network/cabling/power etc. issues)	99%	5	>= 96% to <99%	2.5	<96%	0
4	Uptime of Traffic Sensors (Real time volume count availability irrespective of network/power/etc. issues)	98%	5	>= 96% to <98%	2.5	<96%	0
6	Uptime of Speed Detection system (Irrespective of network/power/etc. issues)	98%	5	>= 96% to <98%	2.5	<96%	0
7	Uptime of RLVD system (Irrespective of network/power/etc. issues)	98%	5	>= 96% to <98%	2.5	<96%	0
8	Uptime per ANPR system (live feed available irrespective of network/power/etc. issues)	98%	5	>= 96% to <98%	2.5	<96%	0
9	Mean Time to Repair of ITCS Field Components	< 1 Day	5	>1 Day and <3 Days	2.5	>3 Days	0
Application Performance (includes any user/system application related to the project)							
1	Overall application(s) availability	>=99.50%	8	>= 96.5 % to <99.50%	4	< 96.5 %	0
2	Reports Generation Response Time (Alerts/MIS/Logs etc.)	Simple query - < 5secs Medium complexity	1	Simple complexity Query = 5.01 – 10 secs	0.5	Simple complexity Query = > 10 secs Medium complexity	0

#	Performance Area	Baseline		Lower Performance	Breach		
		Metric	Points	Metric	Points	Metric	Points
		query - <30 secs High Complexity query - < 1min		Medium complexity query = 30.01 – 60 secs High Complexity query = < 60.1 sec – 2 min		query = > 60 secs High Complexity query = > 2 min	
3	Maximum time for successful Traffic Controller settings modification	< 4 secs	1	4.01 – 6.0 secs	0.5	>6 secs	0
Video Analytics Performance							
1	ANPR for HSPR Number plates (3 wheelers & above)	80%	3	79.99% to 60%	1.5	< 60 %	0
2	ANPR for Non-HSPR Number plates (3 wheelers & above)	60%	3	59.99% to 40%	1.5	< 40 %	0
3	ANPR for HSPR Number plates (2 wheelers)	80%	3	79.99% to 60%	1.5	< 60 %	0
4	ANPR for Non-HSPR Number plates (2 wheelers)	60%	3	59.99% to 40%	1.5	< 40%	0
5	Any other analytics (SLA to be defined in discussion with Successful Bidder)	80%	3	79.99% to 60%	1.5	< 60%	0
End-User Equipment Uptime							
1	Monitoring workstations at Command Centers	99%	5	>= 96 % to <99%	2.5	< 96 %	0
Underlying IT Infrastructure Uptime/Availability at Data Center							
1	Production Servers Uptime	99.95%	10	>= 99.5 % to <99.94%	5	< 99.5%	0
2	Storage System Uptime	99.95%	10	>= 99.5 % to <99.94%	5	< 99.5%	0
Security /Patch Services for IT Infrastructure							
1	Firewall and any other security appliance Uptime	100%	5	97 % to 99.99%	2.5	< 97%	0
2	Security rules update within 2 hours of approved change management request	0 violations of service parameters	1	1 – 4 violations	0.5	> 4 violations	0

#	Performance Area	Baseline		Lower Performance	Breach		
		Metric	Points	Metric	Points	Metric	Points
3	Anti-virus, Anti-spyware, Anti-spam updates within 24 hrs. of request	0 violations of service parameters	1	1 – 4 violations	0.5	> 4 violations	0
4	Critical Patches – within 48 hours of patch release.	0 violations of service parameters	1	1 – 4 violations	0.5	> 4 violations	0
5	Non-Critical Patches – within 15 days of patch release.	Up-to 1 violations of service parameters	1	2 – 5 violations	0.5	> 5 violations	0
6	Resolution of low-level Issue (upgrade, shifting and preventive maintenance (of non-production items))	2 days	1	>=2 to 3 days	0.5	> 3 days	0
	Total Score		**100**		**50**		**0**

8.4.1. Explanation Notes for SLA Matrix above

Field Sensors (Traffic Surveillance Cameras, RLVD, ANPR, Speed detection systems) Availability

Definition	Availability of "Field Sensors (Traffic Surveillance Cameras, RLVD, ANPR, Speed detection systems, Traffic Controller) Availability" means availability of the sensor data to the Integrated Command and Control Center/Traffic Command Centre.
Measurement of Service level Parameter	[(Total average Uptime of all the respective field sensors in a quarter)/(Total Time in a quarter)]*100

Application Availability

Definition	Application availability refers to the total time when the Application is available to the users for performing all activities and tasks.
Measurement of Service level Parameter	[(Total Uptime of the Application in a quarter) / (Total Time in a quarter)]*100

Issue Resolution

Explanation	Issue Resolution SLA shall monitor the time taken to resolve a complaint / query after it has been reported by SSCDL/SMC/End user department to the Successful Bidder.
Service Level Requirement	Different Issues/Queries shall be classified as in following three categories as defined above. **Critical** : Issue that impacts more than one production services / is raised by higher management / is impacting high importance areas **Medium**: Issue that doesn't impact more than one production services but has a potential to impact or may get escalated to top management if not resolved quickly **Low**: Upgrades, shifting, preventive maintenance. Issues which don't have impact on services.

8.4.2. General Instructions related to SLAs mentioned above

Theft cases by default would not be considered as "beyond the control of Bidder". However, certain cases, based on circumstances & certain locations, SSCDL/SMC/End user department may agree to qualify as "beyond the control of Bidder".

Power shut down would not be considered as "beyond the control of Bidder".

Damages due to Road Accident / Mishap shall be considered as "beyond the control of Bidder".

Deliberate damage to field devices: camera, Pole etc. would not be considered as "beyond the control of Bidder"

Bidder is advised to have stronger poles & proper housing to protect from such damages.

Bidder is also required to note that in case of SLAs not being made applicable for cases considered as "beyond the control of bidders", Bidder would still need to replace the component (if it is not functional as per SLA) within the SLA defined for Resolution of Critical Level / Medium Level / Low level issues. In case bidder doesn't adhere to the Issue Resolution SLA timelines, the original SLA shall be made applicable.

8.4.3. SLA for Bandwidth as a service

Note – This SLA for Bandwidth as a service is applicable over and above the SLAs mentioned in above table.

- For Leased Line/MPLS L3 VPN/Dark Fiber :
    - Operation & Fault reporting Helpdesk (Toll Free): 24x7x365
    - Individual link uptime percentage on Quarterly Basis : 99.5%
    - Packet losses: Less than 1% (Avg. Over 1000 ping) at any point of given time on each link with proposed bandwidth load with packets of 1500 bytes.
    - Maximum latency of data packets of 1500 bytes over Point to point/Multipoint circuit: (Hub to Spoke/Branch)
- For Fiber Media less than 25 ms (RTT) between two end points of the link
- i.e., for IP A.B.C.D ping will be "ping A.B.C.D. –n 100 –l 1500"
    - For MPLS L3 VPN it must be less than 50 ms (RTT) between two end points of the link (Hub to Spoke/Branch) for any media Fiber.

Calculation under SLA:

1. The successful bidder shall sign a Service Level Agreement with SSCDL/SMC to ensure an uptime of **99.5% for individual circuit**. The downtime shall be calculated form the time the fault has been reported/Ticket generated till the time it is resolved/Ticket Closed. Deduction in payment will be made for downtime as per the following table from the quarterly bills raised by the bidder.
2. Penalty is in percentage(%) of Total Quarterly Payment for individual circuits
3. **Latency:** Latency will be randomly checked if required, on periodic basis and in case of non-adherence of SLA latency limit, the link will be considered as down with effect from time to detection till time to SLA latency limit to restored.

#	Performance Area	SLA	Penalty/Link
1	Link Uptime	>=99.5%	No penalty
2	**Uptime (%) =** [Total Hours in a quarter	99.49 to 98.5	Penalty of 10% of total O&M charge per link to be paid per Quarter

#	Performance Area	SLA	Penalty/Link
3	–Planned network downtime(Hours) – Total down time(Hours) in a quarter]*100/[Total hours in a quarter - Planned network downtime(Hours)]	98.49 to 97.5	Penalty of 20% of total O&M charge per link to be paid per Quarter
4		97.49 to 95	Penalty of 30% of total O&M charge per link to be paid per Quarter
5		94.99 to 90	Penalty of 50% of total O&M charge per link to be paid per Quarter
7		<90	Penalty of 100% of total O&M charge per link to be paid per Quarter

Note:

I. Since, the links provided are managed services, the same shall be continuously monitored by the selected bidder. The system should auto identify the issues with regards to any link and auto generate the ticket. The user complaints must also be registered and a system generated ticket ID is to be provided.

II. Notification must be sent to SMC/SSCDL on compliance of such complaint.

III. Service Provider shall submit the monthly Reports on the performance and adherence to the SLA through various tools such as EMS, NMS, Helpdesk and must submit the same along with the quarterly invoice.

IV. If any link uptime is found <90% for 2 consecutive quarters then SSCDL/SMC may get the services through another service provider at the bidder's risk and cost.

V. Following will not be considered for downtime calculation

   a. Link down due to power failure and CPE (Customer Premises Equipment) switch off at respective SMC site location.

   b. Schedule maintenance by vendor with prior information to SMC/SSCDL. For any scheduled/planned downtime, the Service Provider will inform SSCDL, in writing at least 3 working days in advance and will take prior approval. All planned activities for which downtime is required would be carried out in non-peak hours only and it is desirable to carry out such activities on off day i.e., public holiday only.

VI. The payment shall be made on quarterly basis after deducting necessary penalties as per SLA calculations Bidder is required to submit SLA/Downtime reports for each link with quarterly invoices provided to SSCDL/SMC. SLA reports provided by bidder will be compared with SLA reports maintained by SSCDL/SMC for each link and after verification final SLA calculation/Downtime Penalty derived by SSCDL/SMC will be considered as final.

VII. SI is required to close the complaint/ticket only after taking necessary verification/permission from authorized SMC person via email. If particular complaint/ticket closed without consent of SMC/SSCDL same shall be considered as down in nature with continuation to registered complaint/ticket

8.4.4. SLA for Security Breach

Note – This SLA for Security Breach is applicable over and above the SLAs mentioned in above table.

Definition	Security of the overall system is quite important and Successful Bidder shall be required to ensure no compromise is done on the same. Security Breach types considered for this SLA are– • Availability of Video feeds to any other user than those authorized by SSCDL/SMC/End user department and provided passwords • Availability of any report / data to any other user than those authorized by SSCDL/SMC/End user department, and provided passwords • Successful hacking of any active component on the network by any unauthorized user Or any other privacy rule is broken as per Govt. of India guidelines • Any other security breach which can compromise the system uptime/accuracy/privacy, etc.
Service Level Requirement	Security compliance of the system should be 100%. There would be zero tolerance policy against such breaches
Measurement of Level Service Parameter	Any reported security breach shall be logged into the SLA Management solution as a security breach
Penalty for non-achievement of SLA Requirement	For every security breach reported and proved, there shall be a penalty of INR 1,00,000/- or lead to termination of contract

8.4.5. SLA for Breach in Replacement of Technical Manpower

Note – This SLA for supply of Technical Manpower is applicable over and above the SLAs mentioned in the above table.

Definition	Bidder is required to propose the CVs of the required technical manpower (as mentioned in Vol 2). It is vital that such manpower is available to SSCDL/SMC/End user department onsite and performs as per scope of work specified in this RFP. The current SLA breach shall specify penalty amount for non-availability of these man-power.
Service Level Requirement	Availability of the required man-power should be 100%. SI to implement the biometric attendance system/mobile application based attendance and share the attendance report of each person proposed as part of team on monthly basis with SSCDL. **Note:** Project team shall require to take the approval from the SSCDL or concerned authority. The penalty shall be waived off for those approved leaves. In case of absence of approval, the penalty shall be levied.

<table>
<tr><td>Measurement of Service Level Parameter</td><td>Following instances would be considered as SLA non-compliances:
Replacement of a profile by the bidder within one year
Non-Deployment of the profile for more than 1 month if purchaser has asked SI for replacement (With equal or higher qualification and experience) due to non-performance
Note: Replacement due to reasons not in control of SI (like resignation of the resource, accident, etc.) would not be counted in the permissible 1 replacement.</td></tr>
<tr><td>Penalty for non-achievement of SLA Requirement</td><td>For every SLA non-compliance reported and proved, there shall be a penalty as given below:<table><tr><th>Team Member</th><th>Penalty</th></tr><tr><td>Project Manager</td><td>Rs. 2,50,000/-</td></tr><tr><td>Technical Expert</td><td>Rs. 1,50,000/-</td></tr><tr><td>For all other team members</td><td>Rs. 50,000/-</td></tr></table></td></tr>
</table>

8.4.6. SLA for Breach in provisioning of Technical Manpower

Note – This SLA for supply of Technical Manpower is applicable over and above the SLAs mentioned in the above table.

<table>
<tr><td>Definition</td><td>Bidder is required to propose the CVs of the required technical manpower (as mentioned in Vol 2). It is vital that such manpower is available to SSCDL/SMC/End user department onsite and performs as per scope of work specified in this RFP. The current SLA breach shall specify penalty amount for non-availability of these man-power.</td></tr>
<tr><td>Service Level Requirement</td><td>Availability of the required man-power should be 100%. SI to implement the biometric attendance system/mobile application based attendance and share the attendance report of each person proposed as part of team on monthly basis with SSCDL.

Note: Project team shall require to take the approval from the SSCDL or concerned authority. The penalty shall be waived off for those approved leaves. In case of absence of approval, the penalty shall be levied.</td></tr>
<tr><td>Measurement of Service Level Parameter</td><td>Following instances would be considered as SLA non-compliances:
Non- availability of proposed manpower as proposed by Bidder in Technical proposal.
Availability of manpower which do not meet the min required qualification.</td></tr>
<tr><td>Penalty for non-achievement of SLA</td><td>For every SLA non-compliance reported and proved, there shall be a penalty as given below:<table><tr><th>Team Member</th><th>Penalty</th></tr></table></td></tr>
</table>

Requirement	Project Manager	Penalty of Rs. 3,000 per day of non-availability for 7 days at project site Penalty of Rs. 7,000 per day of non-availability after 7 days at project site
	Technical Expert	Penalty of Rs 1,500 per day of non-availability for 7 days at Project site Penalty of Rs. 3,000 per day of non-availability after 7 days at Project site
	For all other team members	Penalty of Rs 500 per day of non-availability for 7 days at Project site Penalty of Rs. 1,000 per day of non-availability after 7 days at Project site

9. Payment Schedule and Milestones

9.1. Project Milestone

1. SMC / SSCDL shall issue a "Work Order(WO)" in writing, indicating the number of units of Hardware and Software to be supplied under this Project. Upon getting the Work Order, the selected bidder shall promptly supply, install and commission the hardware and software as soon as possible within the lead time specified in the Work order. The delay in delivery will attract delayed penalty as mentioned in this RFP.
2. If required SSCDL shall issue subsequent "Request Order (Post Work Order(WO) allocation) until the full quantities of Hardware and Software specified in volume 1 within the variation limits of RFP is exhausted. The contract period of 5 years is considered from the Go-Live date of Work Order(WO) (As mentioned in point 1 above) (In case sub sequent Request Order issued to SI).
3. SSCDL shall specify the implementation time in Sub-Sequent Request Order. The Lead Time of subsequent Request Order shall be decided in discussion with the SI before the Request Order is placed. SSCDL's decision in this regard shall be final but reasonable time shall be provided to the SI. Delay or non-performance will form the basis for application of Liquidated Damages.
4. Timeline for Work Order shall be as per below:

T = Date of Work Order

Services	Milestone	Timeline
Work Order (WO) – New Work	1. Satisfactory delivery and acceptance of materials (as per the Work Order)	T + 3 Months
	2. Satisfactory competition of Installation of respective items/ equipment (as per the Work Order)	T + 5 Months
	3. UAT and Go Live of entire Work Order (Testing and Commissioning)	T + 6 Months
	4. Successful completion of Operation and Maintenance for 1st Quarter post issuance of Go-Live of Work Order	T1 + 3 Months
	5. Comprehensive Operation & Maintenance	5 Years from the date of Go-Live
Existing System & Infrastructure's Comprehensive Operation & Maintenance	6. Comprehensive Operation & Maintenance of Existing System & Infrastructure	Entire contractual period including implementation phase (T1+5 Years)

9.2. Payment Terms for New/Fresh Work

#	Milestone	Deliverables	Payment Terms
1.	Satisfactory delivery and acceptance of materials (as per the Work Order) and after submission of the invoice.	• Delivery Challan • Material inspection sign-off report (Sign-off from client is mandatory)	40% of total CAPEX of Work Order (CAPEX of Delivered Components)
2.	Satisfactory competition of Installation of respective items/ equipment and after, submission of the invoice.	• Installation and Commissioning Sign-off report • Closure of observation report, if any	25% of total CAPEX of Work order (CAPEX of Installed Components)
3.	UAT and Go Live of entire Work Order (Testing and Commissioning)	• Integration of the existing system with proposed system. • UAT Report • Go-Live certificate from client • Training completion report • Submission of Standard Operating Procedure (SOPs)	25% of total CAPEX of Work order (CAPEX of UAT of Go Live completed components)
4.	Successful completion of Operation and Maintenance for 1st Quarter post issuance of Go-Live	• SLA report	10% of total CAPEX of Work order (CAPEX of Go Live Components/ Solutions)
5.	Operation Expense (OPEX) Payment shall be paid in 20 Quarterly installments	• Quarterly SLA report	Total OPEX in 20 equal instalments for five years after successful Project UAT and Go Live of "Work Order"

i. The payments are subject to meeting of SLA's failing which the appropriate deductions as per RFP will be made applicable.

ii. Payment of Operations and maintenance phase will be made on quarterly basis (at completion of each quarter) based on the adherence to SLA, for the amount quoted for each respective year. The Operational cost will be payable for those items which are in working condition / operational

9.3. Payment Schedule for Existing System & Infrastructure's (Comprehensive Operation & Maintenance)

i. SI shall have to upgrade, integrate and maintain all the existing systems and infrastructures (As mentioned in Volume 2, Section 4.3) for the duration of entire contractual period including implementation phase. Existing systems and infrastructures have already been implemented by various agencies of Surat Municipal Corporation (SMC) / Surat Smart City Development limited (SSCDL).

ii. Please note that payment for the Operation and Maintenance (O&M) for existing infrastructure(As mentioned in Volume 2, Section 4.3) shall commence from the date of Go-live of Work Order only and no payment shall be made to SI for the maintenance of these assets during the implementation phase of the project.

10. Formats for Pre-Qualification/Bidder's Eligibility Criteria bid

10.1. Checklist for Pre-Qualification Documents

#	Documents to be submitted	Submitted (Y / N)	Documentary Proof (Page No.)
1.	Bid Fee of Rs.21,240/- (Rs. 18,000 + 18% GST)by Demand Draft or Banker's Cheque		
2.	EMD of Rs 75,00,000 /- as per section 7.10		
3.	Pre- Qualification and Technical Bid Cover Letter (Form PQ 1)		
4.	Particulars of the Bidders (Form PQ 2)		
5.	Copy of Certificate of Incorporation/Registration Certificate (In case of Consortium all members to submit)		
6.	Details of Annual Turnover and Net-worth for last three financial years (Form PQ 3)		
7.	Certificate from the Statutory auditor / CA clearly specifying the annual turnover and Net-worth for the specified years (Form PQ 4).		
8.	Declaration letter that the firm is not blacklisted by any Central Government / Any State Government / Smart City SPV / PSU/ Supreme Court of India/Any Government Agency in India as on the date of bid submission., in the format given in the RFP (Form PQ 5). In case of consortium, all members to submit.		
9.	Affidavit on Non-judicial Rs 300 stamp paper (Form PQ 6). In case of consortium, all members to submit.		
10.	Details of the projects executed (Form PQ 7, PQ 8, PQ 9)		
11.	Copy of Audited Balance Sheet for last three financial years. In case of consortium, all members to submit.		
12.	Copy of the audited Profit & Loss Statements for last three financial years. In case of consortium, all members to submit.		
13.	Supporting Documents like Rent Agreement/ Electricity Bill / Self Declaration on Company's Letter head to be submitted for Local Office in Surat. OR Undertaking from authorized signatory to open the local office with Warehouse facility within 30 days from issuance of LOI/Work Order to be submitted		
14.	Copy of GST registration. In case of consortium, all members to submit.		
15.	Copy of PAN registration. In case of consortium, all members to		

#	Documents to be submitted	Submitted (Y / N)	Documentary Proof (Page No.)
	submit.		
16.	Valid Solvency Certificate amounting minimum 20% of the consideration of the Contract from a scheduled / nationalized bank from Sole / Prime Bidder (In case of consortium)		
17.	Copy of work orders and client certificate for Bidder's Eligibility Criteria		
18.	Power of attorney / board resolution to the authorized Signatory of the RFP (PQ 10) (in case of consortium, all members to submit)		
19.	Power of Attorney for Prime Bidder of Consortium (Form PQ11)		
20.	Consortium Agreement with clear defining roles and responsibilities of each consortium partner		

Note:

- All Pre-qualification bid document(s)/ details should be duly sealed & signed as required.

10.2. PQ_1: Pre-Qualification and Technical Bid Cover Letter

<<To be printed on lead bidder company's letterhead and signed by Authorized signatory>>

Date: dd/mm/yyyy

To,
General Manager (Transit),
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Subject: Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City

Reference: Tender No :<No> Dated<DD/MM/YYYY>

Dear Sir/ Madam,

Having examined the Bid Document (and the clarification / corrigendum issued thereafter, if any), the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide the professional services as required and outlined in the Bid Document for the "Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City". We attach hereto our responses to Pre-Qualification, Technical-Qualification & Commercial proposals as required by the Bid Document. We confirm that the information contained in these responses or any part thereof, including the exhibits, and other documents and instruments delivered or to be delivered to Surat Smart City Development Limited, is true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead SSCDL in its shortlisting process.

We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading the selection process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so.

We agree for unconditional acceptance of all the terms and conditions set out in the Bid Document (& subsequent clarification / addendum & corrigendum, if any) document and also agree to abide by this tender response for a period of 180 days from the Bid Opening date. We hereby declare that in case the contract is awarded to us, we shall submit the contract performance guarantee bond in the form prescribed the Bid Document.

We agree that you are not bound to accept any tender response you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products/ services specified in the tender response.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Signature of Authorized Signatory (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

10.3. PQ_2: Bidder Information Format

<<To be printed on lead bidder company's letterhead and signed by Authorized signatory>>

To whomsoever it may concern,

Bidder information Format

Please find below the details of bidder for participation in "Selection of Implementing agency for Integrated Traffic Control System in Surat City" tender:

#	Particulars	Prime/Lead bidder (Consortium Member #1)	Consortium Member #2
1	Name of the organization		
2	Type of Organization (Pvt. Ltd/ Public Limited)		
3	Country of registered Office		
4	Address of Registered office		
5	Company Registration Details		
6	Date of Registration		
7	PAN No.		
8	GST Registration No.		
9	Details of ISO 9001:2008/ CMMI level 3 and above/ any global certifications		
10	Address of Registered office in India		
11	No of years of operations in India		
12	Authorized Signatory Name		
13	Authorized Signatory Designation		
14	Authorized Signatory Contact Details		

#	Particulars	Prime/Lead bidder (Consortium Member #1)	Consortium Member #2
15	Authorized Signatory Email ID		

Yours Sincerely,

Signature of Authorized Signatory (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

Note: To be submitted with any other supporting details specified as Document Proof in Section 6.

10.4. PQ_3: Bidders Annual turnover over last 3 financial years

<<To be printed on bidder company's letterhead and signed by Authorized signatory. In case of Consortium all members are required to submit>>

Date: dd/mm/yyyy

To
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India

Subject: Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City.

Sir/ Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document for Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City.

I hereby declare that below are the details regarding Overall turnover over last 3 financial years for our organization

#	Details	FY 2019-2020	FY 2020-2021	FY 2021-22 (in Crores)	Average Turnover

		(in Crores) (i)	(in Crores) (ii)	(iii)	[(i)+(ii)+(iii)/3]
1	Overall Annual Turnover				

Contact Details of officials for future correspondence regarding the bid process:

Details	Authorized Signatory	Secondary Contact
Name		
Title		
Company Address		
Mobile		
Fax		
Email Id		

I further certify that I am competent officer in my company to make this declaration.

Yours Sincerely,

Signature of Authorized Signatory (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

Note:

To be submitted with any other supporting details specified as Document Proof in Section 6.

If FY 2021-22 Financial Statements of any bidder is unaudited then the Audited Financial Statements of 2018-19 along with an undertaking letter from the bidder that the 2021-22 Statements are not audited is to be submitted.

10.5. PQ_4: Auditor's/CA Certificate for turnover for Bidder

<<To be printed on CA/Auditors company's letterhead and signed by Authorized signatory. In case of Consortium all members are required to submit >>

Date: dd/mm/yyyy

This is to certify that the Annual Turnover from ICT and Net-worth as per books and records of _____ for the following financial years are as under.

#	Financial Year Ending	Annual Turnover (INR)	Net-worth
1.	31st March, 2020		
2.	31st March, 2021		
3.	31st March, 2022		
	Average Turnover		

I further certify that I am competent officer in my company to make this declaration.

Yours Sincerely,

Signature of Auditor/CA (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

Note:

If FY 2021-22 Financial Statements of any bidder is unaudited then the Audited Financial Statements of 2018-19 along with an undertaking letter from the bidder that the 2021-22 Statements are not audited is to be submitted.

10.6. PQ_5: Self Declaration – No Blacklisting

<< To be printed on bidders (or in case of consortium/ sub-contractor, each member of consortium/sub-contractor) company's letterhead and signed by Authorized signatory >>

Date: dd/mm/yyyy

To
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sir/Madam,

In response to the Tender Ref. No. _____ dated

_____ for SELECTION OF IMPLEMENTATION AGENCY FOR INTEGRATED TRAFFIC CONTROL SYSTEM (ITCS) IN SURAT CITY, as an owner/ partner/ Director of _____, I/ We hereby declare that presently our Company/ firm _____is having unblemished record and is not declared ineligible for corrupt and fraudulent practices either indefinitely or for a particular period of time by any Central Government / Any State Government / Smart City SPV / PSU/ Supreme Court of India/Any Government Agency in India as on the date of bid submission.

We further declare that presently our Company/ firm _____is not blacklisted and not declared ineligible for reasons other than corrupt and fraudulent practices by any Central Government / Any State Government / Smart City SPV / PSU/ Supreme Court of India/Any Government Agency in India as on the date of bid submission.

If this declaration is found to be incorrect then without prejudice to any other action that may be taken, my/ our security may be forfeited in full and the tender if any to the extent accepted may be cancelled.

Name of the Bidder	:
Authorized Signatory	:
Seal of the Organization	:
Business Address	:
Date	:
Place	:

10.7. PQ_6: Affidavit

The affidavit format as indicated below to be furnished on non-judicial stamp paper of Rs. 300 (duly notarized) by bidder (or each member of consortium, in case of consortium)

Name of work: Selection of Implementing Agency for Integrated Traffic Control System (ITCS) in Surat City

I, the undersigned, do hereby certify that all the statements made in the required attachments re true and correct. I also understand that in case of wrongful / false information, Surat Smart City Development Ltd (SSCDL) is entitled to take any civil and criminal punitive action against me/us.

The undersigned also hereby certifies that neither our firm M/s._____ nor any of its constituents partners have abandoned any work in India nor any contract awarded to us for such works has been rescinded during last five years, from the date of this bid submission. I hereby certify that presently our company is not blacklisted or debarred by any Government /PSU on the date of Bid Submission.

The undersigned hereby authorize(s) and request(s) any bank, person, authorities, government or public limited institutions, firm or corporation to furnish pertinent information deemed necessary and requested by the SSCDL/SMC to verify our statements or our competence and general reputation.

The undersigned hereby declares that I have read clause regarding restriction on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries.

I certify that M/s <<name of Company>> is not from such a country.

OR

I certify that M/s <<name of Company>> belongs to such a country and has been registered with the Competent Authority (i.e. Registration committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT)) and the copy of valid registration from competent authority has been attached in this regard.

I on behalf of M/s <<name of Company>> further undertake that we will not subcontract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

I hereby certify that M/s <<name of Company>> fulfils all requirements in this regard and is eligible to be considered.

The undersigned understands and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the SSCDL/SMC.

We hereby confirm that all the components/parts/assembly which we shall supply on award of contract shall be original new components /parts/assembly/software from respective OEMs of the products and that no refurbished/duplicate/ second hand components/parts/ assembly shall be used.

The SMC/SSCDL and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents and information submitted in connection with this bid and to seek clarification from our bankers and clients regarding any financial and technical aspects. This Affidavit will also serve as authorization to any individual or authorized representative to any institution referred to in the supporting information to provide such information deemed necessary and requested by you to verify statements and information provided in the RFP or with regard to the resources, experience and competence of the Applicant.

My/our offer shall not be considered in case of fake/ forged document(s) found during verification at any stage or at any stage of contract. I/ We are agreed to whatever action (s) taken by competent authority of corporation in the aforesaid circumstances such as forfeiture of security deposit and debarring from participation in future tenders for the period/ years as deemed fit by the corporation and informing the same to all other state/ central level Government/ semi government organizations.

Name of the Bidder :
Authorized Signatory :
Seal of the Organization :
Business Address :
Date :
Place :

10.8. PQ_7: Details of similar work undertaken Project covering at least 2 out of 4 components

<< To be printed on bidders' company's letterhead and signed by Authorized signatory >>

Date: dd/mm/yyyy

To
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sir/Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document for "***Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City***".

I hereby declare that below are the details regarding relevant work that has been taken up by our company.

Name of the Project	Prime/Sole Bidder

	Project 1	Project 2	Project 3	-	Project n
General Information					
Client for which the project was executed					
Name of the client contact person(s)					
Designation of client contact person(s)					
Contact details of the client contact person(s)					
Project Details					
Description of the project					
Scope of work of the Bidder					
Deliverables of the Bidder					
Outcomes of the project					
Other Details					
Total cost of the project (CAPEX + OPEX)					
Total cost of the services provided by the Bidder					
Duration of the project (number of months, start date, completion date, current status)					
Go Live Date					
Adaptive Traffic Control System (ATCS) Implemented (Yes/No). Please provide the detailed scope covered under this solution.					
Traffic Management System including Red Light Violation Detection System (RLVD) Implemented (Yes/No). Please provide the detailed scope covered under this solution.					
Traffic Management System including Speed Violation Detection System (SVD) Implemented (Yes/No). Please provide the detailed scope covered under this solution.					
General CCTV based City Surveillance (including Video Analytics) Implemented (Yes/No). Please provide the detailed scope covered under this solution.					
Mandatory Supporting Documents:					
Copy of completion / Go Live certificate issued by client,					
Copy of Work order clearly highlighting					

Name of the Project	Prime/Sole Bidder				
	Project 1	Project 2	Project 3	-	Project n
scope of work, Bill of Material and value of contract / order					
Copy of contract agreement with client					

I further certify that I am competent officer in my company to make this declaration.

Yours Sincerely,

Signature of Authorized Signatory (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

Note: To be submitted with any other supporting details specified as Document Proof in Section 6 and 7.22

10.9. PQ_8: Details of experience of implementing Traffic Law Enforcement System like Speed Violation System & Red-Light Violation Detection

<< To be printed on bidders' company's letterhead and signed by Authorized signatory >>

Date: dd/mm/yyyy

To
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sir/Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document for "***Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City***".

I hereby declare that below are the details regarding relevant work that has been taken up by our company.

Name of Project	Project 1	Project 2	Project 3	-	Project n

Name of Project	Project 1	Project 2	Project 3	-	Project n
General Information					
Client for which the project was executed					
Name of the client contact person(s)					
Designation of client contact person(s)					
Contact details of the client contact person(s)					
Project Details					
Description of the project					
Scope of work of the Bidder					
Deliverables of the Bidder					
Outcomes of the project					
Other Details					
Total cost of the project (CAPEX + OPEX)					
Total cost of the services provided by the Bidder					
Duration of the project (number of months, start date, completion date, current status)					
Go Live Date					
Traffic Management System including Red Light Violation Detection System (RLVD) Implemented (Yes/No). Please provide the detailed scope covered under this solution along with no. of RLVD Camera					
Traffic Management System including Speed Violation Detection System (SVD) Implemented (Yes/No). Please provide the detailed scope covered under this solution along with no. of SVD Camera.					
Mandatory Supporting Documents:					
Copy of completion / Go Live certificate issued by client,					
Copy of Work order clearly highlighting scope of work, Bill of Material and value of contract / order					
Copy of contract agreement with client					

I further certify that I am competent officer in my company to make this declaration.
Yours Sincerely,

Signature of Authorized Signatory (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

Note: To be submitted with any other supporting details specified as Document Proof in Section 6 and 7.22

10.10. PQ_9: Details of experience of implementing Vehicle Actuated (Semi Actuated or Fully Actuated) Traffic Signal Junction with centralized software system

<< To be printed on bidders' company's letterhead and signed by Authorized signatory >>

Date: dd/mm/yyyy

To
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sir/Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document for "***Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City***". I hereby declare that below are the details regarding relevant work that has been taken up by our company.

Name of Project	Project 1	Project 2	Project 3	-	Project n
General Information					
Client for which the project was executed					
Name of the client contact person(s)					
Designation of client contact person(s)					
Contact details of the client contact person(s)					
Project Details					
Description of the project					
Scope of work of the Bidder					
Deliverables of the Bidder					
Outcomes of the project					
Other Details					
Total cost of the project (CAPEX +					

Name of Project	Project 1	Project 2	Project 3	-	Project n
OPEX)					
Total cost of the services provided by the Bidder					
Duration of the project (number of months, start date, completion date, current status)					
Go Live Date					
No. of Vehicle Actuated (Semi-Actuated or Fully Actuated) Traffic Signals. Please provide the detailed scope covered under this solution.					
Mandatory Supporting Documents:					
Copy of completion / Go Live certificate issued by client,					
Copy of Work order clearly highlighting scope of work, Bill of Material and value of contract / order					
Copy of contract agreement with client					

I further certify that I am competent officer in my company to make this declaration.
Yours Sincerely,

Signature of Authorized Signatory (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

Note: To be submitted with any other supporting details specified as Document Proof in Section 6 and 7.22

10.11. PQ_10:Power of Attorney for Signing of Proposal

Date: dd/mm/yyyy

To
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Name of work: Selection of Implementing Agency for Integrated Traffic Control System (ITCS) in Surat City

Dear Sir,

<<**Bidder's Name**>> hereby authorizes <<**Designated Representative's Name**>> to act as representative of <<**Bidder's name**>> for the following activities vide its Board Resolution/ Power of Attorney attached herewith.

To attend all meetings with SMC/SSCDL or other entities associated with Project ("**Selection of Implementing Agency for Integrated Traffic Control System (ITCS) in Surat City**) for SMC/SSCDL and to discuss, negotiate, finalize and signing of any bid documents, undertakings consequent to acceptance of bid, agreement, contract and generally to represent the bidders in all its dealing with SMC/SSCDL related to RFP for **Selection of Implementing Agency for Integrated Traffic Control System (ITCS) in Surat City**" Project for SMC/SSCDL and subsequent Contract.

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

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

For .....

(Signature)

.....

(Name & Title)

Witnesses:

1.

2.

(Executants)

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.
Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/power of attorney in

favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.
For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention, 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate

10.12. PQ_11: Power of Attorney for Lead Member of Consortium

Whereas the has invited applications from interested parties for the Selection of "***Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City***".

Whereas ..... and ..... (Collectively "Consortium") being Members of the Consortium are interested in bidding for 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 for the Members of the Consortium to designate one of them as 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 and its execution.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS

We, ... Having our Registered office at .....,

M/s,..... Having our Registered office at .....,

(hereinafter collectively referred to as the "Principals") do hereby irrevocably designate, nominate, constitute, appoint and authorize M/s. ..... having its registered office at ....., being one of the Members of the Consortium, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the "Attorney"). We hereby irrevocably authorize the Attorney (with power to sub-delegate) to conduct all business for and on behalf of the Consortium and any one of us during the bidding process and, in the event the Consortium is awarded the concession/contract, during the execution of the Project and in this regard, to do on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the pre-qualification of the Consortium and submission of its bid for the Project, including but not limited to signing and submission of all applications, bids and other documents and writings, participate in bidders and other conferences, respond to queries, submit information/ documents, sign and execute contracts and undertakings consequent to acceptance of the bid of the Consortium and generally to represent the Consortium in all its dealings with the SSCDL, and/ or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Consortium's bid for the Project and/ or upon award thereof till the Concession Agreement is entered into with the SSCDL.

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

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

For .....

(Signature)

.....

(Name & Title)

For .....

(Signature)

.....

(Name & Title)

Witnesses:

1.

2.

(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.

Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.

For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention, 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate

11. Formats for Technical Qualification Bid

11.1. General Instructions on Preparation of the Technical Proposal

Bidders have to submit a very structured and organized technical bid, which will be analysed by the Technical Evaluation Committee for different compliances with regards to the requirements of the project. The document submitted must be searchable and well indexed without any handwritten material. Since the cut-off marks for Technical bid Score is 70, the quality and completeness of the information submitted by the Bidder will matter a lot. All the documents must be submitted in one file only.

Bidder is expected to divide its Bid in following sections / documents:

Bidder's Competence to execute the project

This document should bring about the capability of the firm to execute this project. Some of the required documents are as follows:

Financial Capability of the Bidder in required formats and supporting documents

Experience in Similar projects

Technical Proposal: The technical proposal should specify the following:

Understanding of the Project

Clear articulation and description of the design and technical solution and various components including (Infrastructure architecture, Application architecture, data Architecture and physical street layer architecture)

Details of the application software proposed

Integration approach with existing Infrastructure

Reasoning for selection of the proposed technology over other options.

Strength of the Bidder to provide services including examples or case-studies of similar solutions deployed for other clients

Clearly articulate the Strategy and Approach and Methodology for Design, Installation, Configuration and Maintenance of hosted components, data recovery, hosting infrastructure of the project.

Approach and Methodology for Management of SLA Requirements specified in the bid. Bidder is required to clearly articulate how the SLA requirements would be adhered.

Detailed Project Plan with timelines, resource allocation, milestones etc. for supply, installation and commissioning of the various project components.

Internet bandwidth and the MPLS bandwidth requirement for the operations Risk Mitigation plan

Other Details

Bill of Material: This document should give details of all the proposed IT and Non-IT components, without specifying the costs. Please note that the bid shall get disqualified if Bidder gives price details in the technical document.

Compliance to Technical and Functional Specifications as mentioned in Volume 2, Annexure I & Annexure II.

Make & Model of all IT as well as non-IT components along with datasheets highlighting the Technical Specification (Ref: Volume 2, Section 8) parameters in each datasheet for compliances

11.2. Checklist for Technical-Qualification Document

#	Documents required	Submitted (Y / N)	(Page No.)
1.	Details of Annual Turnover and Net-worth for last three financial years (Form PQ 3)		
2.	Certificate from the Statutory auditor / CA clearly specifying the annual turnover and Net-worth for the specified years (Form PQ 4).		
3.	Details of similar work undertaken for showcasing product experience (PQ 7 to TQ 9)		
4.	Authorization letter from OEMs (Form TQ 1)		
5.	Bidder's Undertaking as per guidelines published by Ministry of Finance, Dept. of Expenditure, Public Procurement division dated 23.07.2020 (Form TQ 2)		
6.	OEM's Undertaking as per guidelines published by Ministry of Finance, Dept. of Expenditure, Public Procurement division dated 23.07.2020 (Form TQ 3)		
7.	Copy of ISO and/or CMMI certificate as asked in Technical Evaluation criteria		
8.	Description of the design and technical solution and various components including (Infrastructure architecture, Application architecture, data Architecture and physical street layer architecture)		
9.	Details of the application software proposed		
10.	Integration approach with existing Infrastructure		
11.	Reasoning for selection of the proposed technology over other options.		
12.	Strength of the Bidder to provide services including examples or case-studies of similar solutions deployed for other clients		
13.	Approach and Methodology for Design, Installation, Configuration and Maintenance of		

#	Documents required	Submitted (Y / N)	(Page No.)
	hosted components, data recovery, hosting infrastructure of the project.		
14.	Approach and Methodology for Management of SLA Requirements specified in the bid. Bidder is required to clearly articulate how the SLA requirements would be adhered.		
15.	Detailed Project Plan with timelines, resource allocation, milestones etc. for supply, installation and commissioning of the various project components.		
16.	Internet bandwidth and the MPLS bandwidth requirement for the operations		
17.	Risk Mitigation plan		
18.	CVs of the Key Manpower proposed (TQ 4)		
19.	Bidder's Total Responsibility Certificate (TQ 5)		
20.	Unpriced BOQ including Make & Model of all IT as well as non-IT components		
21.	Bidder's Compliance to Technical and Functional Specifications as mentioned in Volume 2, Annexure I & Annexure II.		
22.	OEM's Compliance to Technical and Functional Specifications as mentioned in Volume 2, Annexure I & Annexure II.		
23.	Datasheets highlighting the Technical Specification (Ref: Volume 2, Annexure I & II) parameters in each datasheet for compliances		
24.	Letter on company's letter head on total no of full time employee		
25.	Copy of Work Orders' and client certificate for Technical Evaluation		
26.	Supporting document for OEM Selection Criteria as per section 11.8		

- All Technical-qualification bid document(s)/ details should be duly sealed & signed as required.
- In case of the deviation in the authorization letter by the manufacturer & forwarding letter; the price bid of such bidder will not be opened.
- Any conditional mention regarding any technical details or prices in any document(s)/ forwarding letter; price bid of such bidder will not be opened.
- Bidder has to submit the Bidder's Compliance (Original or Notarized), OEM's Compliance and TQ_1 for all the proposed components. All the documents should be in Original or Notarized.

- Bidder has to submit the Bidder's Undertaking as per guidelines published by Ministry of Finance, Dept. of Expenditure, Public Procurement division dated 23.07.2020 (Form TQ_2) for all the proposed components. All the documents should be in Original or Notarized.
- Bidder has to submit the OEM's Undertaking as per guidelines published by Ministry of Finance, Dept. of Expenditure, Public Procurement division dated 23.07.2020 (Form TQ_3) for all the proposed components. All the documents should be in Original or Notarized.

11.3. TQ_1: Format for Authorization Letters from OEMs

<<To be printed on letter head of OEM and signed by Authorized signatory of OEM>>

Date: dd/mm/yyyy

To,
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sub : Selection of ***Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City*** – Authorization Letter from OEMs

Ref : Tender No: <No> Dated <DD/MM/YYYY>

Dear Sir/ Madam,

We _____, (name and address of the manufacturer) who are established and reputed manufacturers of _____ having factories at _____ (addresses of manufacturing / development locations) do hereby authorize M/s _____ (name and address of the bidder) to bid, negotiate and conclude the contract with you against the above mentioned tender for the above equipment / software manufactured / developed by us.

No.	Item Category	Quoted Make & Model
1.		
2.		
3.		
4.		
5.		
6.		
.		
.		
N		

We herewith certify that the above mentioned equipment / software products are not end of the life / end of sale/order and we hereby undertake to support these equipment / software for the duration of minimum 6 years from the date of Bid submission.

Yours faithfully,

(Signature of the Authorized Signatory
from OEM)
Name
Designation
Seal.
Date:
Place:
Business Address:

11.4. TQ_2: Bidder's Undertaking as per guidelines published by Ministry of Finance, Dept. of Expenditure, Public Procurement division dated 23.07.2020 and sub-sequent addendum

<<<<To be printed on bidder company's letterhead and signed by Authorized signatory>>

To,
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sub : Selection of ***Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City***

Mr. _____undersigned authorized representative of **M/s <<Name of Company>>** has read clause regarding restriction on procurement from a bidder of a country which shares a land border with India.

I certify that quoted product from following OEMs are not from such a country or, of if from such a country, these quoted products OEM have been registered with competent authority. I hereby certify that these quoted product & its OEM fulfils all requirements in this regard and is eligible to be considered for procurement from Bid number Nirbhaya/1/2019-20, 7th February 2020.

No.	Item Category	Quoted Make & Model
1.		

No.	Item Category	Quoted Make & Model
2.		
3.		
4.		
5.		
6.		
.		
.		
N		

In case I'm supplying material from a country which shares a land border with India, I will provide evidence for valid registration by the competent authority, otherwise Purchaser/End user Dept. reserves the right to take legal action on us.

Name of the Bidder :
Authorized Signatory :
Seal of the Organization :
Business Address :
Date :
Place :

11.5. TQ_3 : OEM's Undertaking as per guidelines published by Ministry of Finance, Dept. of Expenditure, Public Procurement division dated 23.07.2020 and sub-sequent addendum

<<<<To be printed on OEM company's letterhead and signed by Authorized signatory>>

To,
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sub : Selection of ***Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City***

Dear Sir,

Mr._____ undersigned authorized representative of **M/s. <<Name of Company>>** has read clause regarding restriction on procurement from a bidder of a country which shares a land border with India.

I certify that following quoted product is not from such a country or, of if from such a country, these quoted product(s) & we as OEM has been registered with competent authority. I hereby certify that this quoted product(s) fulfill all requirements in this regard and is eligible to be considered for procurement from _____".

No.	Item Category	Quoted Make & Model
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
.		
.		
N		

In case I'm supplying material from a country which shares a land border with India, I will provide evidence for valid registration by the competent authority; otherwise, Purchaser/End user Dept. reserves the right to take legal action on us.

Thanking you,

Yours faithfully

(Signature of the Authorized signatory of the OEM Organization)

Name :

Designation :

Date :

Company Seal :

Business Address :

11.6. TQ_4: CVs of the Key Manpower proposed

<table>
<tr><td>1</td><td>Name of the Staff</td><td></td></tr>
<tr><td>2</td><td>Current Designation in the Organization</td><td></td></tr>
<tr><td>3</td><td>Proposed Role in the Project</td><td></td></tr>
<tr><td>4</td><td>Proposed Responsibilities in the Project</td><td></td></tr>
<tr><td>5</td><td>Date of Birth</td><td></td></tr>
<tr><td>6</td><td>Education</td><td>Degree / Diploma, College, University, Year of Passing
Degree / Diploma, College, University, Year of Passing</td></tr>
<tr><td>7</td><td>Summary of Key Training and Certifications</td><td></td></tr>
<tr><td>8</td><td>Language Proficiency</td><td>
<table>
<tr><th>Language</th><th>Reading</th><th>Writing</th><th>Speaking</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>9</td><td>Employment Record (For the total relevant experience)</td><td>
<table>
<tr><td>From / To:</td><td></td></tr>
<tr><td>Employer:</td><td></td></tr>
<tr><td>Position Held:</td><td></td></tr>
<tr><td>From / To:</td><td></td></tr>
<tr><td>Employer:</td><td></td></tr>
<tr><td>Position Held:</td><td></td></tr>
<tr><td>From / To:</td><td></td></tr>
<tr><td>Employer:</td><td></td></tr>
<tr><td>Position Held:</td><td></td></tr>
</table>
</td></tr>
<tr><td>10</td><td>Total No. of Years of Work Experience</td><td></td></tr>
<tr><td>11</td><td>Total No. of Years of Experience for the Role proposed</td><td></td></tr>
<tr><td>12</td><td colspan="2">Highlights of relevant assignments handled and significant accomplishments (Use following format for each project)
<table>
<tr><td>Name of assignment or project:</td><td></td></tr>
<tr><td>Year:</td><td></td></tr>
<tr><td>Location:</td><td></td></tr>
<tr><td>Client:</td><td></td></tr>
<tr><td>Main project</td><td></td></tr>
</table>
</td></tr>
</table>

features:	
Positions held:	
Activities performed:	

11.7. TQ_5: Bidder's Total Responsibility Certificate

<<<<To be printed on bidder company's letterhead and signed by Authorized signatory>>

Date: dd/mm/yyyy

To,
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Sub : Selection of ***Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City*** – Authorization Letter from OEMs

Ref : Tender No: <No> Dated <DD/MM/YYYY>

Dear Sir,

This is to certify that we (M/s Bidder's Name) undertake the Total Responsibility for the defect free comprehensive Integrated Traffic Control System (ITCS) and subsequent ancillary activities as per the requirements specified in scope of work of the RFP for the duration mentioned in the RFP.

We also undertake that price that bided for the said scope of work are with appropriate assumptions and Total Responsiveness with fully undertake the minimum guidelines, scope of work and clauses that mentioned in the RFP for the deployment of the service.

Name of the Bidder :
Authorized Signatory :
Seal of the Organization :
Business Address :
Date :
Place :

Notes:

The mode of execution of the Total Responsibility Certificate 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.

11.8. OEM Selection Criteria

Component	Selection criteria for the OEM
CCTV Cameras	• Minimum supply base of 50,000 IP based cameras in India or globally as on bid submission date. • Should have been operational for at least 2 City Surveillance projects in India or globally of minimum 1000 IP based cameras each during last three years as on bid submission date. • The OEM should have its own RMA setup (or via authorized service partner / distributor) in India as on bid submission date.
ANPR Cameras and ANPR Solution	• Minimum installation base of 5,000 ANPR cameras in India or globally as on bid submission date. • Should have been operational for at least 2 City Surveillance projects in India or globally for supporting minimum 100 ANPR solutions in each in last three years as on bid submission date.
RLVD Solution	• Should have been operation for at least 10 City Surveillance projects in India or globally for covering minimum 50 lanes (cumulative for 10 projects) in last three years as on bid submission date.
Speed Detection Solution	• Should have been operation for at least 10 City Surveillance projects in India or globally for covering minimum 50 lanes (cumulative for 10 projects) in last three years as on bid submission date.
ONVIF Compliance	• All CCTV Cameras, and any video/image processing solution within overall project offering should be ONVIF Core Specification '2.X' or 'S' compliant and provide support for ONVIF profiles such as Streaming, Storage, Recording, Playback etc.

Additional OEM / Brand Compliance requirement:

a) With regards to above table, OEMs will certify the installation base and the project experience. This certificate shall be issued through the **Global Headquarters** and attested by the Indian office(As applicable). Authority shall verify the claim of OEMs by using publicly available reports. In case there is any doubt of gross negligence or providing erroneous or incorrect information/declaration, decision of Tendering Authority shall be final and binding upon the Bidder and OEM. Also, in such cases, No representation/further correspondence with OEM/Bidder shall be entertained.

b) For above mentioned components, authorised registered service/support centre should be in operation or should be established in India within 30 days of award of contract. The Bidder should submit an undertaking from the OEM (from Global headquarters/India office as applicable) to that effect.

c) Should comply the amended the General Financial Rules 2017 to enable imposition of restrictions on bidders/OEMs from countries which share a land border with India on grounds.

12. Commercial Bid Format & Instructions

<<To be printed on letter head of Prime/Sole Bidder and signed by Authorized signatory of Prime/Sole bidder>>

Date: dd/mm/yyyy

To
General Manager (Transit) ,
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India.

Subject: Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City

Reference: Tender No :<No> Dated<DD/MM/YYYY>

Dear Sir/ Madam,

We, the undersigned Bidders, having read and examined in detail all the bidding documents in respect of **"Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City"** do hereby propose to provide services as specified in the Bid Document referred above**.**

1. PRICE AND VALIDITY

   All the prices mentioned in our Tender are in accordance with the terms as specified in the Tender documents. All the prices and other terms and conditions of this Tender are valid for entire contract duration.

   We hereby confirm that our Tender prices include all taxes. Taxes are quoted separately under relevant sections, as specified in the Bid Document formats.

   We have studied the clause relating to Indian Income Tax and hereby declare that if any income tax, surcharge on Income Tax, Professional and any other corporate Tax in altercated under the law, we shall pay the same.

2. DEVIATIONS

   We declare that all the services shall be performed strictly in accordance with the Bid Documents and there are no deviations except for those mentioned in eligibility criteria documents, irrespective of whatever has been stated to the contrary anywhere else in our bid.

   Further we agree that additional conditions, if any, found in our bid documents, other than those stated in the deviation schedule in eligibility criteria, shall not be given effect to.

3. QUALIFYING DATA

   We confirm having submitted the information as required by you in your Instruction to Bidders. In case you require any other further information/documentary proof in this

regard before evaluation of our Tender, we agree to furnish the same in time to your satisfaction.

4. BID PRICE

   We declare that our Bid Price is for the entire scope of the work as specified in the Bid Document. The bid price at which the contract is awarded shall hold good for entire tenure of the contract. These prices are indicated in the subsequent sub-sections of this Section.

5. CONTRACT PERFORMANCE GUARANTEE BOND

   We hereby declare that in case the contract is awarded to us, we shall submit the contract Performance Bank Guarantee in the form prescribed in the Bid Document.

We hereby declare that our Tender is made in good faith, without collusion or fraud and the information contained in the Tender is true and correct to the best of our knowledge and belief.

We understand that our Tender is binding on us and that you are not bound to accept a Tender you receive. We confirm that no Technical deviations are attached here with this commercial offer.

Thanking you,

Yours faithfully,

(Signature of the Authorized Signatory)
Name
Designation
Seal.
Date:
Place:
Business Address:

12.1. General instructions

1. Bidder should provide all prices as per the prescribed format under this Annexure.
2. CAPEX should not be over 70% of total project cost (i.e., CAPEX + OPEX for 5 years). If any bidder quotes CAPEX as over 70% of total project cost, SSCDL/SMC shall cap CAPEX at 70% and shall pay 30%of total project cost in 20 equal instalments for five years post project Go-Live.
3. All the prices are to be entered in Indian Rupees (INR) only
4. The Prices mentioned in the Price Bid should include all applicable taxes & duties as applicable. The commercial evaluation will be done exclusive of taxes but inclusive of any duties applicable to the products which are not covered under GST. The bidder to quote the duties along with the rate of products proposed for commercial evaluation. The SI needs to account for all Out of Pocket expenses due to Boarding, Lodging and other related items.
5. SSCDL shall be entitled to deduct tax at source or any other taxes/ cess as may be applicable
6. It is mandatory to provide breakup of all Taxes, Duties and Levies wherever asked for.
7. SSCDL reserves the right to ask the SI to submit proof of payment against any of the taxes, duties, levies indicated.
8. The Unit Rate as mentioned in the following formats may be used for the purpose of 'Change Order' for respective items, if any. However, based on the market trends, SSCDL retains the right to negotiate this rate for future requirement
9. Quantities mentioned in the commercial formats are indicative in number. SSCDL may or may not procure the listed components in mentioned quantities. SSCDL has the rights to delete/ vary the quantities of any of the component before final implementation. Also, SSCDL reserves the right to remove any of the line components (as per BOQ provided).
10. However, the bidder is expected to provide the tax components in commercials. The payment of taxes to the selected bidder will be done on actuals.
11. Solution designing will be responsibility of bidder. Any additional components not quoted in Commercial bid but necessary for the solution / performance of the project, Bidder is required to provide the same to the SSCDL without any additional cost.
12. No escalations of prices will be considered under any circumstances.
13. The successful bidder shall not object to the upward or downward variation in quantities of any item. SSCDL/SMC may or may not procured certain items as mentioned in Price Bid, if required
14. The variation in individual item of quantities permitted, provided it shall not exceed ± 30% in individual item of quantities (Except Cables, Pipes, Other supporting accessories). The successful bidder shall not object to the upward or downward variation in quantities of any item within the variation limits.

15. Payment for additional quantities within the variation limit shall be made at tender rates and the tender rates shall be valid for entire duration of the contract.
16. No claim shall be entertained or become payable for price variation of additional quantities
17. Bidder shall be bound to give same or more % of discount on the list price of the OEMs on the future purchases (additional purchases within the contract period) by SSCDL. Bidder shall ensure that the future products supplied are of latest specifications as per the OEM roadmap.
18. For the purpose of evaluation of Commercial Bids, SSCDL shall make appropriate assumptions to arrive at a common Bid price for all the bidders. This however shall have no co-relation with the Contract value or actual payment to be made to the Bidder.
19. SSCDL also intends to utilize various rates obtained through this tender for requirements across various departments. Bidders are requested to factor this larger demand and give the best possible rate to SSCDL.
20. SI should refer Volume II of the Tender for details on the functional requirements of the system and the benchmark specifications for the items mentioned in the Commercial Formats.
21. SI has to provide the breakup of the price quoted against one line item/solution which incudes multiple line items under one solution whenever asked by SSCDL/SMC.
22. Line items mentioned in the Commercial Formats are for representation purpose and SI may propose alternate technology / solution (with proper justification). Bidders are required to suitably add line items / merge the cost components depending upon their proposed solution.
23. No escalations of prices will be considered under any circumstances.
24. Comprehensive warranty period is defined as 1 year post Project Go Live. However, the bidder shall be responsible for operating & maintenance for period between the Go Live of Request order and initiation of Warranty period (1 year post Go Live of all Request order)

12.2. Commercial Bid Format

[Note: Price Bid is to be submitted online only. The Price Bid if submitted physically along with Technical Bid leading to revelation of prices before the due date of opening of the Price Bid will lead to disqualification.]

12.2.1.Summary of Estimates for Surat ITCS Project

Summary of CAPEX			
#	**Annexure**	**Total Amount (Without GST) in INR**	**Total Amount (With GST) in INR**
1	Total amount of Schedule A		
2	Total amount of Schedule B		
3	**Total amount (1+2)**		

Summary of OPEX			
#	**Annexure**	**Total Amount (Without GST) in INR**	**Total Amount (With GST) in INR**
1	Total amount of Schedule C		
2	Total amount of Schedule D		
3	Total amount of Schedule E		
4	Total amount of Schedule F		
5	Total amount of Schedule G		
6	**Total amount (1+2+3+4+5)**		

12.2.2. Schedule A: CAPEX

Schedule A: ITCS CAPEX							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
A	**Adaptive Traffic Control System (ATCS)**						
1	SITC of ATCS Traffic Controller	Nos	194				
2	SITC of Countdown timer (input Voltage AC/DC operated)	Nos	1,570				
3	SITC of Vehicle Detector Camera	Nos	533				
4	SITC of Edge level Switches for traffic signal junction	Nos	177				
5	SETC of Galvanized Cantilever poles for traffic signals with complete mounting accessories, Pole junction box and civil works as required	Nos	325				
6	SETC of Galvanized Standard poles for traffic signals with complete mounting accessories, Pole junction box and civil works as required	Nos	975				
7	SITC of Traffic Light Aspects - RED (input Voltage AC/DC operated), with complete mounting accessories (including but not limited to aspect with LED based capsule, visor, bracket, frame works, wires, glands, pipes, etc.)	Nos	1,456				
8	SITC of Traffic Light Aspects - GREEN (input Voltage AC/DC operated), with complete mounting accessories (including but not limited to aspect with LED based capsule, visor, bracket, frame works, wires, glands, pipes, etc.)	Nos	3,424				
9	SITC of Traffic Light Aspects - AMBER (input Voltage AC/DC operated), with complete mounting accessories (including but not limited to aspect with LED based capsule, visor, bracket, frame works, wires, glands, pipes, etc.)	Nos	1,284				
10	SITC of Pedestrian lamp heads - Stop & Animated Walk Man (input Voltage AC/DC operated) with countdown timer with mounting accessories	Nos	856				

Schedule A: ITCS CAPEX							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
11	SITC of Amber Blinkers with complete mounting accessories for mounting on existing pole (including but not limited to aspect with LED based capsule, visor, bracket, frame works, wires, glands, pipes, etc.)	Nos	100				
12	SITC of Online UPS with complete mounting accessories and Batteries as required (1 hour power backup on full load)	Nos	152				
13	SITC of Field Junction Box of suitable size as per site requirements to house ATCS solution equipment (Traffic controller, edge level switch, Media convertor, LIU, Online UPS and Batteries, etc.)	Nos	194				
14	SLTC of ISI mark 50 mm inner dia. HDPE pipe as per IS: 4984:1995	Meter	2,360				
15	SLTC of ISI mark 90 mm inner dia. HDPE pipe as per IS: 4984:1995	Meter	13,040				
16	SLTC of ISI mark 90 mm outer dia. DWC pipe conforming IS:14930 (II) with necessary connecting accessories	Meter	23,600				
17	SLTC of ISI mark 120 mm outer dia. DWC pipe conforming IS:14930 (II) with necessary connecting accessories	Meter	8,850				
18	SLTC of 3 Core 2.5 Sqmm XLPE Multistrand Unarmored Copper Cable	Meter	1,000				
19	SLTC of 3 Core 2.5 Sqmm XLPE Multistrand Armored Copper Cable	Meter	14,000				
20	SLTC of 7 Core 1.5 Sqmm XLPE Multistrand Armored Copper Cable	Meter	47,000				
21	SLTC of 14 Core 1.5 Sqmm XLPE Multistrand Armored Copper Cable	Meter	47,000				
22	SLTC of 6 core Armored Optical Fiber cable with accessories required to connect junction switch with SMC/SSCDL OFC network	Meter	14,000				
23	SITC of 96 Core Fiber Optic Splice Closure with Splicing of all Cores	Nos	62				
24	SITC of 6 Core Fiber Optic Splice Closure with Splicing of all Cores	Nos	62				

Schedule A: ITCS CAPEX							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
25	SITC of press molded composite FRP Junction Box/cabinet of 300mmx200mmx135mm (Dip), 2mm thick with Bakelite connector strip of required size, DIN rail, locking arrangements with mounting accessories for Existing traffic signal with necessary cable termination	Nos	300				
26	Dismantling of Cantilever traffic signal Pole with complete mounting components, foundation and other accessories including transportation cost	Nos	50				
27	Dismantling of Standard traffic signal Pole with complete mounting components, foundation and other accessories including transportation cost	Nos	100				
28	Dismantling of Junction Box, Traffic Controller with foundation and other accessories including transportation cost	Nos	10				
29	Re-installation of Cantilever traffic signal Pole with complete mounting components, foundation and other accessories including transportation cost	Nos	50				
30	Re-installation of Standard traffic signal Pole with complete mounting components, foundation and other accessories including transportation cost	Nos	100				
31	Re-installation of Junction Box, Traffic Controller with foundation and other accessories including transportation cost	Nos	10				
32	Making Trench in Hard Murrum, Tar Road of suitable width and 90cm depth for laying any size of cables and backfilling the same and making the surface as normal ground	Meter	32,450				
33	Drilling the road without breaking the road surface for laying any size of cables (Horizontal Directional Drilling)	Meter	15,000				
B	**Traffic Surveillance system**						
34	SITC of Traffic Surveillance PTZ Cameras	Nos	24				

Schedule A: ITCS CAPEX							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
	System with Complete mounting accessories as required						
35	SETC of Poles for PTZ Cameras with complete mounting accessories, suitable size of Pole mounted junction box (to house Switch, Media convertor, LIU, Power supply adaptor, Fiber closure, etc.) and civil works as required	Nos	24				
36	SLTC of UTP CAT-6 Armored cable with all accessories required for Termination	Meter	2,400				
37	Media Convertor with complete mounting accessories	Nos	24				
C	**Traffic Enforcement system**						
39	SITC of ANPR System for capturing number plates at 2 arms (mid-block) and 4 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Locations	8				
40	SITC of ANPR System for capturing number plates at 2 arms (mid-block) and 6 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Locations	6				
41	SITC of Red-Light Violation Detection (RLVD) System for covering 3 arms and 2 lanes at each	Traffic Junctions	2				

Schedule A: ITCS CAPEX							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
	location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.						
42	SITC of Red-Light Violation Detection (RLVD) System for covering 4 arms and 2 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Traffic Junctions	8				
43	SITC of Red-Light Violation Detection (RLVD) System for covering 5 arms and 2 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Traffic Junctions	2				
44	SITC of Speed Detection System (SVDS) for covering 2 lanes in one direction with complete hardware including but not limited to ANPR cameras, external IR illuminator, non-intrusive speed sensor, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online	Locations	4				

Schedule A: ITCS CAPEX							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
	UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.						
45	SITC of Speed Detection System (SVDS) for covering 3 lanes in one direction with complete hardware including but not limited to ANPR cameras, external IR illuminator, non-intrusive speed sensor, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Locations	11				
C	**Application Software**						
46	Enterprise Management System (including SLA Management, Helpdesk Management, Network Management, Business Management Solution) (Pl give the break-up if different s/w required)	Lot	1				
47	Speed Detection System (Software + License) along with all modules to meet the functional requirements	Lot	1				
48	ANPR (Software + License) along with all modules to meet the functional requirements	Lot	1				
49	RLVD (Software + License) along with all modules to meet the functional requirements	Lot	1				
C	**Other Components**						
50	Integration Cost for integration of RLVD, ANPR, SVDS applications with existing E-Challan software/system	Lot	1				
51	SITC of Server rack along with all required accessories	No.	1				
52	SITC of Network rack along with all required accessories	No.	1				
53	Existing Datacenter infrastructure Migration at ICCC datacenter along with all required accessories (including re-installation, re-	Lot	1				

Schedule A: ITCS CAPEX							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
	commissioning, reconfiguration, transportation cost, etc.)						
54	SITCS of Workstation with screen/monitor along with all required accessories	Nos	5				
Total Amount							

12.2.3. Schedule B: CAPEX- Any Other Line Items

Schedule B: CAPEX-Any Other Line Items							
#	Item Description	Unit of Measurement	Qty.	Unit Amount (Without GST) in INR	Total Amount (Without GST) in INR	Applicable GST in (%)	Total Amount (With GST) in INR
a	b	c	d	e	f=e*d	g%	h=f*(g+100) %
1		Nos					
2		Nos					
3		Nos					
4		Nos					
5		Nos					
6		Nos					
7		Nos					
8		Nos					
9		Nos					
10		Nos					
Total Amount							

12.2.4. Schedule C: OPEX- New Infrastructure

Schedule C: Comprehensive Annual Maintenance (CAMC) and operations for New Infrastructure													
#	Item Description	Unit of Measurement	Qty.	Total 2nd Year Amount (Without GST) in INR	Total 2nd Year Amount (With GST) in INR	Total 3rd Year Amount (Without GST) in INR	Total 3rd Year Amount (With GST) in INR	Total 4th Year Amount (Without GST) in INR	Total 4th Year Amount (With GST) in INR	Total 5th Year Amount (Without GST) in INR	Total 5th Year Amount (With GST) in INR	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m=e+g+i+k	n=f+h+j+l
A	**Adaptive Traffic Control System (ATCS)**												
1	CAMC of New Traffic Signal Junctions (Traffic Controller, Cables, Vehicle detector cameras, Countdown timer, Field Junction Box, Poles, any other new components installed, etc.)	Traffic Junctions	118										
2	CAMC of upgraded Non BRTS corridor Traffic Signal Junctions (Traffic Controller, Countdown timer, Vehicle Detection Cameras, Field Junction Box, any other new components installed for upgradation, etc.)	Traffic Junctions	31										
3	CAMC of upgraded Phase 1 BRTS corridor Traffic Signal Junctions (Traffic controller, Countdown timer, Field Junction box, any other new components installed for upgradation, etc.)	Traffic Junctions	45										
4	CAMC of upgraded Phase-2 Extension BRTS Traffic Signal Junctions (Countdown Timer, any other new components installed for upgradation,	Traffic Junctions	39										

Schedule C: Comprehensive Annual Maintenance (CAMC) and operations for New Infrastructure													
#	Item Description	Unit of Measurement	Qty.	Total 2nd Year Amount (Without GST) in INR	Total 2nd Year Amount (With GST) in INR	Total 3rd Year Amount (Without GST) in INR	Total 3rd Year Amount (With GST) in INR	Total 4th Year Amount (Without GST) in INR	Total 4th Year Amount (With GST) in INR	Total 5th Year Amount (Without GST) in INR	Total 5th Year Amount (With GST) in INR	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m=e+g+i+k	n=f+h+j+l
	etc.)												
5	CAMC of Online UPS with Batteries	Nos	152										
B	**Traffic Surveillance system**												
6	CAMC of Traffic Surveillance PTZ Cameras System with Complete mounting accessories as required along with Poles & any other new components installed, etc.)	Nos	24										
C	**Traffic Enforcement system**												
7	CAMC of ANPR System for capturing number plates at 2 arms (mid-block) and 4 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Locations	8										

Schedule C: Comprehensive Annual Maintenance (CAMC) and operations for New Infrastructure													
#	Item Description	Unit of Measurement	Qty.	Total 2nd Year Amount (Without GST) in INR	Total 2nd Year Amount (With GST) in INR	Total 3rd Year Amount (Without GST) in INR	Total 3rd Year Amount (With GST) in INR	Total 4th Year Amount (Without GST) in INR	Total 4th Year Amount (With GST) in INR	Total 5th Year Amount (Without GST) in INR	Total 5th Year Amount (With GST) in INR	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m=e+g+i+k	n=f+h+j+l
8	CAMC of ANPR System for capturing number plates at 2 arms (mid-block) and 6 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Locations	6										
9	CAMC of Red-Light Violation Detection (RLVD) System for covering 3 arms and 2 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1	Traffic Junctions	2										

Schedule C: Comprehensive Annual Maintenance (CAMC) and operations for New Infrastructure													
#	Item Description	Unit of Measurement	Qty.	Total 2nd Year Amount (Without GST) in INR	Total 2nd Year Amount (With GST) in INR	Total 3rd Year Amount (Without GST) in INR	Total 3rd Year Amount (With GST) in INR	Total 4th Year Amount (Without GST) in INR	Total 4th Year Amount (With GST) in INR	Total 5th Year Amount (Without GST) in INR	Total 5th Year Amount (With GST) in INR	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m=e+g+i+k	n=f+h+j+l
	hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.												
10	CAMC of Red-Light Violation Detection (RLVD) System for covering 4 arms and 2 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Traffic Junctions	8										

Schedule C: Comprehensive Annual Maintenance (CAMC) and operations for New Infrastructure													
#	Item Description	Unit of Measurement	Qty.	Total 2nd Year Amount (Without GST) in INR	Total 2nd Year Amount (With GST) in INR	Total 3rd Year Amount (Without GST) in INR	Total 3rd Year Amount (With GST) in INR	Total 4th Year Amount (Without GST) in INR	Total 4th Year Amount (With GST) in INR	Total 5th Year Amount (Without GST) in INR	Total 5th Year Amount (With GST) in INR	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m=e+g+i+k	n=f+h+j+l
11	CAMC of Red-Light Violation Detection (RLVD) System for covering 5 arms and 2 lanes at each location with complete hardware including but not limited to ANPR cameras, external IR illuminator, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Traffic Junctions	2										
12	CAMC of Speed Detection System (SVDS) for covering 2 lanes in one direction with complete hardware including but not limited to ANPR cameras, external IR illuminator, non-intrusive speed sensor, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1	Locations	4										

Schedule C: Comprehensive Annual Maintenance (CAMC) and operations for New Infrastructure													
#	Item Description	Unit of Measurement	Qty.	Total 2nd Year Amount (Without GST) in INR	Total 2nd Year Amount (With GST) in INR	Total 3rd Year Amount (Without GST) in INR	Total 3rd Year Amount (With GST) in INR	Total 4th Year Amount (Without GST) in INR	Total 4th Year Amount (With GST) in INR	Total 5th Year Amount (Without GST) in INR	Total 5th Year Amount (With GST) in INR	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m=e+g+i+k	n=f+h+j+l
	hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.												
13	CAMC of Speed Detection System (SVDS) for covering 3 lanes in one direction with complete hardware including but not limited to ANPR cameras, external IR illuminator, non-intrusive speed sensor, Local Processing unit (LPU), Local recording device, Switches, Field Junction box to house all solution components, Networking components, Online UPS with batteries (1 hr. backup at full load), required power & data cables and suitable mounting infrastructure with civil work, etc.	Locations	11										
Total Amount													

12.2.5. Schedule D: OPEX- Any Other Line Items quoted in Schedule B

Schedule D: Comprehensive Annual Maintenance (CAMC) and operations for Any Other Line Items quoted in Schedule B													
#	Item Description	Unit of Measurement	Qty.	Total 2nd Year Amount (Without GST) in INR	Total 2nd Year Amount (With GST) in INR	Total 3rd Year Amount (Without GST) in INR	Total 3rd Year Amount (With GST) in INR	Total 4th Year Amount (Without GST) in INR	Total 4th Year Amount (With GST) in INR	Total 5th Year Amount (Without GST) in INR	Total 5th Year Amount (With GST) in INR	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m=e+g+i+k	n=f+h+j+l
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
Total Amount													

12.2.6. Schedule E: OPEX- Existing Infrastructure

Schedule E: Comprehensive Annual Maintenance (CAMC) and operations for Existing Infrastructure															
#	Item Description	Unit of Measurement	Qty	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
A	**ATCS infrastructure**														
1	CAMC of existing Non BRTS Junctions traffic signals (Poles, Cables, Aspects, Pedestrian, etc.)	Traffic Junctions	31												
2	CAMC of existing Phase 1 BRTS corridor Traffic Signals (Poles, Cables, Aspects, Pedestrian, Vehicle detector cameras, etc.)	Traffic Junctions	45												
3	CAMC of existing Phase 2 Ext. BRTS corridor Traffic Signals (Traffic Controller, Aspects, Pedestrian, Poles, Cable, Vehicle detector cameras, Field Junction Box, etc.)	Traffic Junctions	39												
4	CAMC of Existing Traffic Signals implemented by previous agency (Traffic Controller, Aspects, Pedestrian, Poles, Cable, Vehicle detector cameras etc.)	Traffic Junctions	43												
5	CAMC of Countdown timer (CDT)	Nos	328												

Schedule E: Comprehensive Annual Maintenance (CAMC) and operations for Existing Infrastructure															
#	Item Description	Unit of Measurement	Qty	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
6	CAMC of Pedestrian lamp heads - Stop & Animated Walk Man with countdown timer with mounting accessories	Nos	302												
7	CAMC of UPS with Batteries	Nos	124												
8	CAMC of Field Junction Box/Cabinets	Nos	180												
9	CAMC of Edge level Switches for junction	Nos	111												
B	**ITS infrastructure**														
10	CAMC of Traffic Surveillance PTZ Cameras System (PTZ cameras, Mounting structure, Networking components, etc.)	Nos	26												
11	CAMC of ANPR System implemented by previous agency for capturing number plates at 2 arms and 4 lanes at each traffic junction with complete hardware and accessories (ANPR cameras, Mounting Structure, external IR illuminator, Field Junction box, etc.),	Locations	3												

Schedule E: Comprehensive Annual Maintenance (CAMC) and operations for Existing Infrastructure															
#	Item Description	Unit of Measurement	Qty	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
12	CAMC of Variable Message Signboard system implemented by previous agency (Including all components available at site such as VMS board, Controller, Mounting Structure, Field Junction Box, UPS with Battery, Vehicle detection Camera, cable, etc.)	Locations	3												
C	**Datacenter Infrastructure**														
13	CAMC of Existing ATCS Application software CDAC-TraMM Co-Si-Cost	Lot	1												
14	Video Management Application software (Client License- 86 nos.)	Lot	1												
15	Primary Storage (in TB)	TB	60												
16	Secondary Storage (in TB)	TB	285												
17	Backup Storage (in TB)	TB	50												
18	Application Servers	Nos	7												
19	Anti-virus Software	No.	1												
20	Core Router	Nos	2												
21	L3 Switches	Nos	2												

Schedule E: Comprehensive Annual Maintenance (CAMC) and operations for Existing Infrastructure															
#	Item Description	Unit of Measurement	Qty	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
22	Firewall	No.	1												
23	Core Switch	Nos	2												
24	Racks (Caged)	Nos	2												
Total Amount															

12.2.7. Schedule F: OPEX - Application Software

Schedule E: Comprehensive Annual Maintenance (CAMC) and operations for Application Software															
#	Item Description	Unit of Measurement	Qty	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
A	**Application Software**														
1	Enterprise Management System (including SLA Management, Helpdesk Management, Network Management, Business Management Solution) (Pl give the	Lot	1												

Schedule E: Comprehensive Annual Maintenance (CAMC) and operations for Application Software															
#	Item Description	Unit of Measurement	Qty	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
	break-up if different s/w required)														
2	Speed Detection System (Software + License) along with all modules to meet the functional requirements	Lot	1												
3	ANPR (Software + License) along with all modules to meet the functional requirements	Lot	1												
4	RLVD (Software + License) along with all modules to meet the functional requirements	Lot	1												
Total Amount															

12.2.8. Schedule G: Network Connectivity

Schedule G: Comprehensive Annual Maintenance (CAMC) and operations for Network Connectivity															
#	Item Description	Location	Proposed Bandwidth (Bidder to specify Bandwidth in Mbps)	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
A	**Network Connectivity**														
1	Connectivity Cost for ATCS junctions to ICCC/ITMAC	110													
2	Connectivity Cost from Traffic Surveillance Cameras to ICCC/ITMAC	22													
3	Connectivity Cost from ANPR locations to ICCC/ITMAC - 2 arm 4 lanes	6													
4	Connectivity Cost from ANPR locations to ICCC/ITMAC- 2 arm 6 lanes	2													
5	Connectivity Cost from RLVD at Traffic	1													

Schedule G: Comprehensive Annual Maintenance (CAMC) and operations for Network Connectivity															
#	Item Description	Location	Proposed Bandwidth (Bidder to specify Bandwidth in Mbps)	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
	junctions to ICCC/ITMAC - 3 arm 2 lanes														
6	Connectivity Cost from RLVD at Traffic junctions to ICCC/ITMAC- 4 arm 2 lanes	5													
7	Connectivity Cost from RLVD at Traffic junctions to ICCC/ITMAC - 5 arm 2 lanes	1													
8	Connectivity Cost from SVDS locations to ICCC/ITMAC - 2 lanes	4													
9	Connectivity Cost from SVDS locations to ICCC/ITMAC - 3 lanes	4													
10	Aggregation														

Schedule G: Comprehensive Annual Maintenance (CAMC) and operations for Network Connectivity															
#	Item Description	Location	Proposed Bandwidth (Bidder to specify Bandwidth in Mbps)	Total 1st Year Amount (Without GST) in INR	Total 1st Year Amount (With Tax) (INR)	Total 2nd Year Amount (Without Tax) (INR)	Total 2nd Year Amount (With Tax) (INR)	Total 3rd Year Amount (Without Tax) (INR)	Total 3rd Year Amount (With Tax) (INR)	Total 4th Year Amount (Without Tax) (INR)	Total 4th Year Amount (With Tax) (INR)	Total 5th Year Amount (Without Tax) (INR)	Total 5th Year Amount (With Tax) (INR)	Total Amount for 5 years (Without GST) in INR	Total Amount for 5 years (With GST) in INR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o=e+g+i+k+m	p=f+h+j+l+n
	Bandwidth at ICCC/ITMAC	1													
11	Connectivity cost from ICCC/ITMAC to Police Command Center	1													
12	4G GSM Connectivity Cost from Variable Message Signboards to ICCC/ITMAC	3													
Total Amount															

13. Annexures

13.1. Format for Bank Guarantee for Bid Security (Earnest Money Deposit)

(To be printed on Rs. 300/- Stamp Paper)

This Deed of Guarantee is made on this _____day of _____, 2022 at _____ by _____ a _____ Bank and having its Head Office/Registered Office at _____ and a Branch Office at _____, Surat (hereinafter referred to as "the Bank" or "the Guarantor", which expression shall unless it be repugnant to the subject or context hereof be deemed to include its successors and assigns) in favour of Surat Smart City Development Ltd (SSCDL),having its Registered Office at _____ (hereinafter referred to as "Authority" which expression shall unless it be repugnant to the subject or context hereof be deemed to include its successors and assigns).

WHEREAS, the AUTHORITY undertook the process of competitive bidding in order to select the most desirable firm/company for Implementation of Integrated Traffic Control System (ITCS) in Surat City which purpose AUTHORITY issued a RFP document inviting Bids from the Bidders;

WHEREAS, [name of Bidder] (hereinafter called "the Bidder") has submitted his Bid dated [date] for the execution of the Works (hereinafter called "the Bid").

In the event of any breach or non-performance of the following terms and conditions contained in the Tender document:

(1)If the Bidder withdraws or modifies his Bid during the period of Bid validity specified in the Tender; or

(2) If the Bidder refuses to accept the correction of errors in his Bid; or

(3) If the Bidder submits a conditional Bid which would affect unfairly the competitive provision of other Bidders who submitted substantially responsive Bids and/or is not accepted by AUTHORITY, or

(4) If the Bidder, having been notified of the acceptance of his Bid by the AUTHORITY during the period of Bid validity and the bidder fails or refuses to execute the Agreement in accordance with the Tender documents;

(5) If the bidder engages in fraudulent or corrupt practices

The Guarantor agrees absolutely, irrevocably and unconditionally guarantees and undertakes to pay to AUTHORITY a sum of Indian Rupees ..... (Amount of EMD in INR) without any protest or demur and upon receipt of first written demand from AUTHORITY, without having to substantiate his demand, provided that in his demand AUTHORITY will note that the amount claimed by him is due to him owing to the occurrence of any one or more of the conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____ (180 days) days beyond the original validity period for the bid or as it may be extended by the bidder on a written

request by AUTHORITY, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

The jurisdiction in relation to this Guarantee shall be the Courts at Surat and Indian Law shall be applicable.

The claim in respect of this Bank Guarantee shall be admissible at any of our Surat Branches and such Bank Guarantee is encashable at Surat Branch.

IN WITNESS WHEREOF the Guarantor has executed this Guarantee on this _____ day of _____and year first herein above written.

Signed and delivered by the

above named _____Bank by

its Authorized Signatory as authorized by

Board Resolution passed on _____/

Power of Attorney dated [.....]

_____

Authorized Signatory

Name :

Designation:

In the presence of:

1.

2.

13.2. Format for Performance Bank Guarantee (PBG)

<< To be printed on Rs. 300/- Stamp Paper >>

IN CONSIDERATION OF bid document submitted by ..... Through .....for.....

SURAT Smart City Development Corporation (SSCDL) for Selection of Implementing Agency for Integrated Traffic Control System(ITCS) in Surat City (hereinafter referred to as the "said work") on the terms and conditions of the AGREEMENT/Letter of Intent ("LOI") dated the .....day of ..... 20... executed between SSCDL on the one part and the Company .....(Name of the Company) on the other part (hereinafter referred to as "the said AGREEMENT) and on the terms and conditions specified in the Contract, Form of Offer and Form of acceptance of Offer, true and complete copies of the offer submitted by the Company, the said Acceptance of Offer and the said AGREEMENT are annexed hereto.

The Company has agreed to furnish SSCDL in Guarantee of the Nationalized Bank for the sum of Rs <PBG Amount in Words and Figures> only which shall be the Security Deposit for the due performance of the terms covenants and conditions of the said AGREEMENT. We <Name of Bank> Bank Registered in India under Act and having one of our Local Head Office at <Address of Bank> do hereby guarantee to SSCDL in.

Due performance and observances by the Company of the terms covenants and conditions on the part of the Company contained in the said AGREEMENT, AND

Due and punctual payment by the Company to SSCDL of all sum of money, losses, damages, costs, charges, penalties and expenses that may become due or payable to SSCDL by or from the Company by reason of or in consequence of any breach, non-performance or default on the part of the Company of the terms covenants and conditions under or in respect of the said AGREEMENT.

AND FOR THE consideration aforesaid, we do hereby undertake to pay to SSCDL on demand without delay demur the said sum of Rs. ..... (Rupees ..... only) or such lesser sum, as may be demanded by SSCDL from us as and by way of indemnity on account of any loss or damage caused to or suffered by SSCDL by reason of any breach, non-performance or default by the Company of the terms, covenants and conditions contained in the said AGREEMENT or in the due and punctual payment of the moneys payable by the Company to SSCDL thereunder and notwithstanding any dispute or disputes raised by the Company in any suit or proceeding filed before the Court relating thereto our liability hereunder being absolute and unequivocal and irrevocable AND WE do hereby agree that –

The guarantee herein contained shall remain in full force and effect during the subsistence of the said AGREEMENT and that the same will continue to be enforceable till all the claims of SSCDL are fully paid under or by virtue of the said AGREEMENT and its claims satisfied or discharged and till SSCDL certifies that the terms and conditions of the said AGREEMENT have fully and properly carried out by the Company.

We shall not be discharged or released from liability under this Guarantee by reason of

any change in the Constitution of the Bank or

any arrangement entered into between SSCDL and the Company with or without our consent;

any forbearance or indulgence shown to the Company,

any variation in the terms, covenants or conditions contained in the said AGREEMENT;

any time given to the Company, OR

any other conditions or circumstances under which in a law a surety would be discharged.

Our liability hereunder shall be joint and several with that of the Company as if we were the principal debtors in respect of the said sum of Rs..... (Rupees ..... Only).

We shall not revoke this guarantee during its currency except with the previous consent of SSCDL in writing;

Provided always that notwithstanding anything herein contained our liabilities under this guarantee shall be limited to the sum of Rs..... (Rupees..... only) and shall remain in force until SSCDL certifies that the terms and conditions of the said AGREEMENT have been fully and properly carried out by the Company.

Bank hereby agrees and covenants that if at any stage default is made in payment of any instalment or any portion thereof due to SSCDL under the said AGREEMENT or if the Company fails to perform the said AGREEMENT or default shall be made in fulfilling any of the terms and conditions contained in the said AGREEMENT by the Company, the Bank shall pay to SSCDL demand without any demur, such sum as may by demanded, not exceeding Rs..... (Rupees.....) and that the Bank will indemnify and keep SSCDL indemnified against all the losses pursuant to the said AGREEMENT and default on the part of the Company. The decision of SSCDL that the default has been committed by the Company shall be conclusive and final and shall be binding on the Bank/Guarantor. Similarly, the decision of SSCDL as regards the Agreement due and payable by the Company shall be final and conclusive and binding on the Bank /Guarantor.

SSCDL shall have the fullest liberty and the Bank hereby gives its consent without any way affecting this guarantee and discharging the Bank/Guarantor from its liability hereunder, to vary or modify the said AGREEMENT or any terms thereof or grant any extension of time or any facility or indulgence to the Company and Guarantee shall not be released by reason of any time facility or indulgence being given to the Company or any forbearance act or omission on the part of SSCDL or by any other matter or think whatsoever which under the law, relating to sureties so releasing the guarantor and the Guarantor hereby waives all suretyship and other rights which it might otherwise be entitled to enforce.

That the absence of powers on the part of the Company or SSCDL to enter into or execute the said AGREEMENT or any irregularity in the exercise of such power or invalidity of the said AGREEMENT for any reason whatsoever shall not affect the liability of the Guarantor/Bank and binding on the bank notwithstanding any abnormality or irregularity,

The Guarantor agrees and declares that for enforcing this Guarantee by <SSCDL> against it, the Courts at Surat only shall have exclusive jurisdiction and the Guarantor hereby submits to the same

1.....

2.....

Being respectively the Director of the Company, who in token thereof, has hereto set his respective hands in the presence of –

1.....

2.....

13.3. Approved List of Banks

Under this contract, wherever the contractor is required to submit F.D.R., bank guarantee, etc. against payment towards any deposit or advance e.g., EMD,SD, etc. Such F.D.R, bank guarantees, etc. shall be produced from any one of the following Nationalized Bank as listed below:

1. AU Small Finance Bank
2. Ahmedabad Mercantile Co-Operative Bank Limited
3. Axis Bank
4. City Union Bank
5. DBS Bank India Limited
6. DCB Bank
7. Equitas Small Finance Bank
8. Federal Bank
9. HDFC Bank
10. ICICI Bank
11. IndusInd Bank
12. Kalupur Commercial Co-Operative Bank Limited
13. Kotak Mahindra Bank
14. Nutan Nagrik Sahakari Bank Limited
15. Rajkot Nagarik Sahakari Bank Limited
16. RBL Bank
17. Saraswat Co-Operative Bank

18. Saurashtra Gramin Bank
19. Standard Chartered Bank
20. Tamilnadu Mercantile Bank
21. The Gujarat State Co-Operative Bank
22. The Mehshana Urban Co-Operative Bank Limited
23. The Surat District Co-Operative Bank
24. The Surat Peoples Co-Operative Bank
25. Ujjivan Small Finance Bank

13.4. Master Service Agreement

Draft of contract agreement, subject to change at the time of execution)

(To be printed on Rs. 300/- Stamp Paper)

Passport size Photo of Authorized Signatory with crossed Sign and Seal.

MASTER SERVICE AGREEMENT

FOR

NAME OF WORK	**:**
CONTRACTOR'S NAME	**:**
TENDER AMOUNT	**:**
LETTER OF INTENT (LoI) NO. & DATE	**:**
SANCTIONING AUTHORITY	**:**

This **AGREEMENT** is made at 1st Floor, South Zone Office, Surat Municipal Corporation, Opp. Satyanagar, Udhna, Surat -394210, Gujarat, India on this _____ day of _____, 20_____,

BETWEEN

(1) Surat Smart City Development Limited, a company incorporated under the Companies Act, 2013 with CIN : U74999GJ2016PLC091579 and having its Registered Office at 1st Floor, South Zone Office, Surat Municipal Corporation, Opp. Satyanagar, Udhna, Surat-394210, Gujarat, India (hereinafter called **"the Company"** or **"the SPV"** or **"the Client"** or **"SSCDL"** which expression unless repugnant to the context therein, shall include its successors, administrators, executors and permitted assignees) of the **FIRST PART** represented by **CEO / Director / GM (IT) of the Company**

AND

(2) _____ a company registered under the Companies Act, 1956, having its registered office at _____ hereinafter referred to as "**Systems Integrator**" or "**SI**" or "**Vendor**" or "**Contractor**", (which expression unless repugnant to the context therein, shall include its successors, administrators, executors and permitted assignees), of the **SECOND PART** as represented by _____ of the _____,

WHEREAS party to the First part is established as the 'Special Purpose Vehicle' (SPV) under the Smart City Program of the Government of India, and based on the submission and approval of the Smart City Proposal (SCP) has authority to execute the projects so approved within the framework of the Smart City Mission Statement and Guidelines issued by the Ministry of Urban Development in June 2015 (hereinafter referred as "Guidelines");

AND WHEREAS RFP for one of the approved projects under SCP related to Selection of Implementing Agency for Integrated Traffic Control System in Surat (hereinafter referred as the "ITCS Project.**" or** "**the Project**") was published by SSCDL on _____, to seek services of a reputed IT firm as a System Integrator for **Implementing Agency for Integrated Traffic Control System in Surat**;

And whereas M/s. ---------- has submitted its proposal for "***Selection of Implementation Agency for Integrated Traffic Control System (ITCS) in Surat City"***;

AND whereas SSCDL has selected M/s.....as successful bidder and issued Letter of Intent No. ..... dated .....to the successful bidder who in turn signed and returned the same as a token of acceptance of Letter of Intent. As required, the System Integrator has furnished Security Deposit of Rs. _____ (_____) as Bank Guarantee No.

_____, dated _____, _____for performance of the Project.

AND Whereas the SSCDL has adopted the System Integrator's tender for the project through the Project Committee established by the Board of Directors of the Company (hereinafter referred as "The Project Management Committee") vide Resolution No._____ having of tender Amount of Rs. _____ Ps (_____)

And whereas SSCDL and M/s. ---------- have decided to enter into this Agreement on the terms and conditions stipulated hereinafter.

NOW, THEREFORE, in consideration of the premises covenants and promises contained herein and other good and valuable considerations, the receipt and adequacy of which is hereby acknowledged, the parties intending to be bound legally, IT IS HEREBY AGREED between the Parties as follows:

Definitions

In this Agreement, the following terms shall be interpreted as indicated, -

"SSCDL" means Surat Smart City Development Limited;
"SPV" means Special Purpose Vehicle
"SCP" means Smart City Proposal

"Contract" means this Agreement entered into between SSCDL and the Systems Integrator including all attachments and annexure thereto and all documents incorporated by reference therein;

"Systems Integrator" means M/s. ---------- interchangeably referred to as "SI" in the contract; and

"RFP" means the Tender Published by SSCDL (Ref. No. ------) and the subsequent Corrigenda / Clarifications issued.

"Go Live or successful completion of implementation of the project" date means the date on which the proposed project stream becomes operational after successful conclusion of all acceptance tests to the satisfaction of SSCDL.

"Deliverable" means any action / output generated by the SI while discharging their contractual obligations. This would include information and all the other services rendered as per the scope of work and as per the SLAs.

"Assets" refer to all the hardware / Software / furniture / data / documentations / manuals / catalogs / brochures / or any other material procured, created or utilized by the SI for the Surat City 'Smart Elements' Project.

"Guidelines" refer to the set of instructions given by Ministry of Urban Development regarding Smart City Mission

Interpretation

The following documents shall be deemed to form part and considered as part of this agreement. Viz. this Agreement;

Information and the instructions, Scope of Services, Service Level Agreement, Terms and Conditions, etc. in the RFP document and subsequent Addenda and Corrigenda document.

Relevant contents filled-in, tendered, mentioned by the SI as part of "Technical Proposal" and "Commercial Proposal" submitted in response to the RFP and subsequent clarifications and/or undertakings submitted by the SI.

Term of the Agreement

This agreement shall come into force and effect from the date of execution by both parties. The term of this agreement shall be a period of 5 years from the date of Go-Live of Project including warranty & comprehensive operation & maintenance (O&M) support .

In the event of implementation period getting extended beyond implementation timelines, for reasons not attributable to the Systems Integrator, SSCDL reserves the right to extend the term of the Agreement by corresponding period to allow validity of contract for 5 years from the date of successful completion of implementation of all the project components. (Note: Delay caused due to any reason not in control of the SI would not be attributed to the project period.)

SSCDL also reserves the right to extend the contract at its sole discretion for additional duration, beyond the 5 years of post-implementation period. Terms and conditions of such an extension shall be prepared by SSCDL and finalized in mutual discussion with the SI.

Work Completion timelines and Fees

The work completion timeline is as per section 9 of the RFP and Subsequent Addendum & Corrigenda.

Payment Terms The Payment terms is as per section 9 of the RFP and subsequent Addendum & Corrigendum.

Timeline for Project Execution

The Timeline for ITCS Project is as per section 9 of the RFP and subsequent Addendum & Corrigendum

Scope Extension

SSCDL reserves right to extend the scope of services for the price & timelines as given in RFP. The SLAs applicable to this Contract shall be liable for the additional items too.

Service Level Agreement (SLA)

System Integrator is required to comply with the SLA as mentioned in Section 8 of the RFP and subsequent Addendum & corrigendum.

Insurance

The bidder will be required to undertake the insurance for all components of the Project which has been procured under this RFP as well as existing systems and infrastructure as mentioned in volume II.

i. Insurance during the Contract Period

The 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:

- Hardware/ Structure delivered and installed to the extent possible at the replacement value with Authority as beneficiary.
- Fire and allied natural calamities for the project limited to the scope of supply at replacement value with the Authority as beneficiary;
- System Integrator's all risk insurance with the Authority as co-beneficiary;
- Comprehensive third party liability insurance with the SMC/SSCDL as co-beneficiary;
- Workmen's compensation insurance with the SMC/SSCDL as co-beneficiary;
- Any other insurance that may be necessary to protect the 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 (e) with the Authority as beneficiary/co-beneficiary;

ii. Evidence of Insurance Cover

- The System Integrator shall, from time to time, provide to the Authority copies of all insurance policies (or appropriate endorsements, certifications or other satisfactory evidence of insurance) obtained by it in accordance with System Integrator Agreement.
- If System Integrator shall fail to effect and keep in force the insurance for which it is responsible pursuant hereto , Authority shall have the option to take or keep in force any such insurance, and pay such premium and recover all costs thereof from System Integrator.

iii. Application of Insurance Proceeds

- All moneys received under insurance policies shall be promptly applied by the 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.
- The 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.
- For insurance policies where the Authority is the beneficiary and where it received the

insurance proceeds, only such sums as are required from the insurance proceeds for restoration, repair and renovation of the Project .

iv. Validity of Insurance Cover

The 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 the Authority for each year/policy period. If at any time the System Integrator fails to purchase, renew and maintain in full force and effect, any and all of the Insurances required under this System Integrator Agreement, the Authority may at its option purchase and maintain such insurance and all sums incurred by the Authority therefore shall be reimbursed by the System Integrator forthwith on demand, failing which the same shall be recovered by the Authority by encashment of Performance Security, exercising right of set off or otherwise

Use & Acquisition of Assets during the term

System Integrator shall take all reasonable & proper care of the entire hardware & software, network or any other information technology infrastructure components used for the project & other facilities leased/owned by the system integrator exclusively in terms of the delivery of the services as per this Agreement (hereinafter the "Assets" which include all the hardware / Software / furniture / data / documentations / manuals / catalogs / brochures / or any other material procured, created or utilized by the SI or the SSCDL for the Surat Project) in proportion to their use & control of such Assets which will include all upgrades/enhancements & improvements to meet the needs of the project arising from time to time; Note: Hardware upgrades outside the RFP scope would not be part of the original contract and would be catered through change request. Assets would be owned by the SSCDL however, the System Integrator would be custodian of the same during the entire contract period and would take care of all wear-tear, insurance, theft etc. so that the SLAs are not affected.

Maintain sufficient spare inventory at all times, for all items of importance;

keep all the tangible Assets in good & serviceable condition (reasonable wear & tear excepted) &/or the intangible Assets suitably upgraded subject to the relevant standards as stated in of the RFP to meet the SLAs mentioned in the contract & during the entire term of the Agreement.

ensure that any instructions or manuals supplied by the manufacturer of the Assets for use of Assets & which are provided to the system integrator will be followed by the System integrator & any person who will be responsible for the use of the Asset;

take such steps as may be recommended by the manufacturer of the Assets & notified to the system integrator or as may be necessary to use the Assets in a safe manner;

provide a well-prepared documentation for users in the manual, a clear plan for training, education & hand holding the users & shall form part of hand holding phase until bringing up the users to use software solution with speed & efficiency;

To the extent that the Assets are under the control of the system integrator, keep the Assets suitably housed & in conformity with any statutory requirements from time to time applicable to them,

Provide and facilitate access to SSCDL or its nominated agencies & any persons duly authorized by him/her to enter any land or premises on which the Assets are for the time being sited so as to inspect the same, subject to any reasonable requirements;

Not, knowingly or negligently use or permit any of the Assets to be used in contravention of any statutory provisions or regulation or in any way contrary to law;

Use the Assets exclusively for the purpose of providing the Services as defined in the contract;

Use the Assets only in accordance with the terms hereof & those contained in the SLAs;

Maintain standard forms of comprehensive insurance including liability insurance, system & facility insurance & any other insurance for the Assets, data, software, etc in the joint names of SSCDL & the System Integrator, where SI shall be designated as the 'loss payee' in such insurance policies; SI shall be liable to pay premium for the insurance policy & shall ensure that each & every policy shall keep updated from time to time.

Ensure the integration of the software with hardware to be installed and the current Assets in order to ensure the smooth operations of the entire solution architecture to provide efficient services to SSCDL of this Project in an efficient and speedy manner; &

Obtain a sign off from SSCDL or its nominated agencies at each stage as is essential to close each of the above considerations.

Ownership of the Assets shall vest with SSCDL from the date of Supply of the project . Ownership of any asset, created during the contractual period, shall also vest with SSCDL upon creation of such asset. System Integrator shall not use SSCDL data or assets to provide services for the benefit of any third party, as a service bureau or in any other manner. On expiry of the contract, SI shall be required to handover all the tangible and non-tangible assets in working condition. In case any assets are found to be damaged at the time of handover, SI is required to repair/replace the same at no cost to SMC/SSCDL.

Security and safety

- The System Integrator will comply with the directions issued from time to time by SSCDL and the standards related to the security and safety in so far as it applies to the provision of the Services.
- System Integrator shall also comply with the information technology security and standard policies in force from time to time by SSCDL/SMC or as recommended by any statutory authority.
- System Integrator shall use reasonable endeavors to report forthwith in writing to all the partners / contractors about the civil and criminal liabilities accruing due to by unauthorized access (including unauthorized persons who are employees of any Party) or interference with SSCDL's data, facilities or Confidential Information.

- The System Integrator shall upon reasonable request by SSCDL or his/her nominee(s) participate in regular meetings when safety and information technology security matters are reviewed.
- System Integrator and its partners / sub-contractors shall promptly report in writing to each other and SSCDL any act or omission which they are aware that could have an adverse effect on the proper conduct of safety and information technology security at SSCDL's Facilities.

Indemnity

The System Integrator agrees to indemnify and hold harmless SSCDL, its officers, employees and agents(each a “Indemnified Party”) promptly upon demand at any time and from time to time, from and against any and all losses , claims, damages, liabilities, costs (including reasonable attorney’s fees and disbursements) and expenses (collectively, “Losses”) to which the Indemnified Party may become subject, in so far as such losses directly arise out of, in any way relate to, or result from

any mis-statement or any breach of any representation or warranty made by the System Integrator or

The failure by the System Integrator to fulfil any covenant or condition contained in this Agreement, including without limitation the breach of any terms and conditions of this Agreement by any employee or agent of the System Integrator. Against all losses or damages arising from claims by third Parties that any Deliverable (or the access, use or other rights thereto), created System Integrator pursuant to this Agreement, or any equipment, software, information, methods of operation or other intellectual property created by System Integrator or sub-contractors pursuant to this Agreement, (I) infringes a copyright, trade mark, trade design enforceable in India, (II) infringes a patent issued in India, or (III) constitutes misappropriation or unlawful disclosure or use of another Party's trade secretes under the laws of India (collectively, "Infringement Claims"); provided, however, that this will not apply to any Deliverable (or the access, use or other rights thereto) created by (A) "Implementation of Project by itself or through other persons other than System Integrator or its sub-contractors; (B) Third Parties (i.e., other than System Integrator or sub-contractors) at the direction of SSCDL, or

any compensation / claim or proceeding by any third party against SSCDL arising out of any act, deed or omission by the System Integrator or

Claim filed by a workman or employee engaged by the System Integrator for carrying out work related to this Agreement. For the avoidance of doubt, indemnification of Losses pursuant to this section shall be made in an amount or amounts sufficient to restore each of the Indemnified Party to the financial position it would have been in had the losses not occurred.

Any payment made under this Agreement to an indemnity or claim for breach of any provision of this Agreement shall include applicable taxes.

Third Party Claims

a. Subject to Sub-clause (b) below, the System Integrator (the Indemnifying Party) shall indemnify and hold harmless SSCDL and all its employees and authorized agents (the "Indemnified Party") from and against all losses, third party claims, litigation and damages on account of bodily injury, death or damage to tangible personal property arising in favor or any person, corporation or other entity (including the Indemnified Party) attributable to the Indemnifying Party's performance or non-performance under this Agreement or the SLAs.

b. The indemnities set out in Sub-clause (a) above shall be subject to the following conditions:

   i) The Indemnified Party, as promptly as practicable, informs the Indemnifying Party in writing of the claim or proceedings and provides all relevant evidence, documentary or otherwise;

   ii) The Indemnified Party shall, at the cost and expenses of the Indemnifying Party, give the Indemnifying Party all reasonable assistance in the defense of such claim including reasonable access to all relevant information, documentation and personnel. The indemnifying party shall bear cost and expenses and fees of the Attorney on behalf of the Indemnified Party in the litigation, claim.

   iii) if the Indemnifying Party does not assume full control over the defense of a claim as provided in this Article, the Indemnifying Party may participate in such defense at its sole cost and expense, and the Indemnified Party will have the right to defend the claim in such manner as it may deem appropriate, and the cost and expense of the Indemnified Party will be borne and paid by the Indemnifying Party.

   iv. The Indemnified Party shall not prejudice, pay or accept any proceedings or claim, or compromise any proceedings or claim, without the written consent of the Indemnifying Party;

   v. system integrator hereby indemnify & hold indemnified the SSCDL harmless from & against any & all damages, losses, liabilities, expenses including legal fees & cost of litigation in connection with any action, claim, suit, proceedings as if result of claim made by the third party directly or indirectly arising out of or in connection with this agreement.

   vi. all settlements of claims subject to indemnification under this Article will: (a) be entered into only with the consent of the Indemnified Party, which consent will not be unreasonably withheld & include an unconditional release to the Indemnified Party from the claimant for all liability in respect of such claim; & (b) include any appropriate confidentiality agreement prohibiting disclosure of the terms of such settlement;

   Viii. the Indemnified Party shall take steps that the Indemnifying Party may reasonably require to mitigate or reduce its loss as a result of such a claim or proceedings; &

   ix. In the event that the Indemnifying Party is obligated to indemnify an Indemnified Party pursuant to this Article, the Indemnifying Party will, upon payment of such

indemnity in full, be subrogated to all rights & defenses of the Indemnified Party with respect to the claims to which such indemnification relates;

x. in the event that the Indemnifying Party is obligated to indemnify the Indemnified Party pursuant to this Article, the Indemnified Party will be entitled to invoke the Performance Bank Guarantee, if such indemnity is not paid, either in full or in part, & on the invocation of the Performance Bank Guarantee, the Indemnifying Party shall be subrogated to all rights & defenses of the Indemnified Party with respect to the claims to which such indemnification relates.

Publicity

Any publicity by the SI in which the name of SSCDL is to be used should be done only with the explicit written permission of the CEO, SSCDL.

Warranties

a. The System Integrator warrants and represents to SSCDL that:

It has full capacity and authority and all necessary approvals to enter into and to perform its obligations under this Agreement;

This Agreement is executed by a duly authorized representative of the System Integrator;

It shall discharge its obligations under this Agreement with due skill, care and diligence so as to comply with the RFP requirements including service level agreement.

b. In the case of the SLAs, the System Integrator warrants and represents to SSCDL, that:

- the System Integrator has full capacity and authority and all necessary approvals to enter into and perform its obligations under the SLAs and to provide the Services;
- The SLAs have been executed by a duly authorized representative of the System Integrator;
- The System Integrator is experienced in managing and providing works similar to the Services and that it will perform the Services with all due skill, care and diligence so as to comply with service level agreement;
- The Services will be provided and rendered by appropriately qualified, trained and experienced personnel as mentioned in the RFP;
- System Integrator has and will have all necessary licenses, approvals, consents of third Parties free from any encumbrances and all necessary technology, hardware and software to enable it to provide the Services;
- The Services will be supplied in conformance with all laws, enactments, orders and regulations applicable from time to time;
- System Integrator will warrant that the goods supplied under the contract are new, unused, of the most recent higher version /models and incorporate all recent

improvements in design and materials unless provided otherwise in the contract. The System Integrator further warrants that the goods supplied under this contract shall have no defects arising from design, materials or workmanship.

- The overall system design shall be such that there is no choking point / bottleneck anywhere in the system (end-to-end) which can affect the performance / SLAs.
- Subject to the fulfillment of the obligations of the System Integrator as provided for in sub clause (viii) above, in the event that such warranties cannot be enforced by SSCDL, the System Integrator will enforce such warranties on behalf of SSCDL and pass on to SSCDL, the benefit of any other remedy received in relation to such warranties.

c. Notwithstanding what has been stated elsewhere in this Agreement and the Schedules attached herein, in the event the System Integrator is unable to meet the obligations pursuant to the implementation of the Project, Operations and Maintenance Services and any related scope of work as stated in this Agreement and the Schedules attached herein, SSCDL will have the option to invoke the Performance Guarantee after serving a written notice of thirty (30) days on the system Integrator.

Force Majeure & Vandalism

In the event that any Damages to items due to Vandalism (physical Majeure attack by public, tampering of equipment by SMC / SSCDL staff or traffic police staff and damage due to accidents) or due to Force Majeure events (such as earthquake, fire, natural calamities, war, act of God) of any kind during Contract Period shall be the liability of SSCDL. In such case, SSCDL/Authority shall request the successful Bidder to repair/replace the damaged unit and reinstall the same. All costs towards the same shall be reimbursed by SSCDL/Authority to the successful Bidder less of insurance proceeds if need of replacement so arise then replacement shall be on tender rates only.

The System Integrator shall not be liable for forfeiture of its Performance Guarantee, imposition of liquidated damages or termination for default, if and to the extent that it's delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure. For purposes of this Clause, "Force Majeure" means an event beyond the "reasonable" control of the System Integrator, not involving the System Integrator's fault or negligence and not foreseeable. Such events may include Acts of God & acts of Government of India in their sovereign capacity.

For the SI to take benefit of this clause it is a condition precedent that the SI must promptly notify the SSCDL, in writing of such conditions and the cause thereof within 14 calendar days of the Force Majeure event arising. SSCDL, or the consultant / committee appointed by the SSCDL shall study the submission of the SI and inform whether the situation can be qualified one of Force Majeure. Unless otherwise directed by the SSCDL in writing, the SI shall continue to perform its obligations under the resultant Agreement as far as it is

reasonably practical, and shall seek all reasonable alternative means for performance of services not prevented by the existence of a Force Majeure event.

In the event of delay in performance attributable to the presence of a force majeure event, the time for performance shall be extended by a period(s) equivalent to the duration of such delay. If the duration of delay continues beyond a period of 30 days, SSCDL and the SI shall hold consultations with each other in an endeavor to find a solution to the problem.

Notwithstanding anything to the contrary mentioned above, the decision of the SSCDL shall be final and binding on the SI.

Resolution of Disputes

The SSCDL and the SI shall make every effort to resolve amicably, by direct informal negotiation, any disagreement or dispute arising between them under or in connection with the Agreement. If after 30 days from the commencement of such informal negotiations, the SSCDL and the SI are unable to resolve amicably such dispute, the matter will be referred to the Chairman, SSCDL, and his / her decision shall be final and binding to both.

Limitation of Liability towards SSCDL

The SI's liability under the resultant Agreement shall be determined as per the Law in force for the time being. The SI shall be liable to the SSCDL for loss or damage occurred or caused or likely to occur on account of any act of omission on the part of the SI and its employees, including loss caused to SMC / SSCDL on account of defect in goods or deficiency in services on the part of SI or his agents or any person / persons claiming through or under said SI. However, such liability of SI shall not exceed contract value.

This limitation of liability shall not limit the SI‟s liability, if any, for damage to Third Parties caused by the SI or any person or firm acting on behalf of the SI in carrying out the scope of work envisaged herein.

Conflict of Interest

A conflict of interest is any situation that might cause an impartial observer to reasonably question whether SI actions are influenced by considerations of your firm’s interest at the cost of Government.

The SI shall disclose to the SSCDL in writing, all actual and potential conflicts of interest that exist, arise or may arise (either for the Systems Integrator or its Team) in the course of performing Services as soon as it becomes aware of such a conflict. However, SI shall hold SSCDL's interest paramount, without any consideration for future work, and strictly avoid conflict of interest with other assignments.

Safety Regulation, Accident and Damage

The Bidder shall be responsible at his own cost in and relative to performance of the work and bidder to observe and to ensure observance by his Sub-contractors, agents and servants

of the provisions of Safety Code as hereinafter appearing and all fire, Safety and security regulations as may be prescribed by the Owner from time to time and such other Precautions, measures as shall be necessary and shall employ / deploy all equipment necessary to protect all works, materials, properties, structures, equipment, installations, communications and facilities whatsoever from damage, loss or other hazard whatsoever (including but not limited to fire and explosion) and shall during construction and other operations minimize the disturbance and inconvenience to the Owner, other bidders, the public and adjoining land and property owners and occupiers, and crops, trees and vegetation and shall indemnify and keep indemnified the One from and against all losses and damages and costs, charges and expenses and penalties, actions, claims, demands and proceedings whatsoever suffered or incurred by or against the Owner, as the case may be, virtue of any loss, alteration, displacement, disturbance or destruction or accident to any works materials, properties, structures, equipment, installations communications and facilities and land and property owners and occupiers and crops, trees and vegetation as aforesaid, with the intent that the Bidder shall be exclusively responsible for any accident, loss, damage, alteration, displacement, disturbance or destruction as aforesaid resultant directly or indirectly from any breach by the Bidder of his obligation aforesaid or upon any operation, act or omission of the bidder his Sub-contractor(s) or agent(s) or servant(s).

The Bidder's liabilities under Clause (a) and otherwise under the Contract shall remain unimpaired notwithstanding the existence of any storage cum erection or other insurance covering any risk, damage, loss or liability for which the Bidder is liable to the Owner in terms of the foregoing Sub-Clause or otherwise and / or in respect of which the Bidder has indemnified the Owner with the intent that notwithstanding the existence of such insurance, the Bidder shall be and remain fully liable for all liabilities and obligations under the contract and indemnified to the Owner, and the Owner shall not be obliged to seek recourse under such policy(ies) in preference to recourse against the Bidder or otherwise to exhaust any other remedy in preference to the remedies available to in under the Contract prior written approval of SSCDL. However, even if the work is sub-contracted / outsourced, the sole responsibility of the work shall lie with the SI. The SI shall be held responsible for any delay/error/non-compliance etc. of its sub-contracted vendor. The details of the sub-contracting agreements (if any) between both the parties would be required to be submitted to SSCDL.

Data Ownership

All the data created as the part of the project shall be owned by SSCDL. The SI shall take utmost care in maintaining security, confidentiality and backup of this data. Access to the data / systems shall be given by the SI only as per the IT Security Policy, approved by SSCDL. SSCDL / its authorized representative(s) shall conduct periodic / surprise security reviews and audits, to ensure the compliance by the SI Vendor to data / system security.

Intellectual Property Rights

A. For the customized solution developed for the project, IPR of the solution would belong exclusively to the SSCDL. The SI shall transfer the source code to SSCDL. SI shall also submit all

the necessary instructions for incorporating any modification / changes in the software and its compilation into executable / installable product. SSCDL may permit the SI, right to use the customized software for any similar project being executed by the same SI, with payment of reasonable royalty to SSCDL for the same.

B. Deliverables provided to SSCDL by System Integrator during the course of its performance under this Agreement, all rights, title and interest in and to such Deliverables, shall, as between System Integrator and SSCDL, immediately upon creation, vest in SSCDL. To the extent that the System Integrator Proprietary Information is incorporated within the Deliverables, System Integrator and its employees engaged hereby grant to SSCDL a worldwide, perpetual, irrevocable, non-exclusive, transferable, paid-up right and license to use, copy, modify (or have modified), use and copy derivative works for the benefit of and internal use of SSCDL.

Fraud and Corruption

SSCDL requires that SI must observe the highest standards of ethics during the execution of the contract. In pursuance of this policy, SSCDL defines, for the purpose of this provision, the terms set forth as follows:

"Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of SSCDL in contract executions.

"Fraudulent practice" means a mis-presentation of facts, in order to influence a procurement process or the execution of a contract, to SSCDL, and includes collusive practice among bidders (prior to or after Proposal submission) designed to establish Proposal prices at artificially high or non-competitive levels and to deprive SSCDL of the benefits of free and open competition.

"Unfair trade practices" means supply of services different from what is ordered on, or change in the Scope of Work which is given by the SSCDL in Volume II.

"Coercive Practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the execution of contract.

If it is noticed that the SI has indulged into the Corrupt / Fraudulent / Unfair / Coercive practices, it will be a sufficient ground for SSCDL for termination of the contract and initiate black-listing of the vendor.

Exit Management

Exit Management Purpose

This clause sets out the provisions, which will apply during Exit Management period. The Parties shall ensure that their respective associated entities carry out their respective obligations set out in this Exit Management Clause.

The exit management period starts, in case of expiry of contract, at least 6 months prior to the date when the contract comes to an end or in case of termination of contract, on the date when the notice of termination is sent to the SI. The exit management period ends on the date agreed upon by the SSCDL or Six months after the beginning of the exit management period, whichever is earlier.

Confidential Information, Security and Data

Systems Integrator will promptly on the commencement of the exit management period, supply to the SSCDL or its nominated agencies the following:

Information relating to the current services rendered and performance data relating to the performance of the services; Documentation relating to Project, Project's Intellectual Property Rights; any other data and confidential information related to the Project;
Project data as is reasonably required for purposes of the Project or for transitioning of the services to its Replacing Successful Bidder in a readily available format.
All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable the SSCDL and its nominated agencies, or its Replacing Vendor to carry out due diligence in order to transition the provision of the Services to SSCDL or its nominated agencies, or its Replacing Vendor (as the case may be).

Rights of Access to Information

At any time during the exit management period, the Successful Bidder will be obliged to provide an access of information to SSCDL and / or any Replacing Vendor in order to make an inventory of the Assets (including hardware / Software / Active / passive), documentations, manuals, catalogs, archive data, Live data, policy documents or any other material related to Project.

Exit Management Plan

Successful Bidder shall provide SSCDL with a recommended exit management plan ("Exit Management Plan") within 90 days of signing of the contract, which shall deal with at least the following aspects of exit management in relation to the SLA as a whole and in relation to the Project Implementation, the Operation and Management SLA and Scope of work definition.

A detailed program of the transfer process that could be used in conjunction with a Replacement Vendor including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer;

Plans for the communication with such of the Successful Bidder, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on Project's operations as a result of undertaking the transfer;

Plans for provision of contingent support to the Surveillance Project and Replacement Vendor for a reasonable period (minimum one month) after transfer.

Successful Bidder shall re-draft the Exit Management Plan annually to ensure that it is kept relevant and up to date.

Each Exit Management Plan shall be presented by the Successful Bidder to and approved by SSCDL or its nominated agencies.

The terms of payment as stated in the Terms of Payment Schedule include the costs of the Successful Bidder complying with its obligations under this Schedule.

During the exit management period, the Successful Bidder shall use its best efforts to deliver the services.

Payments during the Exit Management period shall be made in accordance with the Terms of Payment Schedule.

Transfer Cost

On premature termination of the contract for reasons other than those mentioned in section 23.a (Termination for Default), the Successful Bidder shall be paid the depreciated book value of the infrastructure cost and the other assets (as per the Asset Register). The depreciation rates and method followed will be as per Income Tax Rules.

Note: Amount to be payable by SI on premature termination of contract =

Pending amount to be paid against services delivered + Depreciated Book Value of the Assets as per Income Tax Rules – Applicable Penalty / Liquidated Damages

Termination of Contract

SSCDL may, without prejudice to any other remedy under this Contract and applicable law, reserves the right to terminate for breach of contract by providing a written notice of 30 days stating the reason for default to the SI and as it deems fit, terminate the contract either in whole or in part:

- If the SI fails to deliver any or all of the project requirements / operationalization / go-live of the project within the time frame specified in the contract;
  or
- If the SI fails to perform any other obligation(s) under the contract.

On receipt of such notice, SI will be required to cure any breach/ default of the Contract, if SSCDL is of the view that the breach may be rectified.

On failure of the SI to rectify such breach within 30 days, SSCDL may terminate the contract, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to SSCDL. In such event the SI shall be liable for penalty/liquidated damages imposed by the SSCDL. The performance Guarantee shall be forfeited by the SSCDL

Consequences of Termination

In the event of termination of this contract, SSCDL is entitled to impose any such obligations and conditions and issue any clarifications as may be necessary to ensure an efficient transition and effective continuity of the services which the SI shall be obliged to comply with and take all available steps to minimize the loss resulting from that termination/ breach, and further allow and provide all such assistance to SSCDL and/ or succeeding vendor, as may be required, to take over the obligations of the SI in relation to the execution / continued execution of the requirements of this contract.

Plans and drawings

All plans, drawings, specifications, designs, reports and other documents prepared by the Vendor in the execution of the contract shall become and remain the property of SSCDL and before termination or expiration of this contract the SI shall deliver all such documents, prepared under this contract along with a detailed inventory thereof, to SSCDL.

Miscellaneous

a) Confidentiality

"Confidential Information" means all information including Project Data (whether in written, oral, electronic or other format) which relates to the technical, financial and operational affairs, business rules, citizen information, video footages, alert information, any police department data, products, processes, data, crime / criminal secrets, design rights, know-how and personnel of each Party and its affiliates which is disclosed to or otherwise learned by the other Party or its consortium partners or subcontractors (whether a Party to the contract or to the SLA) in the course of or in connection with the contract (including without limitation such information received during negotiations, location visits and meetings in connection with the contract or to the SLA) or pursuant to the contract to be signed subsequently.

Except with the prior written permission of SSCDL, the Systems Integrator (including all consortiums or partners) and its Personnel shall not disclose such confidential information to any person or entity not expected to know such information by default of being associated with the project, nor shall the Systems Integrator and it's Personnel make public the recommendations formulated in the course of, or as a result of the Project.

The System Integrator recognizes that during the term of this Agreement, sensitive data will be procured & made available to it, its Sub contractors & agents & others working for or under the System Integrator. Disclosure or usage of the data by any such recipient may constitute a breach of law applicable causing harm not only to SSCDL / SMC whose data is used but also to its stakeholders. System Integrator, its Subcontractors & agents are required to demonstrate utmost care, sensitivity & strict confidentiality. Any breach of this Article will result in SSCDL & its nominees receiving a right to seek injunctive relief & damages from the System Integrator.

b. Each Party agrees as to any Confidential Information disclosed by a Party to this Agreement (the "Discloser") to the other Party to this Agreement (the "Recipient") &

i. to take such steps necessary to protect the Discloser's Confidential information from unauthorized use, reproduction & disclosure, as the Recipient takes in relation to its own Confidential Information of the same type, but in no event less than reasonable care;
ii. to use such Confidential Information only for the purposes of this Agreement or as otherwise expressly permitted or expressly required by this Agreement or as otherwise permitted by the Discloser in writing; &
iii. not, without the Discloser's prior written consent, to copy the Confidential Information cause or allow it to be copied, directly or indirectly, in whole or in

part, except as otherwise expressly provided in this Agreement, or as required in connection with Recipient's use as permitted under this Article, or as needed for the purposes of this Agreement, or as needed for the purposes of this Agreement, provided that any proprietary legends & notices (whether of the Discloser or of a Third Party) are not removed or obscured; &

iv. Not, to disclose, transfer, publish or communicate the Confidential Information in any manner, without the Discloser's prior written consent, to any person except as permitted under this Agreement.

c. The restrictions of this Article shall not apply to confidential Information that:

i. is or becomes generally available to the public through no breach of this Article by the Recipient; &
ii. Was in the recipient's possession free of any obligation of confidence prior to the time of receipt of it by the Recipient hereunder; &
iii. Is developed by the Recipient independently of any of discloser's Confidential Information; &
iv. Is rightfully obtained by the Recipient from third Parties authorized at that time to make such disclosure without restriction; &
v. is identified in writing by the Discloser as no longer proprietary or confidential; or
vi. Is required to be disclosed by law, regulation or Court Order, provided that the recipient gives prompt written notice to the Discloser of such legal & regulatory requirement to disclose so as to allow the Discloser reasonable opportunity to contest such disclosure.

d. To the extent that such disclosure is required for the purposes of this Agreement, either Party may disclose Confidential Information to:

i. its employees, agents & independent contractors & to any of its affiliates & their respective independent contractors or employees; &
ii. its professional advisors & auditors, who require access for the purposes of this Agreement, whom the relevant Party has informed of its obligations under this Article & in respect of whom the relevant Party has informed of its obligations under this Article has used commercially reasonable efforts to ensure that they are contractually obliged to keep such Confidential Information confidential on terms substantially the same as set forth in this Article. Either Party may also disclose confidential Information or any entity with the other Party's prior written consent.

e. The provisions of this Article shall survive three years post expiration or any earlier termination of this Agreement.

f. confidential Information shall be & remain the property of the Discloser & nothing in this Article shall be construed to grant either Party any right or license with respect to the other Party's confidential Information otherwise than as is expressly set out in this Agreement.

g. Subject as otherwise expressly provide in this Agreement all Confidential information in tangible or electronic form under the control of the Recipient shall either be destroyed, erased or returned to the Discloser promptly upon the earlier of: (i) the written request of the Disclose, or, (ii) termination or expiry of this Agreement .Notwithstanding the forgoing, both Parties may retain, subject to the terms of this Article, reasonable number of copies of the other Party's Confidential Information solely for confirmation of compliance with the confidentiality obligations of this Agreement.

h. Neither Party is restricted by the provisions of this clause from using (including using to provide products or perform services on behalf of third Parties) any ideas, concepts, know-how & techniques that are related to the Recipient's employees or agents (and not intentionally memorized for the purpose of later recording or use) (collectively, the "residuals"). This Article shall not permit the disclosure or use by either Party or any financial (including business plans), statistical, product, personnel or customer data or the other Party. Each party agrees not to disclose the source of the Residuals.

i. Both Parties agree that monetary damages would not be a sufficient remedy for any breach of this clause by the other Party & that SSCDL & system integrator, as appropriate, shall be entitled to equitable relief, including injunction & specific performance as a remedy for any such breach. Such remedies shall not be deemed to be the exclusive remedies for a breach by a Party of this clause, but shall be in addition to all other remedies available at law or equity to the damaged Party.

j. in connection with the Services, System Integrator may from time to time undertake one or more quality assessment reviews for the purpose of improving the SSCDL Project. In order for such reviews to be frank & candid, for the greatest benefit to both SSCDL & System Integrator, they shall be kept confidential to the greatest extent possible. The Parties agree that any documentation created in connection with such quality assessment reviews shall be confidential Information of System Integrator which is licensed to SSCDL for any internal use except that in no event shall such documentation or the results of such reviews be discoverable or admissible (or used for any purpose) in any arbitration or legal proceedings against System integrator related to this Agreement or the Services.

b) Standards of Performance

The SI shall provide the services and carry out their obligations under the Contract with due diligence, efficiency and professionalism/ethics in accordance with generally accepted professional standards and practices. The SI shall always act in respect of any matter relating to this contract. The SI shall abide by all the provisions/Acts/Rules/Regulations, Standing orders, etc. of Information Technology or otherwise as prevalent in the country. The SI shall also conform to the standards laid down by SMC or SSCDL or Government of Gujarat or Government of India from time to time.

c) Sub Contracts

All the personnel working on the project and having access to the Servers / data should be on payroll of the Systems Integrator. Sub-contracting / out sourcing would be allowed only for work like

- Passive Networking & Civil Work during implementation,
- staff for non- IT support during post-implementation
- Services delivered by the respective Product Vendors / OEMs

The bidder is expected to provide details of the sub-contractors for the work which is allowed as mentioned in the clause. Use of personnel not on payroll of the SI shall be considered as sub-contracting.

The SI shall take prior approval from SSCDL for sub-contracting any allowed work as mentioned in clause, if not already specified in the proposal and approved by SSCDL. Such sub-contracting shall not relieve the SI from any liability or obligation under the Contract. The SI shall solely responsible for the work carried out by subcontracting under the contract.

d) Care to be taken while working at Public Place

SI should follow instructions issued by concerned Competent Authority and SSCDL from time to time for carrying out work at public places. SI should ensure that there is no damage caused to any private or public property. In case such damage is caused, SI shall immediately bring it to the notice of concerned organization and SSCDL in writing and pay necessary charges towards fixing of the damage. SI should also ensure that no traffic congestion/public inconvenience is caused while carrying out work at public places.

SI shall ensure that its employees/representatives don't breach privacy of any citizen or establishment during the course of execution or maintenance of the project.

e) Compliance with Labor regulations

The SI shall pay fair and reasonable wages to the workmen employed by him, for the contract undertaken by him and comply with the provisions set forth under the Minimum wages Act and the Contract Labor Act 1970.

f) Independent Contractor

Nothing in this Agreement shall be construed as establishing or implying any partnership or joint venture or employment relationship between the Parties to this Agreement. Except as expressly stated in this Agreement nothing in this Agreement shall be deemed to constitute any Party as the agent of any other Party or authorizes either Party (i) to incur any expenses on behalf of the other Party, (ii) to enter into any engagement or make any representation or warranty on behalf of the other Party, (iii) to pledge the credit of or otherwise bind or oblige the other Party, or (iv) to commit the other Party in any manner whatsoever in each case without obtaining the other Party's prior written consent.

g) Waiver

A waiver of any provision or breach of this Agreement must be in writing and signed by an authorized official of the Party executing the same. No such waiver shall be construed to affect or imply a subsequent waiver of the same provision or subsequent breach of this Agreement.

h) Notices

Any notice or other document, which may be given by either Party under this Agreement, shall be given in writing in person or by pre-paid recorded delivery post or by email or by fax.

In relation to a notice given under this Agreement, any such notice or other document shall be addressed to the other Party's principal or registered office address as set out below

SSCDL:

Chief Executive Officer,
Surat Smart City Development Ltd.
1st Floor, South Zone Office,
Surat Municipal Corporation,
Opp. Satyanagar, Udhna,
Surat-394210, Gujarat, India
Tel: 0261 2277429
Fax: 0261 2277043

Systems Integrator:

Tel: ----------

Fax: ----------

i) Performance Guarantee

The SI shall submit performance guarantee which is unconditional & irrevocable equal to 3% of the order value of the contract in the format prescribed in RFP issued by any Bank as per approved list of Banks mentioned in Annexure of this RFP. The performance guarantee shall be valid for the term agreement & shall be renewed & maintained by the SI for the term of the agreement & extension, if any. The performance guarantee shall be forfeited / liquidated by the SSCDL as a penalty in the event of failure to complete obligations or breach of any of the conditions by the SI.

j) Personnel/Employees

i. Personnel/employees assigned by System Integrator to perform the services shall be employees of System Integrator or its sub-contractors(only for permitted activities), & under no circumstances will be considered as employees of SSCDL. System Integrator shall have the sole responsibility for supervision & control of its personnel & for payment of such personnel's employee's entire compensation, including salary, legal deductions withholding of income taxes & social security taxes, worker's compensation, employee & disability benefits & the like & shall be responsible for all employer obligations under all laws as applicable from time to time. The SSCDL shall not be responsible for the above issues concerning to personnel of System Integrator.

ii. System Integrator shall use its best efforts to ensure that sufficient System Integrator personnel are employed to perform the Services, & that, such personnel have appropriate qualifications to perform the Services. SSCDL or its nominated agencies shall have the right to require the removal or replacement of any system Integrator personnel performing work under this Agreement. In the event that SSCDL requests that any System Integrator personnel be replaced, the substitution of such personnel shall be accomplished pursuant to a mutually agreed upon schedule & upon clearance of the personnel based on profile review & upon schedule & upon clearance of the personnel based on profile review & personal interview by SSCDL or its nominated agencies, within not later than 30 working days. System Integrator shall depute quality team for the project & as per requirements, SSCDL shall have the right to ask System Integrator to change the team.

iii. Management (Regional Head / VP level officer) of System Integrator needs to be involved in the project monitoring & should attend the review meeting at least once in a month.

iv. The profiles of resources proposed by System Integrator in the technical proposal, which are considered for Technical bid evaluation, shall be construed as 'Key Personnel' & the System Integrator shall not remove such personnel without the prior written consent of SSCDL. For any changes to the proposed resources, System Integrator shall provide equivalent or better resources (in terms of qualification & experience) in consultation with SSCDL.

v. Except as stated in this clause, nothing in this Agreement will limit the ability of System Integrator freely to assign or reassign its employees; provided that System Integrator shall be responsible, at its expense, for transferring all appropriate knowledge from personnel being replaced to their replacements. SSCDL shall have the right to review & approve System Integrator's plan for any such knowledge transfer. System Integrator shall maintain the same standards for skills & professionalism among replacement personnel as in personnel being replaced.

vi. Each Party shall be responsible for the performance of all its obligations under this Agreement & shall be liable for the acts & omissions of its employees & agents in connection therewith.

k) Variations & Further Assurance

a. No amendment, variation or other change to this Agreement or the SLAs shall be valid unless made in writing & signed by the duly authorized representatives of the Parties to this Agreement.

b. Each Party to this Agreement or the SLAs agree to enter into or execute, without limitation, whatever other agreement, document, consent & waiver & to do all other things which shall or may be reasonably required to complete & deliver the obligations set out in the Agreement or the SLAs.

l) Severability & Waiver

a. if any provision of this Agreement or the SLAs, or any part thereof, shall be found by any court or administrative body of competent jurisdiction to be illegal, invalid or unenforceable the illegality, invalidity or unenforceability of such provision or part provision shall not affect the other provisions of this Agreement or the SLAs or the remainder of the provisions in question which shall remain in full force & effect. The relevant Parties shall negotiate in good faith in order to agree to substitute any illegal, invalid or unenforceable provision with a valid & enforceable provision which achieves to the greatest extent possible the economic, legal & commercial objectives of the illegal, invalid or unenforceable provision or part provision within 7 working days.

b. No failure to exercise or enforce & no delay in exercising or enforcing on the part of either Party to this Agreement or the SLAs of any right, remedy or provision of this Agreement or the SLAs shall operate as a waiver of such right, remedy or provision in any future application nor shall any single or partial exercise or enforcement of any right, remedy or provision preclude any other or further exercise or enforcement of any other right, remedy or provision.

m) Entire Agreement

This MSA, the SLAs & all schedules appended thereto & the contents & specifications of the Volumes I & II, of the RFP subsequent corrigenda issued thereon & clarification (undertakings) accepted by the SSCDL constitute the entire agreement between the Parties with respect to their subject matter.

n) Survivability

The termination or expiry of this Agreement or the SLAs for any reason shall not affect or prejudice any terms of this Agreement, or the rights of the Parties under them which are either expressly of by implication intended to come into effect or continue in effect after such expiry or termination.

o) The stamp duty payable for the contract shall be borne by the Systems Integrator**.**

Applicable Law

The contract shall be governed by the laws and procedures prescribed by the Laws prevailing and in force in India, within the framework of applicable legislation and

enactment made from time to time concerning such commercial dealings/processing. All legal disputes are subject to the jurisdiction of Surat courts only.

IN WITNESS WHEREOF the common seal of the Company has been hereinto affixed in the presence of CEO /Director/GM (IT) of the Company has hereinto set their hands and sealed and signature of the System Integrator has been herein affixed this day and year above written.

Signed, sealed and delivered by _____ in the presence of:

Witnesses:

(1)_____

(2)_____

_____

Chief Executive Officer
Surat Smart City Development Ltd

The common seal of the Company was affixed on the.....day of month of.....20____ in presence of (1) and (2) members of the Project Committee of the Company.

(1)_____

(2)_____

(Any two members of the Project Management Committee of Surat Smart City Development Ltd

REQUEST FOR PROPOSAL

for

SELECTION OF IMPLEMENTATION AGENCY FOR INTEGRATED TRAFFIC CONTROL SYSTEM (ITCS) IN SURAT CITY

Volume 2 – Scope of Work

Tender Number: GM(TRANSIT)/SSCDL/BRTS/2/2022-2023

Last date for Online Price Bid Submission: 15.10.2022

Last date for Technical Bid Submission: 18.10.2022

Invited by

Surat Smart City Development Limited
1st Floor, South Zone Office, Surat Municipal Corporation, Opp. Satyanagar, Udhna, Surat – 394210, Gujarat, India

Table of Content

1. Disclaimer

The information contained in this Request for Proposal document ("**RFP**") whether subsequently provided to the bidders, ("**Bidder/s**") verbally or in documentary form by Surat Smart City Development Limited (henceforth referred to as "**SSCDL**" in this document) or any of its employees or advisors, is provided to Bidders on the terms and conditions set out in this Tender document and any other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is not an offer or invitation to any party. The purpose of this RFP is to provide the Bidders or any other person with information to assist the formulation of their financial offers ("**Bid**"). This RFP includes statements, which reflect various assumptions and assessments arrived at by SSCDL in relation to this scope. This Tender document does not purport to contain all the information each Bidder may require. This Tender document may not be appropriate for all persons, and it is not possible for the Chief Executive Officer, SSCDL and their employees or advisors to consider the objectives, technical expertise and particular needs of each Bidder. The assumptions, assessments, statements and information contained in the Bid documents, may not be complete, accurate, adequate or correct. Each Bidder must therefore conduct its own analysis of the information contained in this RFP and to seek its own professional advice from appropriate sources.

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

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

SSCDL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP. SSCDL may in its absolute discretion, but without being under any obligation to do so, can amend or supplement the information in this RFP.

The issue of this Tender document does not imply that SSCDL is bound to select a Bidder or to appoint the Selected Bidder (as defined hereinafter), for implementation and SSCDL reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by SSDL or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain

with the Bidder and SSCDL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation for submission of the Bid, regardless of the conduct or outcome of the Selection process

2. Glossary

Terms	Meaning
ATCS	Adaptive Traffic Control System
ITCS	Integrated Traffic Control System
BOM	Bill of Material
CCTV	Closed Circuit Television
CEO	Chief Executive Officer
GoG	Government of Gujarat
GPS	Global Positioning System
ICT	Information and Communication Technology
LoI	Letter of Intent
LPU	Local Processing Unit
OEM	Original Equipment Manufacture
RFP	Request for Proposal
SMC	Surat Municipal Corporation
SSCDL	SURAT Smart City Development Limited
SI	System Integrator
SLA	Service Level Agreement
TCC	Traffic Command Control Center
ICCC	Integrated Command and Control Center

3. Definitions

Term	Definition
All red	A condition when only red aspects are displayed. The All Red is executed when an abrupt signal change is required (e.g., power up, flash-to-signal, manual-to-auto, hurry call-to-auto, etc.).
Amber time	Duration of the amber display for a phase or a movement
ATCS	Adaptive Traffic Control Systems are traffic responsive systems that use data from vehicle detectors and optimize traffic signal settings in an area to reduce vehicle delays and stops.
Cable-less linking facility	A method of linking traffic signals along a corridor and / or in an area using timing information derived from their master time clock systems.
Central computer	A computer system that is connected to all traffic signal controllers under the ATCS through the communication network. The network control software runs at the Central Computer
Clearance amber	Clearance Amber is the warning signal to traffic streams approaching the Stop Line, commenced at the change of a right of way.
Communication network	A wired or wireless facility used to send and receive data between the Central Computer/Server and the Traffic Signal Controller
CAMC	Comprehensive Annual Maintenance Contract
Conflict plan	Any competing phases that are not allowed simultaneously are defined as conflicting phases. The Conflict plan is a listing of all conflicting groups.
Corridor	An arterial road with several intersections
Cycle plan	Each signal switching schemes make a Cycle Plan. Change of a stage switching sequence or stage timings define a new cycle plan.
Cycle	Cycle is the total time period required for one complete sequence of signal switching scheme, in which all stages are given some fixed order.
Day plan	Day Plan is the distribution of cycle plans for a particular day.
Decision support	Reports, Graphs, Traffic Simulator interface
Filter green	The Filter Green provides signal for the turning traffic. When linked with a vehicle phase the termination of filter green is blackout; otherwise, it flash for few seconds (equivalent to clearance amber time) before termination.
Fixed time operation	None of the stages are preempted
Full ATCS	The signal controllers shall accept stage timings from the ATCS application and report back the operational parameters to the central server
Full VA cycle	Vehicle Actuated operation of signal controller with fixed cycle length

Term	Definition
Full VA	Preemption enabled for all the stages
GPS (global positioning system)	A satellite-based radio navigation system developed and operated by the U.S. Department of Defense (DOD). GPS permits users to determine time, date and day of week 24 hours a day, in all weather, anywhere in the world with a precision and accuracy.
Green running period	Split time utilized for the Stage
Green wave	A scheme that give right-of-way progressively at all intersections in a corridor
Hurry call	The Hurry Call mode will provide the means to force the controller to a defined stage, without violating safety clearances.
Indicative green	The Indicative Green is a continuously flashing signal/steady signal, which provides signal for the free left turning traffic. The termination of indicative green is always blackout.
Inter green	This is the time period between the end of the green signal for one stage and the beginning of the green signal for the following stage.
Maximum green period	Maximum Green period is the maximum time period for which a green light can be in the ON state in a particular stage.
Minimum green period	This facility ensures that a phase loses right of way only after a minimum time period has elapsed. This minimum time is defined as Minimum Green Period. It will not be possible to terminate prematurely the minimum green period.
Network control software	ATCS application software that generate, monitor and manage the signal plan timings for all intersections under the ATCS.
Offset	Offset is defined as the difference between the start/termination of green time at the successive upstream and downstream signals.
Pedestrian movements	The Pedestrian phase contains two signal aspects, viz. Red and Green. The termination of pedestrian phase can be either red flash or green flash.
Performance index	A measure of effectiveness on the applied control strategy
Phase	The sequence of conditions applied to one or more streams of vehicular or pedestrian traffic, which always receive identical signal light indications. The controller provides facilities for a number of phases, each phase provide control for one of the following:
Power saving	Signal lamp intensity control based on ambient light during different time of the day.
Priority route	A route in a corridor that carry maximum volume of traffic at a given point of time.
Priority stage	A stage that is a part of the priority route
Red extension	When a right of way is terminated with Clearance amber, opening of the next right of way is delayed by the Red Extension period. With no continuing phase this gives an effect of all red between stage changes.

Term	Definition
Right-of-way	A visual signal to go-ahead
Semi-actuation	One or more stages are not preempted in vehicle actuated signal operation
System Integrator (SI)	The successful bidder will be referred as SI
Special day plan	Holidays falling on normal weekdays can be treated as special days and can have a different day plan.
Split	A Split decides how long a Stage should remain; i.e. the duration of a given right of way.
Stage preemption	A facility to terminate a Stage execution before it reaches the Green running time set for that Stage. The Stage preemption happens when there is no continuous vehicle demand on the corresponding approach.
Stage skipping	Facility for a stage to appear only when demanded
Stage	A stage can primarily be considered as a condition of signal lights during a period of the cycle, which gives right of way to one or more traffic movements. One or more phases form a Stage (Group). Stage is a group of non- conflicting phases
Traffic lane	A lane is part of a roadway (carriageway) that is designated for use by a single line of vehicles, to control and guide drivers and reduce traffic conflicts.
Traffic Command Centre (TCC)/Integrated Command and Control Center	Place where the Central Computer/Server resides and all communication network links are aggregated.
Traffic signal controller	A microcontroller based equipment with solid state traffic signal lamp switching module.
Vehicle detector	A device that detect the presence and passage of a vehicle.
Vehicular movements	The Vehicle phase contains three signal aspects, viz. Red, Amber and Green. The termination of vehicle phase is always with clearance amber.
Week plan	Week Plan is the distribution of available day plans for a week.
Zone	A small area with limited no. of intersections in a city under ATCS.

4. Introduction

4.1. Project Background

Surat Municipal Corporation (SMC) under the ambit of smart city initiatives intends to utilize information technology to modernize Traffic management, Traffic Surveillance, and Traffic Law enforcement in the city to enable Surat Traffic Police & Surat Municipal Corporation (SMC) in ensuring smooth traffic flow and informed road users.

Surat, a city which has urbanized rapidly in recent years, has witnessed enormous growth in traffic volumes which have, resulted in several traffic problems in and around the city, such as traffic jams, increase in number of road accidents, etc. A need was felt to develop an Integrated Traffic Control System (ITCS), which would aim at improving the efficiency and effectiveness of the traffic system on Surat roads. Implementation of ITCS is an initiative taken by SSCDL to provide a secure and pleasant road experience to citizens of Surat.

To realize the benefits of ITCS, it is pertinent to adopt an approach that includes technology-based regulation, intervention, information and enforcement system to improve the mobility, discipline and safety on Surat roads. Therefore, ITCS is envisaged with multiple applications, including Adaptive Traffic Control Systems, Red Light Violation Detection (RLVD) systems, Speed Detection Systems, Traffic Surveillance Cameras, ANPR Cameras, systems amongst others which will ensure that the intended outcomes have been accomplished.

ITCS integrates various sub systems (such as CCTV, Vehicle detection, communication,) in a coherent single interface that provides real time data on status of traffic and predicts traffic conditions for more efficient planning and operations. Thus, a system such as ITCS shall aim to help police and SMC to take proactive/ reactive measures and ensure safe & smooth environment on road.

Thus, SSCDL intends to establish an ITCS through a process of competitive bidding and selecting a SI for Supply, Installation, Commissioning, Testing and maintenance for 5 years (i.e., 1 year of comprehensive warranty & 4 years of comprehensive Annual Maintenance Contract) of following components/solutions along with Comprehensive Annual Operation & Maintenance of the existing components/solutions as mentioned in section 4.3 of this Volume.

Adaptive Traffic Control System (ATCS) such as Vehicle detectors/sensors, Signal controller, Traffic light aspects(Red, Amber, Green), Pedestrian Solution(Red, Animated Green and countdown timer), Countdown timer, Standard pole, Cantilever Pole, UPS with Battery, Filed Junction Box, Edge Level Switch of adequate capacity, power supply provisioning and related accessories and associated civil work including cabling for successful operation of the ATCS system.

Traffic Enforcement systems(TES) such as Automatic Number Plate Recognition (ANPR), Red Light Violation Detection camera (RLVD) System, Speed Violation Detection (SVD) System, Local Processing Unit (LPU), Local Storage Device, Junction Box of adequate capacity, UPS with battery, Edge Level Switch, other related accessories and required mounting structure including civil work for successful operation of the TES system.

Traffic Surveillance Cameras such as General Surveillance Camera(PTZ), Pole, Pole Mounted junction Box, Edge Level Switch, etc. other related accessories and required mounting infrastructure including civil work for successful operation of the system.

Integration with existing Surat OFC project in BRTS route/corridor for Data connectivity to transfer data from field device to the Traffic Command Center (TCC)/Integrated Command and Control Center(ICCC).

MPLS network services to transfer the data from field devices to the Traffic Command Center (TCC)/Integrated Command and Control Center(ICCC) for non-BRTS junctions.

Set up ITCS Project's Application - Installation & Commissioning in Integrated Command and Control Center(ICCC) and in Traffic Command Center(TCC) of ITCS Project's applications.

Migration of existing Data center (DC)'s components set up at BRTS Office, Man Darwaja to New Data Center at IT MAC Center.

Capacity Building Activity - Capacity building for various government agencies and administrative arms of SSCDL /SMC through development of Training manuals, continuous maintenance of hardware and software for 5 years period, training of administrative and management personnel including handholding the TCC operations for 5 year.

Other General Requirement for ATCS & TES Solution

- Develop individual signal control strategies including definition of signal grouping, setting of potential strategies for traffic control under various scenarios, specification of traffic management strategies for planned and unplanned events.
- Develop a consolidated database of incoming real time data for future analysis and evaluation purposes. It is envisaged that the proposed adaptive traffic control system will incorporate historic trends for development of traffic management strategies and adaptive control strategies.

4.2. Project Objectives

The broad objectives of the project are as follows:

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.

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

Increase Operational Efficiency: The system is intended to offer operational efficiency to traffic management agency by way of extending IT based compliance process on ground and enable the agency to deliver better traffic conditions and safe operating conditions.

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 consumption. These functions will lead to informed travel conditions within the technology influence area.

Improve Safety: The real-time traffic monitoring and intelligent traffic systems can prevent accidents by recognizing and thus responding to the potentially dangerous situation in advance.

Increased Productivity: Achieving improvement in the productivity, logistics and other economic activities by obtaining the precise-real time information on transport due to the availability of data on traffic flow in key areas of the city. The transport data can also be used to take policy decisions to ensure sustained productive environment.

Real Time Information, Event Tracking & Response, and Fast Access to Information: The real-time information at the ICCC/TCC shall enable the operator 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 penalized at the next traffic junction based on the vehicle registration number.

Enforcement: Effective enforcement of traffic violation, checking and monitoring shall reduce the traffic related offences of Red-Light violations and over speeding violations.

4.3. Existing Systems and Infrastructure

There are around 158 existing traffic signals junctions, PTZ cameras at 26 locations, ANPR camera at 03 locations for Traffic Surveillance, and Variable Message Sign board system at 03 locations, and Existing Data center at Surat BRTS office, Mandarwaja under ITCS project. SI shall have to Upgrade, Integrate & Maintain all the existing systems and infrastructures as mentioned in this section, for the duration of entire contractual period including implementation phase. Existing systems and infrastructures have already been implemented by various agencies of Surat Municipal Corporation (SMC) / Surat Smart City Development limited (SSCDL). Following are the component wise details of the Existing infrastructure of the project.

4.3.1. Existing ATCS infrastructure

The following table provides the details of the existing Traffic signals in Surat.

#	Type of Traffic Signal System	Number of Junctions
1	Non-BRTS Traffic Signals (Fixed Time Mode)	31
2	Phase-1 BRTS Corridor traffic signals (Vehicle Actuated mode)	45
3	Phase-2 Extension BRTS Corridor traffic signals (Vehicle Actuated mode)	39
4	Other Traffic signals implemented (Vehicle Actuated mode)	43
Total Traffic Signals		**158**

It will be the responsibility of the System Integrator (SI) to upgrade, integrate and maintain all the above traffic signal in Adaptive Traffic Control System as per the requirements.

The existing infrastructure for ATCS junctions is as follows:

- SMC/SSCDL has already procured an Adaptive Traffic Control System (ATCS) application (CDAC Co-Si-Cost & TraMM) for previous project(s). Bidder is requested to propose their new hardware and software system(s), having compatibility with above mentioned application. SDK / API / All communication and program protocol in context to the existing application shall be provided to the selected bidder by SMC / SSCDL. Further, bidder is free to propose any new software / application for their newly proposed solution. However, no cost pertaining to the same shall be given to the selected bidder. Furthermore, if in case the new ATCS solution is proposed by the bidder, same shall have to be complied with all the technical and functional specifications provided in this tender document and any additional requirement pertaining to the upgradation of existing hardware and / or software shall also have to be taken care of by the selected bidder. Please note that no cost pertaining to the upgradation of software and / or hardware shall be given to the selected bidder.

- **Non-BRTS traffic signal junctions on Fixed time mode – 31 junctions**
    - SI is required to upgrade **31 traffic signals** working on Fixed mode to Adaptive Traffic Control system by replacing/installing including but not limited to the Traffic controller, Vehicle detection camera, Countdown timer, UPS with battery, Field switches and Field Junction box, etc. as per proposed solution and the quantities of the above-mentioned items are considered in the commercial bid.
    - SI is required to utilize the existing components such as Poles, Aspects, Cables, Pedestrian lamp heads, etc.
    - SI is required to provide the Network connectivity at all the Traffic junctions to connect these traffic junctions with the new Integrated command & control centre (ICCC).
    - SI is required to integrate these junctions with the Centralised ATCS application software to monitor, control and analyse the traffic information from ICCC.
    - Below mentioned are the specifications for the existing Traffic Signal Aspects installed at 31 junctions for reference.

#	Component	Specifications
1	Input Voltage	230 V AC
2	Operating Voltage	170V ~265 V AC
3	Temperature range	- 0°C to + 50°C
4	Light Intensity	400 Cd (minimum)
5	Ingress Protection	IP65

#	Component	Specifications
6	Phantom Class	Class 5
7	Power Consumption	Red - 10 W ±2 Watts Yellow - 7 W ± 2 Watts Green -7 W ± 2 Watts
8	Special sign	300 mm of Arrow, Stop Man & Walk man
10	Dimension	300mm
11	Standard	EN12368
12	Aspect Enclosure	rust and rain proof made of Polycarbonate material

- **List of Existing Non-BRTS Traffic signal junctions**

#	Junction name	Arm
1	Athwagate Junction	5
2	Old RTO	3
3	Majuragate	4
4	Kadiwala	4
5	Udhana Darwaja	4
6	Delhi Gate	5
7	Amisha Hotel	3
8	Hodi Bangolw	3
9	Singanpore Char Rasta	4
10	Raghukul Market	3
11	Bhagal Char Rasta	4
12	Suryapur Gate	2
13	Poddar Arcade Varachha	3
14	Vaishali Junction	4
15	Mini Bazar	3
16	Warehouse	3
17	Chokshi Wadi	3
18	Nagina Wadi	4
19	Timaliyawad	3
20	Prime Arcade 1	3
21	Prime Arcade 2	3
22	Chowk Bazar	4
23	Honey Park	3
24	Palanpurjakatnaka (Hidayat Nagar	4
25	Circuit House	2
26	Lb1	3
27	Lb2	3
28	Ramchowk	3
29	Union Park Char Rasta	4
30	Lambe Hanuman	3

#	Junction name	Arm
31	Kinnary Cinema	3

- **Phase-1 BRTS corridor traffic signal junctions on Vehicle Actuated (VA) mode – 45 junctions**
  - SI is required to upgrade **45 existing traffic signals** working on Vehicle Actuated mode to Adaptive Traffic Control system by replacing/installing including but not limited to the Traffic controller, Countdown timer, Field switches and Field Junction box, etc. as per proposed solution and the quantities of the above-mentioned items are considered in the commercial bid.
  - SI is required to utilize the existing components such as Poles, Aspects, Cables, Pedestrian lamp heads, UPS with batteries, Field Junction Box and Vehicle detector cameras, etc.
  - SI is required to provide the Network connectivity at all the Traffic junctions to connect these traffic junctions with the new Integrated command & control centre (ICCC).
  - SI is required to integrate these junctions with the Centralised ATCS application software to monitor, control and analyse the traffic information from ICCC.
  - Below mentioned are the specifications for the existing infrastructure installed at 45 junctions for reference.

#	Item Description	Make	Model No.
1	Adaptive Traffic Signal Controller	DIMTS	WiTraC
2	Vehicle Detector Camera	FLIR	Traficam
3	Traffic Light Aspects – Red, 12 V DC operated, Multiple Source LED	DIMTS	300RV
4	Traffic Light Aspects – Green, 12 V DC operated, Multiple Source LED	DIMTS	300GV
5	Traffic Light Aspects – Amber, 12 V DC operated, Multiple Source LED	DIMTS	300AV
6	Traffic Light Aspects - Red BRT, 12 V DC operated, Multiple Source LED	DIMTS	300RB
7	Traffic Light Aspects - Green BRT, 12 V DC operated, Multiple Source LED	DIMTS	300GB
8	Pedestrian lamp heads - Stop, 12 V DC operated, Multiple Source LED	DIMTS	300RP
9	Pedestrian lamp heads - Walk Man, 12 V DC operated, Multiple Source LED	DIMTS	300GP

  - **List of existing Phase-1 BRTS corridor Traffic signal junctions:**

#	Junction name	Arm
1	Satya Nagar South Zone	3
2	Udhna Teen Rasta	3
3	Gurudwara Udhna	2
4	Udhna Academy College	2
5	Laxmi Narayan Mandir Teen Rasta	3
6	Laxmi Narayan Mandir Bus Stand	2
7	Daksheshwar Mahadev Mandir Teen Rasta	3
8	Zota House Pandesara GIDC	4
9	Naveen Flouring	2
10	Bhestan Nahar	4
11	Bhagawati Nagar GIDC (Bus Stand)	2
12	Bhestan Char Rasta	4
13	Bhestan Stn. Road	3
14	Unn Naka	4
15	Unn Crossing	4
16	Greenpark	3
17	Sachingidc	3
18	Simmada Naher Junction	3
19	Simmada Gam	3
20	Vanmali Junction	3
21	Puna Gam Junction	4
22	Panas Gam Junction	3
23	Model Town Junction	4
24	Raghukul Market Near Anjana Bridge	3
25	Bhatena Junction	4
26	Unique Hospital Junction	4
27	Kapadiya Health Club Junction	4
28	Rupali Naher	4
29	Jamnagar Junction	4
30	Vivekanand Garden	4
31	Ishwar Farm Junction	3
32	Bread Linear Road Junction	3
33	Anuvratdwar (Ashirwad Park Junction)	4
34	Royal Park/ Puna Saroli	4
35	Maharana Pratap / Safal Square	4
36	Centre For Social Study	2
37	Sport Sankul Junction	3
38	VNSGU Gate Junction	2
39	Someshwara Junction	4
40	J. H. Ambani Junction	4
41	S. D. Jain School Junction	4

#	Junction name	Arm
42	VIP Road Junction	4
43	Dumas Resort 'Y' Junction	2
44	Swaminarayan Temple	2
45	Bhavna Park, Varachha	4

- **Phase-2 Extension BRTS corridor traffic signal junctions on Vehicle Actuated (VA) mode – 39 junctions**
    - SI is required to upgrade **39 traffic signals** working on Vehicle Actuated mode to Adaptive Traffic Control system by replacing/installing including but not limited to the Countdown timer, etc. as per proposed solution and the quantities of the above-mentioned items are considered in the commercial bid.
    - SI is required to utilize the existing components such as Traffic controller, Cables, Poles, Aspects, Countdown timer, Pedestrian lamp heads, UPS with batteries, Field Junction Box and Vehicle detector cameras, etc.
    - SI is required to provide the Network connectivity at all the Traffic junctions to connect these traffic junctions with the new Integrated command & control centre (ICCC).
    - SI is required to integrate these junctions with the Centralised ATCS application software to monitor, control and analyse the traffic information from ICCC.
    - Below mentioned are the specifications for the existing infrastructure installed at 39 junctions for reference.

#	Item Description	Make	Model No.
1	Adaptive Traffic Signal Controller	DIMTS	UTCS (GEN-2)
2	Countdown timer	DIMTS	CDT258
3	Vehicle Detector Camera	FLIR	Traficam
4	Traffic Light Aspects – Red, 12 V DC operated, Multiple Source LED	DIMTS	300RV
5	Traffic Light Aspects – Green, 12 V DC operated, Multiple Source LED	DIMTS	300GV
6	Traffic Light Aspects – Amber, 12 V DC operated, Multiple Source LED	DIMTS	300AV
7	Traffic Light Aspects - Red BRT, 12 V DC operated, Multiple Source LED	DIMTS	300RB
8	Traffic Light Aspects - Green BRT, 12 V DC operated, Multiple Source LED	DIMTS	300GB
9	Pedestrian lamp heads - Stop, 12 V DC operated, Multiple Source LED	DIMTS	300RP
10	Pedestrian lamp heads - Walk Man, 12 V DC operated, Multiple Source LED	DIMTS	300GP

- **List of existing Phase-2 Extension BRTS corridor Traffic signal junctions:**

#	Junction name	Arm
1	Sardar Market	2
2	Aaimata Chowk (Mid Block)/ Intercity Township	2
3	Aaimata Chowk	4
4	Kheteshwar Mahadev (Mid Block)	2
5	Bhakti Dham (Mid Block)	2
6	Landmark Empire Market	2
7	Bharat Cancer Hospital	3
8	Shakti Nagar (Sanskruti Ac Market)	3
9	Capital Square	3
10	Midas Square	4
11	Mahrana Pratap Chowk	4
12	Khodiyar Nagar (Jogni Mata Chowk)	3
13	Aaspas Temple	4
14	Mangal Panday (Mid Block)	2
15	Maharana Pratap (Mid Block)	2
16	Dindoli Char Rasta Near Dindoli Police Station	4
17	Dindoli Varigruh(Mid Block)	2
18	Baroda Prestige (Mid Block)	2
19	Vallabhacharya (Mid Block)	3
20	Hirabaug	5
21	Kapodara Police Station	3
22	Varachha Water Works (Chikuwadi)	3
23	Maharana Pratap Garden (Mid Block)	2
24	Dharamnagar Chowk (Shyamdhyam Mandir)	4
25	Sagwadi (Mid Block)	2
26	Valak Junction	2
27	Raghuvir Rowhouse (Mid Block)	2
28	Laskana Patiya Char Rast	4
29	Laskana Gam (Mid Block)	2
30	D.G.V.C.L Laskana (Mid Block)	2
31	Diamond Nagar (Mid Block)	2
32	Diamond Vidya Sankul	2
33	Pasodra Char Rasta	2
34	Shyam Nagar (Mid Block)	2
35	Kamrej Terminal (Mid Block)	2
36	VIP Circle, Utran	4
37	Royal Square	3

#	Junction name	Arm
38	Mangadh Chowk (Mid Block)	2
39	Central Ware House (Mid Block)	2

- **Other Existing Traffic Signal junctions implemented on Vehicle Actuated mode – 43 junctions**
  - SI is required to upgrade **43 traffic signals** working on Vehicle Actuated to Adaptive Traffic Control system
  - SI is required to utilize the existing components such as Traffic Controller, Aspects, Cables, Poles, Countdown timer, Pedestrian lamp heads, Field Junction Box, Edge level network switches, UPS with Batteries and Vehicle detector cameras, etc.
  - SI is required to provide the Network connectivity at all the Traffic junctions to connect these traffic junctions with the new Integrated command & control centre (ICCC).
  - SI is required to integrate these junctions with the Centralised ATCS application software to monitor, control and analyse the traffic information from ICCC.
  - Below mentioned are the specifications for the existing infrastructure installed at 43 junctions for reference.

#	Item Description	Make	Model No.
1	Adaptive Traffic Signal Controller	Envoys	EMTC-10-WC (WiCAN)
2	Countdown timer, 230 V AC operated, Full Matrix Multicolor	Envoys	EE-CDT-300 CPU
		Rudra	REGCDT-320-220
3	Vehicle Detector Camera	FLIR	Trafficam
4	Traffic Light Aspects - Red, Amber, Green 230 V AC operated, Hi-Flux	Swarco	FUTURLED3 - 230V AC
5	Pedestrian lamp heads - Stop & Animated Walk Man with Countdown timer, 230 V AC operated	Envoys	EE-PSL-300-3in1
		Rudra	REG-300-220
6	UPS with Batteries	UPS: Schneider-APC	APC SRC2KUXI (SCHNEIDER)
		Battery: Amaron	Quanta 12V 65Ah
7	Edge level Switches	Switch: Techroutes SFP Module: Techroutes	Switch: CES 2516PAC

#	Item Description	Make	Model No.
			SFP Module: IE GSFP-LX- 20km

- **List of other Existing Traffic Signal junctions on Vehicle actuated mode:**

#	Junction name	Arm
1	Moti Tokish	4
2	Yogi Chowk	4
3	Ashwani Kumar / Sarswati School Junction	5
4	Fulpada Road Junction	4
5	Kailashdham Junction	3
6	Dabholi Char Rasta	4
7	Lalita Chokadi	4
8	Rashi Circle	4
9	Sabjail Teen Rasta	4
10	Kamela Darwaja	4
11	Falsawadi Junction	4
12	Lal Darwaja	4
13	Godhani Circle	5
14	Mehata Petrol Pump	6
15	Gajera Circle	4
16	Gajera School / Ratnmala	4
17	Cross Road	3
18	Kosad Fire Station	3
19	Reliance Chokadi	3
20	Kosad EWS	4
21	Ved Road Police Station	3
22	Akhand Anand Collage	3
23	Ambatalawadi Junation	5
24	Laxmikant Ashram	4
25	Kharvarnagar	5
26	Samrat Vidhyalay	5
27	Yogi Nagar Chowk	4
28	Parvatpatiya Junction	5
29	Puna Kumbhariya	3
30	Sita Nagar Chokdi	4
31	Vijay Vallabh Chowk	5
32	Kevat Circle (Hijadawad)	4
33	Gandhiji Statue	3
34	Surat Railway Station	2
35	Sarthana Zoo	4

#	Junction name	Arm
36	Navjivan Restaurant/ Purshottam Nagar	3
37	Daruwala Petrol Pump, Station Road	3
38	Archana School	4
39	Ashapuri Teen Rasta	3
40	Ruwala Tekra	4
41	Maruti Nagar Char Rasta / Veer Bhagat Singh Chowk	4
42	SK Nagar	4
43	Rachana Circle	4

4.3.2. Existing Traffic Surveillance and Traffic Enforcement infrastructure

Following components/solutions are implemented by various agencies of SMC/SSCDL:

- 26 PTZ cameras under the Traffic Surveillance solution along with Video Management application software for viewing, recording and playback of installed PTZ cameras.
- Automatic Number Plate recognition system (ANPR) at 03 locations. (ANPR cameras along with mounting structure, LPU, IR illuminator, UPS with Battery, Field Junction Box etc are installed.) SI is required to integrate these cameras with the proposed solution.
- Variable Message Signboard system (VMS) at 03 locations (UPS with Battery, Field Junction Box etc are installed.). SI has to maintain and publish the content provided by SMC/SSCDL locally.
- Below mentioned are the specifications for the existing infrastructure installed for reference.

#	Item Description	Make	Model No.
1	PTZ Cameras for Traffic Surveillance	Video Management application: Milestone	Video Management application: Milestone Protect Corporate 2019 R3-M01-C01-133-01-6C4B67 Milestone Protect Smart wall - M01-P03-100-01-6CB9DB Client License -86 Nos.
		PTZ Camera: Hikvision	PTZ Camera: DS-2DE7232IW-AE
		Joy Stick: Hikvision	Joy Stick: DS-1200KI
		Switch: Techroutes	Switch: CES 2516PAC
		Media Convertor: Optilink	Media Convertor: OP-M74050G SFP
		Memory Card: SanDisk Ultra Micro SDXC UHS-I card	Memory Card: SDSQUA4-064G-GN6MN
		600 VA UPS: APC	600 VA UPS: SRC2KUXI/SRC1KUXI

#	Item Description	Make	Model No.
		8 Port POE Switch: Techroutes	8 Port POE Switch: CES 2516PAC
2	ANPR System with Hardware & Accessories	LPU: DYNA	LPU: DYNA-IPC-510
		Camera: Hikvision	Camera: DS-2CD4025FWD-IRA
		Cantilever Poles -6 m-3 m arm for ANPR: Maruti Poles	Cantilever Poles -6 m-3 m arm for ANPR: Maruti Poles
		4 Port Switch: Techroutes	4 Port Switch: CES 2516P AC
		IR Illuminator: AXTON	IR Illuminator: AXTON AT-32S
		1 KVA + 1 Hr Backup UPS: APC	1 KVA + 1 Hr Backup UPS: SRC1KUXI
3	VMS board with Mounting structure (3000mm*1500mm*200 mm) including VMS Controller	Mass trans	MT.VMS.288.128.P10
		4 Port Switch: Techroutes	4 Port Switch: CES-2516-PAC
		1 KVA + 1 Hr. Backup: APC	1 KVA + 1 Hr. Backup: SRC1KUXI-IN

- **List of Existing Traffic Surveillance cameras (26-PTZ cameras)**

#	Location Name	Camera Type
1	Daksheshwar Mahadev Mandir Junction	PTZ
2	Unn Naka Bus Stand	PTZ
3	Dumas Resort 'Y' Junction	PTZ
4	VNSGU Gate Junction	PTZ
5	Unique Hospital Junction	PTZ
6	Swaminarayan Mandir Junction	PTZ
7	Keshav Nagar Police Chowki /Model Town Junction	PTZ
8	Ramchowk, Ghoddod Road	PTZ
9	Palanpur Jakatnaka	PTZ
10	Prime Market, Adajan	PTZ
11	Pragatiwadi / Honey Park, Adajan	PTZ
12	Sita Nagar Chokdi	PTZ
13	Dabholi Char Rasta	PTZ
14	Gajera School Junction	PTZ
15	Kosad E.W.S Junction	PTZ
16	Gandhiji Statue Near State Bank HQ	PTZ
17	Sabjail Tin Rasta Point / Chamunda Restaurant	PTZ
18	Falsawadi Circle / Golden Point Circle	PTZ
19	Zampa Bazar Saliya Market	PTZ
20	Bombay Market	PTZ
21	Lal Darwaja	PTZ
22	Parvat Patiya Junction	PTZ
23	Navjivan Restaurant	PTZ
24	Kapodra Chowpati	PTZ
25	Panas Gaam Entry Gate Agri. University Jn	PTZ

#	Location Name	Camera Type
26	Althan Char Rasta/Bredliner Circle	PTZ

- **Existing location list for Automatic Number Plate Recognition System (ANPR)**

#	Location Name	Arm	Lane
1	Causeway	2	4
2	Sachin GIDC Char Rasta	2	4
3	Limbayat Mitthi Khadi	2	4

- **Existing location list for Variable Message Signboards (VMS)**

#	Location Name
1	Hirabaug Char Rasta
2	Gujarat Gas Circle
3	Ramnagar Chowk

4.3.3. Exiting Data Center Infrastructure

As mentioned in above section, there are around 158 existing traffic signals junctions, PTZ cameras at 26 locations, ANPR camera at 03 locations for Traffic Surveillance, and Variable Message Sign board system at 03 locations, and Existing Data center at Surat BRTS office, Mandarwaja under ITCS project.

To manage and monitor the ATCS and ITS infrastructure, SSCDL has developed a robust data center at SMC Office (Mandarwaja). For the execution of this project, SSCDL would like to utilize existing Data Center setup only. Requisite details related to the availability of material in Data Center is mentioned below in this section. Further, bidder is requested to carry out detailed Data Center Sizing, including but not limited to: Server and Storage related requirements. Based on the detailed sizing, if there has been a requirement for procuring additional Data Center IT Infrastructure related material to fulfill the Functional & Technical requirement mentioned in this RFP, bidder is requested to procure the same, which are compatible with existing DC infrastructure. Please note that bidder may quote the amount pertaining to the same in their commercial bid. (Schedule B) volume I. The SI is also required to submit the detailed Feasibility study report considering utilization of existing infrastructure and seek the approval from SMC/SSCDL.

Also, a new Integrated Command and Control Center (ICCC) is under implementation by SMC/SSCDL under Smart City initiatives which will also have a Datacenter. Hence, the SI shall be required to shift and migrate the below mentioned components at the datacenter established at New ICCC. The SI shall also provide the migration plan considering minimal hamper to the system. Before migration, the SI have to present a migration plan, which needs to be approved by SSCDL. The SI shall ensure that all the data migration shall be done from existing infrastructure without any data loss and breaches. Below given are the Make & Model and quantities of existing datacentre components implemented by previous vendor.

Datacenter Infrastructure				
#	**Item Description**	**Make**	**Model No.**	**Qty**
1	Application Servers	Dell	Power Edge M630	7
2	Blade Chassis	Dell	M1000E	1
3	Video Management System	Milestone	Milestone Protect Corporate 2019 R3-M01-C01-133-01-6C4B67 Milestone Protect Smart wall - M01-P03-100-01-6CB9DB (86 licenses)	1
5	Anti-virus Software	Quickheal	End Security	15
6	Primary Storage (in TB)	Storage: Dell Enclosure: Dell	Storage: SC7020 Enclosure: SC420	60 TB
7	Secondary Storage (in TB)	Dell	NX3240	285 TB
8	Backup Storage (in TB)	Dell	NX3241	50TB
9	Core Router	CISCO	ASR1001	2
10	L3 Switches	CISCO	WS-C3850-24T-S &	2
11	Core Switch (With 14 SFP module each)	CISCO	WS-C3850-24XS-S	2
12	Layer 2 Switch	CISCO	SG500-28	3
13	LIU 24 Port	D-Link	NLU-FNDLSCR	1
14	GPS Clock	NASIBUS	MC-1-DE	1
15	Racks	Emerson	Smart Cabinet HD series	2
16	POE Switch	CISCO	SG 300-10P	1
17	KVM Switch	ATEN	ATEN	1
18	LCD Console	ATEN	ATEN	1
19	Firewall	CISCO	4110	1

4.3.4. E-Challan System

Surat Traffic Police has developed the E-challan system along with the E-Challan Application for the generation of E-challans for the traffic violations. It will be the responsibility of the SI to integrate the incidents captured from various system such as proposed RLVD, SVDS, ANPR application under ITCS project with the existing e-Challan system deployed at Police Command Control Center. To achieve the same, the SI has to perform end-to-end integration of RLVD, SVDS, ANPR applications with the existing E-Challan system.

5. Scope of Services for the Project

5.1. Overview

The SI should ensure the successful implementation of the proposed Integrated Traffic Control System (ITCS) as per the scope of services mentioned below. Any functionality not expressly stated in this document but required to meet the needs of the SMC/SSCDL to ensure successful operations of the system shall essentially be under the scope of the SI and for that no additional charges shall be admissible. SI shall implement and deliver the following systems and capabilities linked with Integrated Command and Control center/Traffic Command and Control Center.

- Implementation of Adaptive Traffic Control System (ATCS)
- Implementation of Red-Light Violation Detection (RLVD) System
- Implementation of Automatic Number Plate Recognition (ANPR) System
- Implementation of Traffic Surveillance Cameras (PTZ)
- Implementation of Speed Violation Detection System
- Integration with existing Surat OFC project in BRTS route/corridor for Data connectivity to transfer data from field device to the Traffic Command Center (TCC)/Integrated Command and Control Center (ICCC).
- MPLS network services to transfer the data from field devices to the Traffic Command Center (TCC)/Integrated Command and Control Center (ICCC) for non-BRTS junctions.
- Set up ITCS Project's Application - Installation & Commissioning in Integrated Command and Control Center (ICCC) and in Traffic Command Center (TCC) of ITCS Project's applications.
- Migration of existing Data center (DC)'s components set up at BRTS Office, Man Darwaja to New Data Center at IT MAC Center.
- Capacity Building Activity
- Comprehensive Annual Operation & Maintenance of the existing components/solutions as mentioned in section 4.3 of this Volume

The SI's scope of work shall include but will not be limited to the following broad areas. Details of each of these broad areas have also been outlined in subsequent sections of this document:

Assessment, Scoping and Feasibility Study: Conduct a detailed assessment, scoping study and develop a comprehensive project plan, including:

Assess existing traffic management systems, applications. Hardware, junction boxes etc. including traffic signaling systems and junction management

Conduct feasibility study for finalization of detailed technical architecture, gap analysis and project plan

Development of traffic management plans for individual signal controls and groups of signal controllers along with pre-planned intervention strategies for special scenarios

Prepare plans for upgradation of traffic control systems to integrate existing traffic control systems and identify the action (replace/upgrade/modify) to be taken on the traffic control systems to achieve synchronization with ITCS applications.

Conduct site surveys to identify need for junction improvement, junction static signage and other necessary site infrastructure

Obtain site Clearance obligations & other relevant permissions

Design, Supply, Installation and Commissioning Field Equipment which includes the following components:

- Adaptive Traffic Control System (ATCS)
- Red Light Violation Detection (RLVD) System
- Automatic Number Plate Recognition (ANPR) System
- Traffic Surveillance Cameras
- Speed Violation Detection (SVDS) System
- Datacenter components

Provisioning **Network Connectivity** which includes design, supply, installation and commissioning of network backbone connectivity for ITCS as per section 5.7.

Integrating live data streams of RLVD, SVD, ANPR systems/application with existing E-Challan System and VMS application,

Provisioning Hardware and Software Infrastructure which includes design, supply, installation and commissioning of IT Infrastructure at TCC and DC. This consist of:

Basic Site preparation services

IT Infrastructure including server, storage, other required hardware, application portfolio, licenses

Establishment of LAN and WAN connectivity inside New Data Center(IT MAC center) limited to scope of infrastructure procured for this project & for the components migrated from existing data center (BRTS Office Man Darwaja Data Center)

Note: As mentioned in previous section, there is Data center set up at Surat (IT MAC Center) by other vendor. SSCDL intends to utilize this exiting Data Center infrastructure (mentioned in section 4.3.3) for the proposed ITCS. SI may consider upgrade / using this exiting infrastructure while designing their solution. And If existing Sever, Storage, Switches, etc. mentioned in section 4.3.3. is not sufficient for the proposed solution then SI have to provide the additional hardware without any financial implication to SSCDL.

Support during execution of acceptance testing and providing necessary training to the different stakeholders including Traffic Police Department as and when required during the contact duration.

Preparation and implementation of the information security policy, including policies on backup and redundancy plan

Preparation of revised traffic signal control plans, alternate signal control plans, KPIs for performance monitoring of transport network, dashboards for MIS

Developing standard operating procedures for operations management and other technical services

Preparation of system documents, user manuals, performance manuals, etc.

Warranty and Annual Maintenance which includes periodic maintenance services for the software, hardware and other IT infrastructure installed as part of ITCS project for a period of 5 years i.e., 1 year warranty & 4 years of CAMC and conducting periodic audits of the project from a third party, if required or instructed by SSCDL.

5.2. Geographical Scope of services

The following is a summary of the geographical extent of the project.

#	System Description	Traffic Junctions/Locations
1	Implementation of New Adaptive Traffic Control System	118 Traffic Junctions
2	Upgradation of Existing Non BRTS Traffic junctions from Fixed mode to ATCS mode.	31 Traffic Junctions
3	Upgradation of existing Phase-1 BRTS corridor Traffic junctions from VAC mode to ATCS mode	45 Traffic Junctions
4	Upgradation of existing Phase-2 Extension BRTS corridor Traffic junctions from VAC mode to ATCS mode	39 Traffic Junctions
5	Upgradation of Newly implemented Traffic junctions by previous vendor from VAC mode to ATCS mode	43 Traffic Junctions
6	Red Light Violation Detection System (RLVD)	12 Traffic Junctions
7	Speed Violation Detection System (SVDS)	15 Locations
8	Traffic Surveillance Camera System (PTZ cameras)	24 Locations
9	Automatic Number Plate Recognition System (ANPR)	14 Locations

The Indicative list of locations to be covered under this project are provided as **Annexure IV.**

5.3. Feasibility study for finalization of detailed technical architecture and project plan

After Work order allocation/signing of contract whichever is earlier, the Systems Integrator needs to deploy local team (based out of Surat) proposed for the project and ensure that a Project Inception Report is submitted to SSCDL which should cover following aspects:

Names of the Project Team members qualifying criteria mentioned in Manpower requirement for service integrator, 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 SI anticipates and the plans they have towards their mitigation

Detailed project plan specifying dependencies between various project activities / sub-activities and their timelines

Installation locations geo mapped preferably on google earth to visually identify the geographical area.

The SI as part of the feasibility study shall also conduct a comprehensive As-Is study of the existing traffic signalling systems which are identified for upgradation, corridors & traffic junctions/intersections (identified for ITCS) during various time periods of day including peak and non-peak hours to establish the key performance indicators (KPI) for the ITCS projects. The KPIs of the study shall be included in the feasibility report. The following minimum parameters should be captured during the comprehensive study.

Volumes of vehicles moving in the road network within the area identified for ITCS implementation

Vehicle type distribution.

Directional distribution.

Physical and visual characteristics of the area.

Travel times, delays between different points of the network.

Additional dependencies with respect to the available infrastructure and geometry at the junctions.

Any other relevant data which the SI anticipates will assist in establishing the benchmarks for the project

The feasibility report 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 including existing ATCS and E-challan System, MIS reporting requirements. The System Integrator shall also identify the customizations/ workaround that need to be made to the available field devices and software solution and submit a document on the Gap analysis and customization/upgradation requirements. The SI will also undertake a feasibility study to assess the reusability of the existing Junction boxes, etc. wherever possible and will submit a reusability report to SSCDL.

Additionally, the System Integrator should provide as part of feasibility report the detailed To-Be designs (Junction layout plans) specifying the following:

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

Application component design including component deployment views, control flows, etc.

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 Gujarat

Location of all field systems and components proposed at the junctions, (KML /KMZ file plotted on GIS platform like google earth etc.)

Height and foundation of Traffic Signals and Standard Poles for Pedestrian signals, Height and foundation of Poles, cantilevers, gantry and other mounting structures for other field devices as per actual site conditions

Location of Junction Box

Location of Network Provider's Point of Presence (PoP)

Design of Cables, Ducts routing, digging and trenching

Electrical power provisioning

The SI shall also identify the customizations/ workaround that would be required for successful implementation and operation of the project. The feasibility report should take into consideration following guiding principles:

Scalability - Important technical components of the architecture must support scalability to provide continuous growth to meet the growing demand of the city traffic. The system should 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. Main technological components requiring scalability are storage, bandwidth, computing performance (IT Infrastructure) and software / application performance. In quantitative terms, there may not be major change in number of Command Centers. Number of Traffic Junctions could be even increased as per the future traffic and transportation requirements

Availability - 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 should 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. The SI shall make the provision for high availability for all the services of the system.

Security - The architecture must adopt an end-to-end security model that protects data and the infrastructure from malicious attacks, theft, natural disasters etc. SI must make provisions for security of field equipment as well as protection of the software system from hackers and other threats. Using Firewalls and Intrusion detection systems such attacks and theft should be controlled and well supported (and implemented) with the security policy. The virus and worm's attacks should be well defended with gateway level Anti-virus system, along with workstation level

anti-virus mechanism. Furthermore, all the system logs should be properly stored & archived for future analysis and forensics whenever desired. SSCDL may carry out the Security Audit of the entire system post acceptance / operationalization through a Third-Party Auditor (TPA). The following guidelines need to be observed for security:

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.

The most appropriate level of security commensurate with the value to that function for which it is deployed must be chosen

Access controls must be provided to ensure that the system is not tampered or modified by the system operators.

Implement data security to allow for changes in technology and business needs.

The security of the field devices must be ensured with system architecture designed in a way to secure the field devices in terms of physical damage & unauthorized access.

Manageability - 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

Interoperability - The system should have capability to take inputs from other third-party systems as per situational requirements

Open Standards - System should use open standards and protocols to the extent possible without compromising on the security

Convergence - SMC has already initiated many projects which have state of the art infrastructure at field locations deployed under them. The ITCS System Integrator shall ensure leveraging the existing infrastructure for optimum utilization, and hence the SI shall submit a re-usability report for all IT, non-IT Infrastructure during the feasibility study period after signing of contract. Further, ITCS Infrastructure should be made scalable for future convergence needs. Under the smart city program, SMC/SSCDL has envisaged to create a state-of-the-art infrastructure and services for the citizens of Surat, hence it is imperative that all infrastructure created under the project shall be leveraged for maximum utilization. Hence the System Integrator is required to ensure that such infrastructure will allow for accommodation of equipment's being procured under other smart city projects. Equipment like Junction Boxes and poles deployed under the ITCS project at the field locations will be utilized to accommodate field equipment's created under the other projects of SMC. The procedure for utilization of the infrastructure will be mutually agreed between the SMC and System Integrator

Sub-contracting / Outsourcing shall be allowed only for the work which is allowed as mentioned in the clause with prior written approval of SSCDL. However, even if the work is sub-contracted / outsourced, the sole responsibility of the work shall lie with the SI. The SI shall be held responsible for any delay/error/non-compliance etc. of its sub-contracted vendor. The details of the sub-contracting agreements (if any) between both the parties would be required to be submitted to SSCDL. Sub-contracting / outsourcing would be allowed only for work such as:

- Passive Networking & Civil Work during implementation,

- Staff for non- IT support during post-implementation

5.4. Site Clearance obligations & other relevant permissions

5.4.1. Survey and Commencement of Works

Prior to starting the site clearance, the SI shall carry out survey of field locations as specified in **Annexure IV**, for buildings, structures, fences, trees, existing installations, etc. The SSCDL 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 SSCDL.

5.4.2. Existing Traffic Signal system

The SI shall have to take appropriate survey and assumption on the existing traffic signal system infrastructure to be dismantled and replaced with the new system(if required) which are proposed and required under the scope of the RFP. SI has to submit feasibility report considering the utilization of existing infrastructure. Necessary approval to be sought for replacement with new system. The Existing infrastructure should be utilised to derive economies for the project. The dismantled infrastructure shall be delivered at the SSCDL designated location without damage at no extra cost. All the cost pertaining to dismantling, transportation, loading, unloading, any other cost pertaining dismantling, etc needs to be considered.

5.4.3. Road signs

All existing road signs which are likely to be affected 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 SSCDL/Authority's guidelines. Road signs, street name plate, etc. damaged by the SI during their operation shall be repaired or replaced by SI at no additional cost.

5.4.4. Electrical works and power supply

The SI shall directly interact with electricity boards for provision of mains power supply at all desired locations for ITCS field solution. For those locations where the existing power supply is there in place, the SI will be required to lay necessary power cables with conduit to draw power up to the junction box. For those locations, where the power supply is required to be obtained to make the components functional, the SI will be responsible to apply and obtain the same on behalf of SMC/SSCDL by undergoing necessary formalities with electricity boards for the provision of main power supply at desired location. Necessary expense on actuals, based on the payment receipt from the electricity board in terms of meter charge, connection charge, etc. will be reimbursed to the SI. The recurring electricity charges will be borne by SMC/SSCDL. Since the component has dependency on approval from other agencies, SI should plan this requirement will in advance & submit the application to electricity provider through SMC/SSCDL.

5.4.5. Lightning-proof measures

The SI shall comply with lightning-protection and anti–interference measures for system structure, equipment type selection, equipment earthing, power, signal cables laying. The SI shall describe the planned lightning-protection and anti –interference measures in the feasibility 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, antifouling, waterproof function & should 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. Data line protection shall be installed as per zone defined in IEC 62305.Type 1 device shall be installed between zone 0B and zone 1. Type 2 devices shall be installed before the equipment in zone 2 and 3.

5.4.6. 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, RLVD, SVD, ANPR junction shall have adequate earthing. Further, earthing should be done as per Local state national standard in relevance with IS standard.

Earthing should be done for the entire power system and provisioning should be there to earth UPS systems, Power distribution units, etc. so as to avoid a ground differential.

All metallic objects that are likely to be energized by electric currents should be effectively grounded.

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.

The earth connections shall be properly made.

A complete copper mesh earthing grid needs to be installed for the server farm area, every rack needs to be connected to this earthing grid. A separate earthing pit needs to be in place for this copper mesh.

5.4.7.Cabling Infrastructure

The System Integrator shall provide standardized cabling for all devices and subsystems in the field and Integrated Command and Control Center/Traffic Command Center. The SI shall study the reusability of existing cables already being used at the sites and submit a cable reusability report to SSCDL and identify which cables may be utilized and which ones require replacement to ensure successful operations of the system as per the SLAs defined. The report will also contain the cable migration plan.

SI 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.

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.

Cabling must be carried out per relevant BIS standards. All cabling shall be documented in a cable plan by the SI.

5.4.8. Safety Guidelines to be adhered during the implementation & Operation Maintenance

At each installation site (around pit digging), proper Barricading, Fluorescent Light, Reflective Signage, etc. should be placed to avoid any accident.

Necessary Safety Shoes, Reflective Jacket, Helmet, Safety Belt etc. should be provisioned for on ground manpower working at the installation site.

Implementation site should be cleaned and restored properly post completion of the work to avoid any incident/accident.

Not to damage any existing pipes, wires, cables that come in way of digging/trench to avoid disruption in the other services.

All the activities should be planned in sync or back-to-back manner like i.e., Digging->PCC->Reinforcement->Footing->Column->Refilling, etc.

During the course of installation, if any utility services or roads or other SMC assets or third-party assets etc. are damaged, then the SI has to repair and reinstate the same at his own cost.

5.5. Design, Supply, Installation, Upgradation & Commissioning of the Field Equipment

The Scope includes Supply, Installation, Commissioning and Customization (as required) of various field systems which include Adaptive Traffic Control System (ATCS) at Traffic Junctions, Traffic Surveillance Cameras, ANPR Cameras, Red Light Violation Detection system, Speed Violation Detection System, and other IT infrastructure required for successful operation of the ITCS modules.

Based on the approved feasibility report, the SI will undertake the system configuration and customization in line with the changed, improved or specific requirements of Surat Traffic Police and SSCDL including:

The implementation methodology and approach must be based on the global best practices in-order to meet the defined Service Levels during the operation.

Best efforts have been made to define major functionalities for each sub- system of ITCS. However, System Integrator should not limit its offerings to the functionalities proposed in this RFP and is suggested to propose any functionality over and above what has already been given in this tender.

The SI shall design the field level equipment architecture to ensure maximum optimization of network equipment, poles/gantry, cantilever, mounting infrastructures, power supply equipment including, electric meters and junction box.

Finally approved/accepted solution for each component of ITCS shall be accompanied with "System Configuration" document and the same should be referenced for installation of ITCS at Junctions that are identified within the scope of this project.

The 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.

The SI shall be responsible for obtaining all permits and approvals necessary to install the ITCS components as per the approved design.

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.

5.5.1. Adaptive Traffic Control System (ATCS)

The broad scope of work to be covered under ATCS sub module will include the following, but is not limited to:

Preparation of Solution Architecture and Gap Analysis as per project blueprint to develop a final BOQ for new installation and upgradation of existing traffic signalling systems.

Installation of vehicle detectors, controllers, Traffic light aspects, poles, cantilevers, Junction Box and other required accessories for successful operation of the ATCS for SSCDL, Surat Traffic Police

Integration of ATCS (both existing and new) field infrastructures with existing ATCS software applications.

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.

Third Party Audit of the ATCS implementation and its performance evaluation as per SLA's defined in the RFP.

5.5.2. Red Light Violation Detection (RLVD) System

The broad scope of work to be covered under this sub module will include the following, but is not limited to:

The SI shall install the RLVD Systems at locations mentioned in Annexure IV. This system shall capture the infractions of red light and stop line violations at these junctions.

The SI 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

SI. The SI shall supply all of the necessary equipment for the RLVD solutions to meet the Functional & Technical requirements mentioned in the RFP.

The solution proposed by the SI shall have the capability to seamlessly integrate with the exiting E-Challan system implemented by Surat Traffic Police as part of this project. SSDL shall facilitate to get access to the Driver and Vehicle database. Bidder shall be required to access the same through use of appropriate APIs. However, SI is responsible to comply all the requirement (including but not limited to security audit of infrastructure, application, etc.) without any additional cost to SSCDL/SMC.

The SI shall be responsible for providing all the necessary IT infrastructure for analysis, storage & retrieval of the infraction information at ICCC/TCC.

The SI to install the suitable mounting structure as per actual site conditions.

Red Light Violation Detection (RLVD) system is a system for capturing details of vehicles that have crossed the stop line at the junction while the traffic light is red.

The RLVD system Including ANPR capabilities should be integrated with the various application and Databases like VAHAN, and e-Challan application (to be developed under this project) etc. such that e-Challans can be generated by the system through an automated process.

For more details on technical and functional specifications of Red Light Violation Detection (RLVD) system, SI should refer to Annexure I, and Annexure II for Functional and Technical specifications respectively.

5.5.3.Speed Violation Detection System

The broad scope of work to be covered under this sub module will include the following, but is not limited to:

The SI shall install the Speed Violation Detection Systems at locations mentioned in Annexure IV. At the time of BoQ finalization SI shall also survey the location of exiting cameras and suggest if there are overlapping of locations mentioned in the RFP. This system shall capture the infractions of speed violations at these locations.

The SI shall design, supply, and install the SVD system as defined in the RFPs, all wiring connections to the traffic signal controllers and to the camera platforms shall be installed by the SI. The SI shall supply all of the necessary equipment for the SVD solutions to meet the Functional & Technical requirements mentioned in the RFP.

The solution proposed by the SI shall have the capability to seamlessly integrate with the exiting E-Challan system implemented by Surat Traffic Police as part of this project. SSDL shall facilitate to get access to the Driver and Vehicle database. Bidder shall be required to access the same through use of appropriate APIs. However, SI is responsible to comply all the requirement (including but not limited to security audit of infrastructure, application, etc.) without any additional cost to SSCDL/SMC.

The SI shall be responsible for providing all the necessary IT infrastructure for analysis, storage & retrieval of the infraction information at ICCC/TCC.

The SI to install the suitable mounting structure as per actual site conditions.

For more details on technical and functional specifications of Speed Violation Detection system, SI should refer to Annexure I, and Annexure II for Functional and Technical specifications respectively.

5.5.4. Traffic surveillance system

The broad scope of work to be covered under this sub module will include the following, but is not limited to:

The SI shall install Traffic Surveillance Cameras for traffic monitoring and management at locations mentioned in Annexure IV. SI shall also survey the location of exiting cameras and suggest if there are overlapping of locations mentioned in the RFP.

The SI 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.

The SI shall design, supply, and install the traffic surveillance cameras as defined in the RFP, all wiring connections (Data, Power, Network) for the system shall be installed by the SI. The SI 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.

The SI shall be responsible for providing all the necessary IT infrastructure for monitoring, recording, storage & retrieval of the infraction information at ICCC/TCC.

For more details on technical and functional specifications of Traffic Surveillance Detection system, SI should refer to Annexure I, and Annexure II for Functional and Technical specifications respectively.

5.5.5. ANPR Cameras

The broad scope of work to be covered under this sub module will include the following, but is not limited to:

The SI shall install the ANPR Cameras at locations mentioned in Annexure IV. SI shall also survey the location of exiting cameras and suggest if there are overlapping of locations mentioned in the RFP. This system shall automatically capture the license number plate of the vehicle at these junctions.

The SI 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 SI 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.

The SI shall be responsible for providing all the necessary IT infrastructure for detection, analysis, storage & retrieval of the infraction information at ICCC/TCC.

For more details on technical and functional specifications of ANPR Cameras, SI should refer to Annexure I, and Annexure II for Functional and Technical specifications respectively.

5.6. Scope of Integration for ITCS Component.

#	System	Integration Responsibility of SI	Primary User			Secondary User			
			Entity	Data Requirement	Purpose	Entity	Data Requirement	Purpose	
1	Adaptive Traffic Control System (ATCS)	Existing ATCS Software, Existing ICCC application,	Traffic Police/ Police Department	Real time traffic density at each traffic junction.		Reduce Transit Time. Smooth Flow of traffic. Centralized Traffic Management	SMC	Real time traffic density at each traffic junction.	Traffic Analysis for Infrastructure development to reduce the transit time and Maintenance of Traffic Signals
2	Red Light Violation Detection (RLVD) System	Existing E Challan Software of Police Department, Vahan Database, Existing ICCC application	Traffic Police/ Police Department	Snapshot & video Clip of vehicle violating Traffic signal rules. Registration number of the vehicle.		To Generate E Challan for traffic violation.	SMC	Snap Shot & Video Clip	Data storage as per RFP, analysis or monitoring of civic services
3	Automatic Number Plate Recognition (ANPR) System	Centralized Database of Police department (Hot listing database available), Existing E Challan Software of Police Department , Existing ICCC	Police Department	Registration Number of the vehicle. Overview snap shot of the vehicle & Video Clip of the vehicle		Database of the vehicle entering the city. Generate alert for suspicious vehicle. Track the vehicle in case of crime	SMC	Snapshot & Video Clip	Data storage as per RFP

#	System	Integration Responsibility of SI	Primary User		Secondary User			
		application, Vahan Database						
5	Traffic Surveillance Cameras	Existing Video Management Software, Existing ICCC application	Traffic Police	Live Video Feeds	Monitoring, Face Recognition	SMC	Live Video Feeds	Monitoring for unauthorized utilization for government property and other civic services
6	Speed Violation Detection System	Existing E Challan Software of Police Department, Vahan Database, Existing ICCC application	Traffic Police	Snapshot & Video clip of the vehicle violating speed limit	To Generate E Challan for speed violation.	SMC	Snapshot & Video Clip	Data storage as per RFP

5.7. Design, Supply, Installation and Commissioning of Network & Backbone Connectivity for ITCS

Network & Backbone Connectivity is an important component of the project and needs very careful attention in assessment, planning and implementation. It is important not only to ensure that the required connectivity is provisioned within the required timelines but also ensure that it is reliable, secure and supports the required SLA parameters of Latency, Jitter, Packet Loss and Performance.

It is envisaged that the ITCS system shall leverage City Network Backbone infrastructure that is being created under "Surat Connected" project under other smart city initiatives. In case SMC/SSCDL's existing network connectivity is available at nearby location then SI shall be responsible for cable laying(CAT6/Fiber), trenching, ducting, Piping(conduiting), Splicing, including all other accessories(including but not limited to fiber termination box/compass) for termination of LAN cable/last mile connectivity for RLVD, SVD, PTZ, and ATCS solutions The cost for relevant activity and material will be paid as per approved rate during the contract period on actuals.

For other locations where existing connectivity (Connected Surat Project's fiber) is not available at these locations bidder has to procure **bandwidth as a service** for the Implementation period + 5 Years post Go Live of project (Entire Contact Duration) in order to meet the requirements as defined within the service level agreement. Further, for testing during the implementation& commissioning period bidder has to provide the required bandwidth without any additional cost to SSCDL. The bidder should provide connectivity over MPLS network. It is necessary to provide the wired connectivity at all these locations. No additional cost (i.e., RI, RoW, Security Deposit, Cable laying, trenching, ducting, additional hardware, etc.) will be provided to the SI for the bandwidth as service.

The SI should provide a detailed network architecture of the overall system, incorporating findings of site survey exercise. The network so envisaged should be able to provide real time data streams to the ICCC/TCC. All the components of the technical network architecture should be of industry best standard and assist SI in ensuring that all the connectivity SLAs are adhered to during the operational phase.

The SI shall prepare the overall network connectivity plan for this project. The plan shall comprise of deployment of network equipment at the junctions to be connected over network, any clearances required from other government departments for setting up of the entire network. The network architecture proposed should be scalable and in adherence to network security standards. Last Mile to be defined as "the access link from the service provider's PoP – (as per Telco Standards) to the field device".

The SI is responsible to provide the Aggregated bandwidth at the IT MAC Data center. Also, SI is responsible to integrate the MPLS network with existing Connected Surat Network at Data Center level. Necessary hardware's required for this integration/handshake between two networks shall be provided as part of this project without any financial implication to SSCDL.

The actual bandwidth requirement to fulfill the RFP requirement and SLAs would be calculated by the SI and the same shall be clearly proposed in the technical proposal with detail calculations.

SSCDL also requires the SI to meet the parameters of video feed quality, security & performance and thus SIs should factor the same while designing the solution. SSCDL reserves its right to ask the Systems 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.

In case the Telecommunication guidelines of Government of India require the purchaser to place Purchase Order to the Service Provider for bandwidth, SSCDL shall do so. However, Systems Integrator shall sign a contract with Telecom Service Provider(s) and ensure the performance. SSCDL shall make payments to the Systems Integrator.

The 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.

5.8. Design, Supply, Installation and Commissioning of IT Infrastructure at DC

As mentioned in above section, there are around 158 existing traffic signals junctions, PTZ cameras at 26 locations, ANPR camera at 03 locations for Traffic Surveillance, and Variable Message Sign board system at 03 locations, and Existing Data center at Surat BRTS office, Mandarwaja under ITCS project.

To manage and monitor the ATCS and ITS infrastructure, SSCDL has developed a robust data center at SMC Office (Mandarwaja). For the execution of this project, SSCDL would like to utilize existing Data Center setup only. Requisite details related to the availability of material in Data Center is mentioned below in this section. Further, bidder is requested to carry out detailed Data Center Sizing, including but not limited to: Server and Storage related requirements. Based on the detailed sizing, if there has been a requirement for procuring additional Data Center IT Infrastructure related material to fulfill the Functional & Technical requirement mentioned in this RFP, bidder is requested to procure the same, which are compatible with existing DC infrastructure. Please note that bidder may quote the amount pertaining to the same in their commercial bid. (Schedule B) volume I. The SI is also required to submit the detailed Feasibility study report considering utilization of existing infrastructure and seek the approval from SMC/SSCDL.

Also, a new Integrated Command and Control Center (ICCC) is under implementation by SMC/SSCDL under Smart City initiatives which will also have a Datacenter. Hence, the SI shall be required to shift and migrate the below mentioned components at the datacenter established at New ICCC. The SI shall also provide the migration plan considering minimal hamper to the system. Before migration, the SI have to present a migration plan, which needs to be approved by SSCDL. The SI shall ensure that all the data migration shall be done from existing infrastructure without any data loss and breaches. Below given are the Make & Model and quantities of existing datacentre components implemented by previous vendor.

Datacenter Infrastructure				
#	**Item Description**	**Make**	**Model No.**	**Qty**
1	Application Servers	Dell	Power Edge M630	7
2	Blade Chassis	Dell	M1000E	1

Datacenter Infrastructure				
#	**Item Description**	**Make**	**Model No.**	**Qty**
3	Video Management System	Milestone	Milestone Protect Corporate 2019 R3-M01-C01-133-01-6C4B67 Milestone Protect Smart wall - M01-P03-100-01-6CB9DB (86 licenses)	1
5	Anti-virus Software	Quick-heal	End Security	15
6	Primary Storage (in TB)	Storage: Dell Enclosure: Dell	Storage: SC7020 Enclosure: SC420	60 TB
7	Secondary Storage (in TB)	Dell	NX3240	285 TB
8	Backup Storage (in TB)	Dell	NX3241	50TB
9	Core Router	CISCO	ASR1001	2
10	L3 Switches	CISCO	WS-C3850-24T-S &	2
11	Core Switch (With 14 SFP module each)	CISCO	WS-C3850-24XS-S	2
12	Layer 2 Switch	CISCO	SG500-28	3
13	LIU 24 Port	D-Link	NLU-FNDLSCR	1
14	GPS Clock	NASIBUS	MC-1-DE	1
15	Racks	Emerson	Smart Cabinet HD series	2
16	POE Switch	CISCO	SG 300-10P	1
17	KVM Switch	ATEN	ATEN	1
18	LCD Console	ATEN	ATEN	1
19	Firewall	CISCO	4110	1

Further, SSCDL has already installed Operator Workstation at the IT MAC/ICCC. Where SI has to install the RLVD, SVD, ANPR, VMS and ATCS application's client licenses for monitoring of the parameters of respective solutions.

SI has to ensure that redundancy is provided for all the key components to ensure that no single point of failure affects the performance of the overall system. It will be SI's responsibility to:

Establish LAN and WAN connectivity at IT MAC/ICCC DC for ITCS components, and Police Control room is under the scope of SI.

The SI shall provide system integration services to customize and integrate the applications procured through the projects. The ITCS applications proposed by the SI under this project should have open APIs and should be able to integrate and share the data with existing ICCC application available with SSCDL and/or other third-party systems already available or coming up in the near future. SI has to do the necessary integration with the existing ICCC application as per requirement of the SSCDL.

5.9. Preparation and implementation of the Information security policy, including policies on backup

The SI shall prepare the Information Security Policy for the overall Project and the same would be reviewed and then finalized by SSCDL & its authorized committees. The Security policy needs to be submitted by the System Integrator within 1st quarter of the successful Final Acceptance Tests. SI has to provide the necessary support during the review of Third Party security audit. Further, SI is responsible to close the open issue provided post Third Party Security audit without any additional cost to SSCDL/SMC.

5.10. Row and Restoration Charges

- SI is required to carry out complete process as per SMC guidelines including taking permission. SSCDL/SMC will provide necessary support to expedite the permission.
- The security deposit required to be paid at the time of Road Digging Permission will be
- waived off by SMC.
- The Road Reinstatement Charge (RI Charge) will be reimbursed on quarterly basis as per
- actuals on submission of bills.
- In case of HDD, the Road Reinstatement Charges will be calculated considering the actual road that has been dug (the pit area).
- Annual Rentals as per SMC policy will be waived off by SMC.
- The SI shall inform all concerned authorities and obtain NOC or permissions as required before starting work.
- In case of the permission is required from any other authority apart from SMC, the SI is
- required to coordinate. SMC/SSCDL will facilitate and provide necessary support to expedite the same.

5.11. Testing and Acceptance Criteria

5.11.1. Factory Testing

SMC/SSCDL may ask for Factory acceptance testing of the materials/components supplied under this project at OEM/Manufactures location/Third Party Lab in India and all the costs towards inspection & testing shall be borne by SI. SI is also required to bear all the expenses including lodging and boarding expense of Authorized representatives(2 person) from SSCDL/SMC.

5.11.2. Inspection

Inspection shall involve scrutiny of documents for various IT / Non-IT components to verify if the specifications conform to the technical and functional requirements mentioned in the Tender and subsequent corrigendum. SSCDL/SMC reserves right to conduct physical inspection of the equipment delivered to ensure that they arrive at the sites in good condition and are free from physical damage and incomplete shipments and shall return the products to the supplier at the supplier's expenses if the same is not as per RFP requirements. Physical inspection of hardware will also include physical checking and counting of the delivered equipment in presence of the Successful SI. This equipment will only be acceptable as correct when each received item corresponds with the checklist that will be prepared by the Successful SI prior to shipment. Any shortfalls in terms of number of items received may render the delivered equipment incomplete. This is required to be carried out for all request orders/work order issued under this project.

5.11.3. Final Acceptance Testing

1. The SSCDL/SMC/Police Department shall review and finalize the detailed acceptance test plan proposed by the SI. The SSCDL/SMC/Police Department would also conduct audit of the process, plan and results of the Acceptance Test carried out by the SI for both IT & non-IT components. If required SSCDL/Police Department may carry out the testing from the third party. The SSCDL/SMC/Police Department would issue certification of completion for

which SSCDL/SMC/Police Department shall verify availability of all the defined services as per the RFP. The SI shall be required to demonstrate all the services, features, functionalities as mentioned in the agreement.

2. SI shall demonstrate the following mentioned acceptance criteria prior to acceptance of the solution as well as during project operations phase, in respect of scalability and performance etc. The Acceptance criteria parameters may get revised and finalized with mutual agreement, however, the decision of SSCDL/SMC/Police Department would be final and binding in this regard. A comprehensive system should be set up that would have the capability to log & track the testing results, upload & maintain the test cases and log & track issues/bugs identified.
3. Commissioning shall involve the completion of the site preparation, supply and installation of the required components and making the Project available to the SSCDL/SMC/Police Department for carrying out live Operations and getting the acceptance of the same from the SSCDL/SMC/Police Department. Testing and Commissioning shall be carried out before the commencement of Operations.
4. The following table depicts the details for the various kinds of testing envisaged for the project:

Type of Testing	Responsibility	Scope of Work
System Testing	SI	1. SI to perform System testing 2. SI to prepare test plan and test cases and maintain it. SSCDL/SMC/Police Department may request the SI to share the test cases and results 3. Should be performed through manual as well as automated methods. 4. All hardware and software items must be installed at respective sites as per the requirement of SSCDL/SMC. 5. The SI shall be required to demonstrate all the features / facilities / functionalities as mentioned in the RFP. 6. Automation testing tools to be provided by SI. SSCDL/SMC/Police Department doesn't intend to own these tools
Integration Testing	SI	1. SI to perform Integration testing 2. SI to prepare and share with SSCDL/SMC/Police Department the Integration test plans and test cases 3. SI to perform Integration testing as per the approved plan

Type of Testing	Responsibility	Scope of Work
		4. Integration testing to be performed through manual as well as automated methods 5. Automation testing tools to be provided by SI. SSCDL/SMC/Police Department doesn't intend to own these tools
Performance and load Testing	SI	1. SI to do performance and load testing. 2. Various performance parameters such as transaction response time, throughput, page loading time should be taken into account. 3. Load and stress testing of the Project to be performed on business transaction volume 4. Test cases and test results to be shared with SSCDL/SMC. 5. Performance testing to be carried out in the exact same architecture that would be set up for production. 6. SI need to use performance and load testing tool for testing. SSCDL/SMC doesn't intend to own these tools. 7. SSCDL/SMC if required, could involve third party auditors to monitor/validate the performance testing. Cost for such audits to be paid by SSCDL/SMC.
Security Testing (including Penetration and Vulnerability testing)	SI	1. The solution should demonstrate the compliance with security requirements as mentioned in the RFP including but not limited to security controls in the application, at the network layer, network, data centre(s), security monitoring system deployed by the SI 2. The solution shall pass vulnerability and penetration testing for rollout of each phase. The solution should pass web application security testing for the portal/application, and other systems and security configuration review of the infrastructure. 3. SI should carry out security and vulnerability testing on the developed solution.

Type of Testing	Responsibility	Scope of Work
		4. Security testing to be carried out in the exact same environment/architecture that would be set up for production. 5. Security test report and test cases should be shared with SSCDL/SMC 6. Testing tools if required, to be provided by SI. SSCDL/SMC doesn't intend to own these tools 7. The SI shall be responsible for the security audit of the established ITCS system to be carried out by a CERT-In empanelled vendor prior to Go Live of the Project without any financial implication to SMC/SSCDL. During O&M phase, VA/PT (Vulnerability assessment and Penetration Testing) activities, audits and application security testing must be carried out on once-a-year basis ensuring optimal operation and security of the Integrated Traffic Control system infrastructure and applications without any financial implication to SSCDL. As a result of Security Audit and VAPT the cost of suggested rectification of non-compliance shall be borne by the SI. SSCDL/SMC will also involve third party auditors to perform the audit/review/monitor the security testing carried out by SI. Cost for such auditors to be paid by SSCDL/SMC. However, the cost of rectification of non-compliance shall be borne by the SI.
User Acceptance Testing (UAT) of Project	• SSCDL/SMC/Police Department or appointed third party auditor	1. SSCDL/SMC/Police Department or appointed third party auditor to perform User Acceptance Testing 2. SI to prepare User Acceptance Testing test cases 3. UAT to be carried out in the exact same environment/architecture that would be set up for production 4. SI should fix bugs and issues raised during UAT and get approval on the fixes from

Type of Testing	Responsibility	Scope of Work
		SSCDL/SMC / third party auditor before production deployment 5. Changes in the application as an outcome of UAT shall not be considered as Change Request. SI has to rectify the observations.

Note:

- The SI shall provide the details of the testing strategy and approach including details of intended tools/environment to be used by SI for testing in its technical proposal. SSCDL/SMC does not intend to own the tools.
- The SI shall work in a manner to satisfy all the testing requirements and adhere to the testing strategy outlined. The SI must ensure deployment of necessary resources and tools during the testing phases. The SI shall perform the testing of the solution based on the approved test plan, document the results and shall fix the bugs found during the testing. It is the responsibility of SI to ensure that the end product delivered by the SI meets all the requirements specified in the RFP. The SI shall take remedial action based on outcome of the tests.
- The SI shall arrange for environments and tools for testing and for training as envisaged. Post Go-Live; the production environment should not be used for testing and training purpose. Detailed process in this regard including security requirement should be provided by the SI in its technical proposal. The process will be finalized with the selected bidder.
- If required, SSCDL/SMC may appoint any Third-Party Auditors directly at its cost. SI needs to prepare and provide all requisite information/documents/support to third party auditor. The cost of rectification of non-compliances shall be borne by the SI.
- Necessary tests related to civil and electric work covering the pole structure, material, workmanship, etc. will be carried out by the SI as per prevailing standard through government approved entities.
- If it is found that the product/solution is not as per expected parameter, SMC/SSCDL may ask the SI to carry out testing through its testing entity and the cost in this regard shall have to be borne by the SI.
- SI is required to submit software manuals / brochures / Data Sheets / CD / DVD / media for all the Project supplied components - For both IT & Non-IT equipment's.

Any delay by the SI in the Final Acceptance Testing shall render him liable to the imposition of appropriate Penalties. However, delays identified beyond the control of SI shall be considered appropriately and as per mutual agreement between SSCDL and SI.

5.11.4. Go Live Preparedness and Go Live

1. SI shall prepare and agree with SSCDL/Police Department, the detailed plan for Go-Live (in-line with SSCDL/Police Department's implementation plan as mentioned in RFP).
2. The SI shall define and agree with SSCDL/Police Department, the criteria for Go-Live.
3. The SI shall ensure that necessary data integration and data migration is done from existing systems.
4. SI shall submit signed-off UAT report (issue closure report) ensuring all issues raised during UAT are being resolved prior to Go-Live.
5. SI shall ensure that Go–Live criteria as mentioned in User acceptance testing of Project is met and SI needs to take approval from SSCDL team on the same.
6. Go-live of the application shall be done as per the finalized and agreed upon Go-Live plan.
7. The decision of SMC/SSCDL shall be final and binding in this regard.

5.12. Training and Capacity Building

SI is responsible for providing required training as mentioned below:

1. Training to the staff of SSCDL/SMC, Command Centre Operators, Police Department's staff and SSCDL's appointed agencies on related operations of the Project including reports generation etc.
2. The SI's scope of work also includes preparing the necessary documentation and aids required for successful delivery of such trainings.
3. SI will prepare all the requisite audio/visual training aids that are required for successful completion of the training for all stakeholders such as
    - Training manuals
    - Computer based training modules
    - Operations, back end modules, business intelligence, dynamic reporting etc.
    - Presentations
    - User manuals
    - Operational and maintenance manuals for RLVD, SVD, ANPR, ATCS and VMS application
    - Regular updates to the training aids prepared under this project
4. SI is responsible for providing user manuals in English and Gujarati at the time of training. The user manual should also be periodically updated (if necessary) and provided in hard copy as well as in soft copy.
5. SI will get the Training and capacity building strategy including training material finalized with SSCDL/SMC before starting the training programs.
6. SI must plan all the training and its material keeping defined and agreed SOPs.
7. Training on basic troubleshooting of all equipment/infrastructure during comprehensive onsite warranty and O&M support of equipment/infrastructure to SSCDL/SMC officials
8. Training sessions should be conducted on a requisite mix of theory & practical operations. The trainings should be conducted in English and Hindi/Gujarati. For practical training, SI is responsible to make provision for necessary equipment's
9. The training shall be carried out for adequate period as mentioned above for which the detailed training schedule along with the content of the training shall be submitted by the SI.

10. SI will have to bear all the cost associated with the conducting such training programs. The space for training shall be provided by SSCDL/SMC/Police Department
11. SI has to ensure that the training sessions held are effective and that the attendees would be able to carry on with their work efficiently. For this purpose, it is necessary that the effectiveness of training sessions is measured.
12. Trainings would be of three types for different phases of the Project:

    Functional Training: This training would focus on the use of the software of the various ITCS components at Traffic Command Center, so that the users are aware of all the operations of the ITCS and are able to implement the overall process defined by the SMC/SSDCL for optimum use of the system.
    Administrative Training: This training would focus on the administration of ITCS solution and server infrastructure.
    Senior Management Training: This training would focus on how to use the ITCS for day-to-day monitoring by the Sr. Management and access various exception reports.

13. SI has to provide the above-mentioned required training as on requested by the SSCDL/SMC/Police Department without any additional cost to SSCDL/SMC throughout the contract period.

5.13. System Documents and User Manuals

The SI 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:

Project Commencement: Project Plan should provide micro level activities with milestones & deadlines.

Delivery of Material: Original Manuals from OEMs.

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.

Process Documentation: The SI shall be responsible for preparing process documentation related to the operation and maintenance of each and every component of the ITCS Project. The prepared process document shall be formally signed off by SSCDL and Traffic Police before completion of final acceptance test.

a. The SI shall document all the installation and commissioning procedures and provide the same to the SSCDL within one week of the commissioning of SURAT ITCS.

b. The SI 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 SI.

The SI 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.

5.14. Operations and Maintenance for a period of 5 years

Success of the Project would also depend on how the entire Project is managed once the implementation is completed. From the System Integrator perspective too this is a critical phase since the quarterly payments are linked to the SLA's in the post implementation phases. SI shall provide operations and maintenance services for the software, hardware and other IT and Non-IT infrastructure installed as part of project for a period of 5 years (post Go-Live). This would also include the support for various solution components that may be under warranty or AMC.

System Integrator thus is required to depute a dedicated team of professionals (as per section 6.2) to manage the Project and ensure adherence to the required SLAs.

For new installation, SI shall provide Comprehensive operations and maintenance services for the software, hardware and other IT and Non-IT infrastructure installed as part of ITCS project for a period of 5 years i.e., 1 year warranty & 4 years of comprehensive AMC.

For existing systems and infrastructures, SI shall have to upgrade, integrate and maintain all the existing systems and infrastructures (As mentioned in Volume 2, Section 4.3) for the duration of entire contractual period including implementation phase. Existing systems and infrastructures have already been implemented by various agencies of Surat Municipal Corporation (SMC) / Surat Smart City Development limited (SSCDL).

SI shall provide warranty, ATS and maintenance services for the entire solution covering all components including the IT infrastructure and software infrastructure for contract duration. System Integrator shall provide the comprehensive manufacturer's warranty in respect of proper design, quality and workmanship of all hardware, equipment, accessories etc. covered by this bidding document. System Integrator must warrant all hardware, equipment, accessories, spare parts, software etc. procured and implemented as per this bidding document against any manufacturing defects during the warranty period.

Hand-over of the system at the end of the contractual period along with all documentation required to operate and maintain the system. After the completion of contract duration, SI shall hand over the entire solution covering all the components in working condition to SMC/SSCDL.

SI is responsible for sizing and procuring the necessary hardware and software licenses as per the performance requirements provided in the RFP. During the warranty period SI shall replace or augment or procure higher-level new equipment or additional licenses/hardware at no additional cost to the SSCDL/SMC in case the procured hardware or software is not enough or is undersized to meet the service levels and the project requirements.

Following activities to be carried out by SI during Post Implementation Support:

a. Maintain the entire solution, modify, repair or otherwise make improvements in all components, if any to comply with Technical Specifications, Service Level Agreements

specified in RFP.

b. To ensure smooth operation of all components and the entire solution by undertaking routine and periodic maintenance including all periodic software upgrades in order to maintain the Minimum Service Levels specified in RFP.
c. The SI shall carry out Preventive Maintenance (PM) of all components and should maintain proper records. Necessary PM activities including cleaning, washing, blowing, etc. will be carried out with proper security and safety measures from time to time. The PM should be carried out at least once in six months as per industry standard maintaining proper checklist. If required, SSCDL/SMC may ask to modify the maintenance plan/activity to cover additional components/activities.
d. The SI shall carry out Corrective Maintenance for maintenance/troubleshooting of supplied hardware/software and support infrastructure. The SI shall also maintain complete documentation of problems, cause and rectification procedures for building knowledge base for the known problems in centralized repository, accessible to SSCDL/SMC team as well.
e. Take responsibility for any defect or failure of any Components comprising of Hardware and Software (including non-IT/ passive items) due to defective design, material or workmanship, manufacturing or development defects or latent defect or normal wear and tear within the design limit, during the Contract Period.
f. The SI 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. No separate charges shall be paid for visit of engineers or attending to faults and repairs or supply of spare parts.
g. The rectification, change of spare of hardware and software units, modification and all software upgrades (Major and minor) shall have to be undertaken by the System Integrator to cure the faults/defects/deficiency in order to raise speed, efficiency and/or effectiveness of the sub system and achieve a higher performance level of Project within the Remedial Period specified by the SSCDL/SMC.
h. In case if breakdown/ maintenance work is required to be carried out during non-working days/ hours, the bidder shall attend the task(s) during this period at no extra payment.
i. The SI should either repair the equipment, or replace the equipment with new equipment, to ensure that the proposed system/solution is operational. Any equipment is either breakdown, damaged due to the negligence of SI, or any technical reasons, it should be replaced with new equipment or item under the guidance of operational team of the SSCDL/SMC.
j. In case the quoted item is not available in the market, the SI shall have to supply higher Version/ Replacement of that item with prior approval of SSCDL/SMC at no extra cost. No “End of Life” product should be supplied to minimize such instances during OEM support for 5 years. If any spare(s)/ material(s) found defective than the same should be repaired or new spare(s)/ material(s) is to be replaced. In any case secondhand material is not allowed.
k. In case if the SI is not able to repair the original equipment or any part of it, the SI shall supply the new substitute of same specifications or of higher specifications, with prior approval of the concern officer in SSCDL/SMC. In case, if it is found that the substituted

item is of lower quality/specification then the same must be replaced. In case of, repetitive instances, SSCDL/SMC will take punitive action against the bidder.

l. The SI should perform all the tasks that need to be taken to upkeep the proposed system in a 24 x 7 days environment. This includes but not limited to any component breakdowns, reworks; relay of cable/re-configure system that needed to perform / replace the breakdown components etc. as per SLA.

m. The SI should also take up the work including reworks, relaying of cable cuts, shifting of equipment, reconfiguring the system, optimization or performance of the proposed system/solution, re-installation of software, etc. SI to ensure above activities without any additional cost to SMC/SSCDL

n. The SI will supply all the installation material/ accessories/ consumables (e.g., screws, clamps, fasteners, ties anchor, supports, grounding strips, wires etc.) necessary for the installation and operation of the systems.

o. Deploy required number of competent technical manpower /engineers/ supervisors along with necessary spare parts, standby items and inventories of all parts of the proposed system during the Contract period at its own cost for evaluation of performance, operation, maintenance and management of all components in order to maintain the Minimum Service Levels specified in RFP during the Contract period. Necessary technical personnel shall also be deputed by the SI at its own cost for investigating defects and failures and carrying out modifications as and when required during the Contract Period.

p. Ensure smooth operation of the end-to-end solution during the Contract Period by undertaking routine and periodic maintenance of all components and carrying out rectification, modification, software upgrades, change of spare if need so arise in order to maintain the Minimum Service Levels all time during the Contract Period.

q. Ensure uptime and availability of the proposed system/solution, all times of Contract Period at all identified locations in relation to the minimum Service Levels specified in this RFP and the scope specified in RFP

r. Undertake timely upgradation of the system if need so arise during the Contract Period.

s. Prepare a Maintenance Manual and other manuals specified in this RFP in consultation with SSCDL/SMC or its PMC specifying the detailed operation plan, methodology and time period of regular and preventive maintenance, comprehensive information of equipment, hardware, software (including Non-IT/ passive items) used in Project, operation procedure of each sub system installed, the repair and maintenance procedures of each component and hardware of the Project, procedures for diagnosis, removal of bugs and replacement of any item of equipment, diagnosis procedures of faults and procedures for removing it and replacing. These manuals shall be detailed as per the RFP requirements.

t. Provide all MIS report specified in RFP, or any other reports required by SSCDL/SMC.

u. 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 System Integrator fails to meet the above standards of maintenance, there will be a penalty as specified in the SLA.

v. The SI shall also maintain records of all maintenance of the system and shall maintain a

logbook on-site that may be inspected by SMC/SSCDL at any time

w. The support for planning, optimization and tuning of hardware and software after commissioning, whenever needed during Operation period/ Warranty / AMC shall be provided by System Integrator at no extra cost to SMC/SSCDL.
x. Take all precautions to ensure that all software and hardware (including non-IT/ passive items) involved remains safe and secure in general and free from attacks arising from attempted manipulation, fraud, break down, compromising of data security, malware and virus attacks, physical attacks or damage due to neglect or omission.
y. Provide training and handholding support to SSCDL/SMC.
z. The server and other system software should be regularly patched/ updated. Major patching / update which requires system downtime has to be informed well in advance and should be undertaken only after SMC/SSCDL's confirmation.
aa. Necessary network connectivity LAN/WAN will be provided by SMC/SSCDL. However, the SI will be responsible for network configuration and management of the IT infrastructure provided under this project
bb. Ensure that any premises/Project Site provided by SSCDL/SMC to the System Integrator for the purpose of carrying out its obligations shall be used solely for the purpose of carrying out the functions intended, and obligations placed under this contract and not for any other purposes.
cc. The SI shall not permit anti-social activities/illegal activities on Project Site during the Contract Period. Any liabilities arising as consequences of such event shall be borne by the SI. On occurrence of such event, the SI shall solely be responsible for legal remedies and SSCDL/SMC may consider Termination on occurrence of such event.
dd. Take prompt and reasonable action for redressal of each complaint received from users including complaints received by SSCDL/SMC.
ee. Obtain and keep valid all applicable permits/ Licenses required by it under applicable laws for carrying out its scope of work during the Contract Period.
ff. The SI shall be required to hand over all the equipment's under the scope of this project in working condition at the time of completion/termination of the Contract, otherwise the equipment, found faulty, shall be rectified from any external agency and whole replacement/repair cost will be borne by the SI only.
gg. SI is not responsible to maintain the existing infrastructure which is being re-utilized for this scope. However, SI is required to inform the SMC/SSCDL if any damage/discrepancies observed during the monitoring. SMC. SSCDL shall get the faulty equipment repaired by their respective Service Provider.
hh. Warranty Terms shall not be applicable in the event of damages due to Vandalism, tempering of hardware or any of the Project components by Authority's staff or any external party. In such an event, the SSCDL/SMC shall request the SI to repair/replace the damaged component and reinstall the same. Reasonable repair/replacement costs towards the same shall be reimbursed by the SSCDL/SMC to the SI less of insurance proceeds.
ii. During post-implementation period, in case the pole/edge devices in the scope is damaged by a vehicular accident (or due to any other reason outside the control of SI) and needs repair, then the corresponding device will not be part of the SLA monitoring for max. 15 days. SI will need to repair / have the new pole/edge device within 15 days of the incident.

Post 15 days, the corresponding device would be again considered for SLAs. Damages to be borne by SIs in such cases through proper insurance.

jj. The SI shall introduce a comprehensive Assets Management process & appropriate tool to manage the entire lifecycle of every component of the proposed Solution

kk. At the Handover of the existing ATCS junctions, SI has to repaint the existing poles as per requirement of the SSCDL without any additional cost to SSCDL, Pole must be painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or as suggested by SSCDL.

ll. Further, during Operation & Maintenance of New & existing ATCS junction, poles must be painted twice in a year with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or as suggested by SSCDL.

5.14.1. Provision of the Operational Manpower to view the feeds at ICCC/TCC

The SI is required to provide suitable manpower to monitor the data feeds at Traffic Command Centre/ICCC and support SMC and Traffic Police Department in operationalisation of the ITCS project as per section. The exact role of these personnel and their responsibilities would be defined and monitored by SMC and Police Department personnel. System Integrator shall be required to provide such manpower meeting following requirements:

All such manpower shall be minimum graduate pass

All such manpower shall be without any criminal background / record.

SMC 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.

System Integrator shall have to replace any person, if not found suitable for the job.

All the manpower shall have to undergo training from the System Integrator for at least 15 working days on the working of ITCS project and Traffic Command Center. Training should also cover dos & don'ts and will have few sessions from SMC and Traffic Police Department officers on right approaches for monitoring the feeds & providing feedback to SMC, Traffic Police Personnel and other associated government agencies.

Each person shall have to undergo compulsory 1 day training every month

Operational Manpower shall work in 3 shifts, with no person being made to see the feeds for more than 8 hours at a stretch.

Detail operational guideline document shall be prepared during implementation which shall specify detail responsibilities of these resources and their do's & don'ts.

The Current estimation of the manpower required from the SI for viewing of the data feeds is as follows:

#	Description	Quantity
1.	Operational Manpower at Traffic Command Centre (At least 5 in shift 1 and for another shift SI can decide on no but not less than 2)	5

The supervisors required for operationalization of the ITCS project will be provided by SMC, and Traffic Police department as per requirements.

5.14.2. Basic Infrastructure Services

Following services shall be provided by the SI under the basic infrastructure services:

Proactive and reactive maintenance, repair and replacement of defective components (physical and other peripheral IT infrastructure) installed for the Project through this RFP. The cost for repair and replacement shall be borne by the SI.

Any component (Physical & IT installed at the time of Project commissioning) that is reported to be faulty / non-functional on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame agreed upon in the Service Level Agreement (SLA).

Proactive monitoring of the entire basic infrastructure installed.

SI shall maintain records of the maintenance of the basic infrastructure and shall maintain a logbook on-site that may be inspected by the SSCDL and Traffic Police at any time.

5.14.3. Network Monitoring Services

The activities shall include:

1. SI shall provide services for management of SURAT ITCS Project to maintain performance at optimum levels on a 24 x 7 basis.
2. SI shall monitor and administer the network.
3. SI shall create and modify VLAN, assignment of ports to appropriate applications and segmentation of traffic.
4. SI shall carry out break fix maintenance of the LAN cabling or maintenance work requiring civil work.

5.14.4. Integration Testing

This shall be a black box testing role primarily to ensure that the application to be deployed does not disrupt the Surat ITCS operations and affect other Surat ITCS infrastructure in terms of performance and security. The technical tasks to be carried out shall be as follows:

1. Functional Testing: Ensuring that the application functionality as described by the SSCDL, and Traffic Police works adequately. The functional testing of application will necessarily be minimal as this is a core responsibility of the Supplier.
2. Performance Testing: Ensuring that the application meets expressed performance requirements on the Surat ITCS servers by using performance test tools and performance monitoring tools.
3. Security Testing: Testing for exploitable application security weaknesses that undermine the application security or the security of the infrastructure.

5.14.5. Vendor Management Services

The activities shall include:

Coordination with all the project stakeholders to ensure that all Surat ITCS activities are carried out in a timely manner.

SI shall coordinate and follow-up with all the relevant vendors to ensure that the issues are resolved in accordance with the SLAs agreed upon with them.

SI shall also ensure that unresolved issues are escalated to respective departments.

SI shall maintain database of the various vendors with details like contact person, telephone nos., escalation matrix, response time and resolution time commitments etc.

SI shall draw a consolidated quarterly SLA performance report across vendors for consideration of the SSCDL and Traffic Police.

5.14.6. Network Management

The objective of this service is to ensure continuous operation and upkeep of the LAN & WAN infrastructure of the project including all active and passive components. The selected SI shall be responsible to coordinate with Network Service Provider for network related issues between ICCC/TCC, DC, and Traffic Junctions. The services to be provided for Network Management include:

Ensuring that the network is available 24x7x365 as per the prescribed SLAs

Attending to and resolving network failures and snags.

Support and maintain the overall network infrastructure including but not limited to LAN passive components, routers, switches etc.

Configuration and backup of network devices including documentation of all configurations.

24x7x365 monitoring of the network to spot the problems immediately.

Provide information on performance of Ethernet segments, including capacity utilization and error statistics for the segment and the top-contributing hosts, WAN links and routers.

Ensuring timely information to the SMC/SSCDL and Surat Traffic police pertaining to issues of Network Backbone under “Surat Connected” project

5.14.7. Provision of Maintenance Vehicle

SI will have to make available necessary vehicle along with requisite equipment/components like ladder, etc. to carry out implementation and maintenance work (including transportation of items required for Project) during the Contract Period. All the expenses pertaining to vehicle such as driver’s expense, fuel, lubricants, maintenance etc., will have to be borne by the SI. The SI will have to keep minimum 1 number of loaded 4-wheeler & 1 ladder vehicle for maintenance work. If any required, Additional vehicle shall have to be arranged by the SI. The vehicle & related accessories should follow RTO norms of Government of Gujarat.

5.14.8. License Metering / Management

The SI shall track software usage throughout the IT setup so as to effectively manage the risk of unauthorized usage or under-licensing of software installed at the ICCC/TCC, and DC. This may be carried out through the use of standard license metering tools.

5.14.9. Information Security Audits

The SI shall ensure Information end to end security audits of the Integrated Traffic Control system infrastructure and related applications (i.e., RLVD application, SVDS application, ANPR application, Video Management software application, etc.) by a CERT-In empaneled vendor. VA/PT (Vulnerability assessment and Penetration Testing) activities, audits and application security testing must be carried out on once-a-year basis ensuring optimal operation and security of the Integrated Traffic Control system infrastructure and applications without any additional financial implications to SMC/SSCDL. Teams carrying out the audit exercise must be different from the implementation teams. Systematic actionable need to be derived post audits and necessary changes need to be made periodically.

5.14.10. Hand-over of the system at the end of contractual period along with all documentation required to operate and maintain the system

System Integrator will supply to the SMC and Traffic Police Department the following before the expiry of the contract:

- 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;
- 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 SI 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 SI (as the case may be).

6. Manpower requirements for Service Integrator

The SI is expected to maintain an onsite team of experts for the duration of the contract. The details of resources required during the contract period are provided below.

6.1. Implementation Team

SI shall provide the details of implementation team (During the kick off meeting/staring of implementation period) which would consist of the key personnel supported by the other team members during the implementation phase of the project.SI to submit the CV of the key Manpower proposed for review of SSCDL. Project director will represent the views of SI in all review meetings to assist the client on the matters related to the project & Project Manager will be the SPOC for the project during the implementation phase. Minimum resource requirements for core team is mentioned in below table, which should have the same qualification as proposed by the bidder on its technical proposal or as per the qualification / experience criteria specified in the RFP, whichever is higher:

#	Minimum Qualifications	Type of Deployment
1	**Project Director**	On Need basis
	Minimum Education: BE/BTech + MBA /MTech **Total Experience:** At least 15 years in IT sector (Minimum 10 years of ICT based domain experience along with traffic management) & minimum 1 assignment of implementation of Adaptive Traffic Management System in India / globally. **Certificate:** PMP/Prince2 etc.	
2	**Project Manager**	Full Time
	Minimum Education: BE/BTech + MBA /MTech **Total Experience:** At least 10 years in IT sector (Minimum 5 years of ICT based domain experience along with traffic management) & minimum 1 assignment of implementation of Adaptive Traffic Management System in India / globally. **Certificate:** PMP/Prince2 etc.	
3	**Technical Expert- Adaptive Traffic Control System (ATCS)**	Full Time
	Minimum Education: BE /B. Tech (EC/CS/IT) **Total Experience:** At least 7 years in large scale ICT Infrastructure projects. (Minimum 5 years of ICT based domain experience in adaptive traffic management)	
4	**Technical Expert: Traffic Surveillance and Enforcement (ITS)**	Full Time
	Minimum Education: BE /B. Tech (EC/CS/IT)	

#	Minimum Qualifications	Type of Deployment
	Total Experience: At least 7 years in large scale ICT Infrastructure projects. (Minimum 5 years of ICT based domain experience in surveillance and traffic management).	
5	**Technical Expert: Network & Security**	On Need basis
	Minimum Education: BE /B. Tech (EC/CS/IT) **Total Experience:** At least 8 years in large scale ICT Infrastructure projects. (Should have experience in implementation of large IT Network & Security for similar project) **Certificate:** CCNA/CCNP & CISSP	
6	**Technical Expert: Data Centre (Server, Storage, EMS & Software Applications)**	Full Time
	Minimum Education: BE /B. Tech (EC/CS/IT) **Total Experience:** At least 8 years in large scale ICT Infrastructure projects. (Should have experience in implementation of large IT Network & Security for similar project) **Certificate:** CCNA/CCNP & DCCA	

Note: The above mentioned are the minimum indicative list of type and quality of resources required. However, the bidder is free to put additional manpower wherever required in the implementation phase to comply the implementation timelines as per the RFP/contract agreement with no additional cost to the user department.

6.2. Operation & Maintenance Team

SI shall provide the details of support team during O&M phase of the project. The O&M team is required to support all the additional requirements of customization/configuration of the system as per the future requirements of the client. SI to submit the CV of the key Manpower proposed for review of SSCDL prior to O&M Phase commencement. Project Manager will represent the views of SI in all review meetings to assist the client on the project related matters. The tentative resource requirement for team is mentioned in below table and client may direct the SI to deploy additional resources on agreed terms at any time during the contract. SI shall deploy these resources full time onsite.

#	Minimum Qualifications	Type of Deployment
1	**Project Manager (Operations)**	**Full Time**
	Minimum Education: BE/BTech + MBA /MTech **Total Experience:** At least 10 years in IT sector (Minimum 5 years of ICT based domain experience along with traffic management) & minimum 1 assignment of implementation of Adaptive Traffic Management System in India / globally.	

#	Minimum Qualifications	Type of Deployment
	Certificate: PMP/Prince2 etc.	
2	**Technical Expert- Adaptive Traffic Control System (ATCS) and Traffic Surveillance/Enforcement (ITS)**	Full Time
	Minimum Education: BE /B. Tech (EC/CS/IT) **Total Experience:** At least 7 years in large scale ICT Infrastructure projects. (Minimum 5 years of ICT based domain experience in adaptive traffic management)	
3	**Technical Expert: Network & Security**	Full Time
	Minimum Education: BE /B. Tech (EC/CS/IT) **Total Experience:** At least 8 years in large scale ICT Infrastructure projects. (Should have experience in implementation of large IT Network & Security for similar project) **Certificate:** CCNA/CCNP & CISSP	
6	**Technical Expert: Data Centre (Server, Storage, EMS & Software Applications)**	Full Time
	Minimum Education: BE/B. Tech (EC/CS/IT) **Total Experience:** At least 8 years in large scale ICT Infrastructure projects. (Should have experience in implementation of large IT Network & Security for similar project) **Certificate:** CCNA/CCNP & DCCA	
7	**Project Coordinator Command & Control Center**	Full Time
	Any Graduate with proficiency of handling Project Co-ordination job. 4+ Years of Experience of working as a Project Coordinator for IT project. Proficient in English, Hindi and Gujarati language. Relevant Exp.: Must have an experience of managing command and control center.	
8	Field Team (For O&M activities Maintenance)	Full Time
	Should have experience in field installation & configuration	Adequate field team members shall be deployed as per the requirements during operation and Maintenance phase.

Note: The above mentioned are the minimum indicative list of type and quality of resources required. However, the bidder is free to put additional manpower wherever required in the implementation phase to comply the implementation timelines as per the RFP/contract agreement with no additional cost to the user department.

7. Annexure I: Functional requirements

Functional requirements of the Adaptive Traffic Control System (ATCS)

7.1. Adaptive Traffic Control System

#	Building Blocks
1	Traffic Signal Controller
2	Vehicle Detectors
3	Communication Network

7.1.1. Traffic Signal Controller

#	Description	Compliance(Yes/No)
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 mandatorily have a conflict monitoring facility to ensure that conflicting, dangerous triggers are pre-flagged at the programming stage, and these are disallowed even during manual override phase.	
2	The Traffic Signal Controller will be adaptive(real-time) 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 shall 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 shall be provided. Volatile memory shall not be used for storing the junction specific plans or signal timings.	
4	All timings generated within a traffic signal controller shall be digitally derived from a crystal clock which shall be accurate to plus or minus 100 milliseconds.	
5	The controller shall 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 shall have minimum of 10 years battery backup with maximum time tolerance of (+/-) 2 sec per day.	
6	The controller shall have the facility to update the RTC time from ATCS server, GPS and through manual entry.	
7	The controller shall be capable of communicating with the ATCS server through Ethernet on a managed leased line network any other appropriate stable communication network.	
	Specify the proposed Make	

#	Description	Compliance(Yes/No)
	Specify the proposed Model	

Police Panel

The controller shall provide the following facilities in a separate panel with provision for lock (Padlock/Digit Number lock needs to be provided) and key arrangements for use by the Traffic Police.

#	Description	Compliance(Yes/No)
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 shall 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 shall 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 shall resume its normal operation without violating any safety clearances.	

Modes of Operation

The traffic signal controller shall have the following modes of operation:

#	Description	Compliance(Yes/No)
1	**Fixed Time**: In fixed time (pre-timed) mode the traffic signal controller shall execute stage timings according to the site-specific timetable maintained in the traffic signal controller FLASH memory. Inputs from vehicle detectors shall be ignored in this mode and no preemption shall 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 shall 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 shall be possible for all demand actuated stages. Cycle time may vary in every cycle execution.	

#	Description	Compliance(Yes/No)
3	Semi-Actuation: In the semi-actuation mode, the traffic signal controller shall 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 shall execute the Maximum green time configured for the stage. Preemption shall be possible for all demand actuated stages. Cycle time may vary in every cycle execution.	
4	Stage Skipping: The traffic signal controller shall 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.	
6	Vehicle Actuation with Fixed Cycle length: In vehicle actuation with fixed cycle length mode, the traffic signal controller shall 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 shall be maintained constant during a given timeslot. Preemption for all demand actuated stages except for Priority Stage shall be possible.	
7	Full ATCS (FATCS): In FATCS mode, the traffic signal controller shall execute stage timings as per demand within the constraints of Minimum Green, Maximum Green running period for the stage and Cycle time specified by the Central Computer during every cycle switching. Preemption for all demand actuated stages except Priority Stage shall be possible in this mode. The traffic signal controller shall identify a communication failure with the central computer within a specified time period. In such an event the signal plan timings shall be executed from the local timetable stored in the traffic signal controller FLASH memory. Fallback mode of the traffic signal controller shall be vehicle actuated. On restoration of the communication with central computer the traffic signal controller shall automatically resort to FATCS mode. The traffic signal controller shall accept commands for remote selection / de-selection of the following from the Central Computer at Integrated Command and Control Center/ Traffic Command and Control Center. • Hurry Call • Flashing Amber / Flashing Red • Junction Off • If not reverted to the normal operation within the time period listed below, the traffic signal controllers shall timeout the commands and operate normally • Hurry Call – 5 Minutes • Flashing Amber / Flashing Red – 30 Minutes • Junction Off – 30 Minutes	

#	Description	Compliance(Yes/No)
	• The traffic signal controller shall report the following to the Central Computer through the communication network every cycle or on an event as appropriate. • Green time actually exercised for each approach (stage pre-emption timing) against the green running period set for the approach by the Central Computer • Mode of Operation • Lamp, CDT and Pedestrian failure, if any • Output short circuit, if any • Detector failure, if any	

Traffic Signal Controller Operating Parameters

Phases - The controller shall have facility to configure 32 Phases either for vehicular movement, filter green, indicative green, pedestrian movement, or a combination thereof.

#	Description	Compliance(Yes/No)
1	It shall be possible to operate the filter green (turning right signal) along with a vehicular phase. The filter green signal shall flash for a time period equal to the clearance amber period at timeout when operated with a vehicular phase.	
2	The pedestrian phase signal shall be configured for flashing red or flashing green aspect during pedestrian clearance.	
3	It shall be possible to configure any phase to the given lamp numbers at the site.	
4	Stages – The controller shall have facility to configure 32 Stages	
5	Cycle Plans – The controller shall have facility to configure 24 Cycle Plans and the Amber Flashing / Red Flashing plan. It shall be possible to define different stage switching sequences in different cycle plans. The controller shall have the capability for a minimum of 32 cycle-switching per day in fixed mode of operation.	
6	Day Plans – The controller shall have facility to configure each day of the week with different day plans. It shall also be possible to set any of the day plans to any day of the week. The controller shall have the capability to configure 20 day plans.	
7	Special Day Plans – The controller shall have facility to configure a minimum of 20 days as special days in a calendar year.	
8	Starting Amber – During power up the controller shall initially execute the Flashing Amber / Flashing Red plan for a time period of 3 Seconds to 10 Seconds. The default value of this Starting Amber is 5 Seconds. Facility shall be available to configure the time period of Starting Amber within the given limits at the site.	
9	Inter-green – Normally the inter-green period formed by the clearance Amber and Red extension period will be common for all stages. However, the controller shall have a facility to	

#	Description	Compliance(Yes/No)
	program individual inter-green period from 3 Seconds to 10 Seconds.	
10	Minimum Green – The controller shall allow programming the Minimum Green period from 5 Seconds to 10 Seconds without violating the safety clearances. It should not be possible to preempt the Minimum Green once the stage start commencing execution.	
11	All Red – Immediately after the Starting Amber all the approaches should be given red signal for a few seconds before allowing any right of way, as a safety measure. The controller shall have programmability of 3 Seconds to 10 Seconds for All Red signal.	
12	Signal lamps monitoring – The controller shall have inbuilt circuitry to monitor the lamp status	
13	Green – Green Conflict Monitoring – The controller shall have a facility to list all conflicting phases at an intersection. The controller should not allow programming of these conflicting phases in a Stage. A hardware failure leading to a conflict condition (due to faulty devices or short circuit in the output) shall force the signal into Flashing Amber / Flashing Red.	
14	Cable less Synchronization – It shall be possible to synchronize the traffic signal controllers installed in a corridor in the following modes of operation, without physically linking them and without communication network. GPS enabled RTC shall be the reference for the cable less synchronization.	
15	Fixed Time mode with fixed offsets	
16	Vehicle Actuated mode with fixed offsets	

Input and Output facilities

#	Description	Compliance(Yes/No)
1	Lamp Switching: The controller shall have minimum 64 individual outputs for signal lamp switching, configurable from 16 to 32 lamps. For New Junctions: The signal lamps shall be operating on appropriate AC voltage of applicable rating. For Upgradation of existing BRTS junction: The signal lamps shall be operating on appropriate DC voltage of applicable rating.	
2	Detector Interface: A minimum of 16 vehicle detector inputs shall be available in the controller. All detector inputs shall be optically isolated and provided with LED indication for detection of vehicle.	
3	Communication Interface: The traffic signal controller shall support Ethernet interface to communicate with the ATCS server	

#	Description	Compliance(Yes/No)
4	Power Saving: The traffic signal controller shall have a facility to regulate the intensity of signal lamps during different ambient light conditions thereby saving energy.	
5	Real-time Clock (RTC): The GPS receiver for updating time, date and day of the week information of the traffic signal controller should be an integral part of the traffic signal controller.	
6	The traffic signal controller shall update the date, time and day of the week automatically from GPS during power ON and at scheduled intervals.	
7	Manual entry for date, time and day of week shall be provisioned for setting the traffic signal controller RTC (Real Time Clock).	
8	It shall be possible to set the RTC from the Central Server when networked	
9	Keypad (optional): The traffic signal controller shall have a custom-made keypad or should have provision for plan upload and download using PC/laptop/Central Server	
10	Operator Display (optional): The traffic signal controller shall optionally have a LED backlit Liquid Crystal Display (LCD) as the operator interface.	

7.1.2. Camera based Vehicle Detector

The detector equipment is a separate logic unit, which may be integrated into the controller, or alternatively mounted in its own housing. The outputs of the detectors indicate the presence of vehicles and are used to influence the operation of the traffic signal controller and shall generate counts, demands and extensions for right-of-way. Means shall be provided so that a detector may be connected to demand and / or extend a phase movement as specified.

#	Description	Bidder Compliance(Yes/No)
1	The contractor shall clearly specify the placement of the detector (upstream, downstream, stop-line, exit etc.) for independent straight and right turn signals.	
2	The detector shall be able to **Vehicle count & classification of vehicles** in non-lane based mixed traffic flow conditions.	
3	The contractor shall give an estimate of the total number of vehicle presence detection zones and vehicle detectors required and the type of detection system recommended.	
4	A detector that does not change its status at least once during a stage execution shall be notified to the Central Computer (in ATCS mode) at the termination of the associated stage.	
5	The Camera based vehicle detector equipment shall be integrated into the Traffic Signal Controller. The output of the same i.e., presence of vehicles shall be used to influence the operation of the traffic signal controller, generate counts, demands and extensions for right-of-way.	

#	Description	Bidder Compliance(Yes/No)
6	It shall be capable to count vehicles in non-lane based mixed traffic flow conditions with 90% accuracy in any environmental conditions.	
8	The detector shall have image resolution of VGA (640 x 480) with frame rate of 30 FPS or better	
9	The detector shall generate the on-demand video with compression rate of H.264, MPEG-4, MJPEG.	
10	The detector shall have capability to measure the real-time traffic flow monitoring including counting, classification, flow speed, zone occupancy and Levels of Service (LOS)	
11	The detector shall work on the 24 VDC/230 VAC power supply and low power consumption up to 12W or better. Detector must be compatible with the proposed controller.	
12	The detector shall have shock and vibration resistance as per NEMA TS2 tests.	
13	The detector shall have ingress protection of at least IP67 or better.	
14	Specify the proposed Make	
15	Specify the proposed Model	

7.1.3. Communication Network

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 Central Computer in ICCC/TCC. Central Computer running the ATCS application shall calculate and send optimum signal timings to all intersections in the corridor. The System Integrator shall clearly specify the bandwidth requirements and the type of network recommended for the ATCS.

The contractor shall specify the networking hardware requirements at the Traffic Management Centre and remote intersections for establishing the communication network.

7.1.4. Function Scope of Countdown Timer

#	Description	Compliance (Yes/No)
1	Count Down Timer to be configured in Vehicular Mode.	
2	The Vehicular countdown timer should be dual colour, • Red for Stop or STP • Green colour for Go	
3	There should be alternate Red and Balance phase time for STOP or STP in Flashing	
4	Alternate Green and Balance Phase Time for Go in Flashing	
5	Countdown timer should be operated through ATCS	

#	Description	Compliance (Yes/No)
	controller	

7.2. Functional Requirements of the Red Light Violation Detection(RLVD) System

#	SYSTEM PARAMETER	Compliance (Yes/No)
1	**General**	
a.	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/Overview Camera) focused at the red light. The Evidence camera should also be used for evidence snap generation. RLVD system should capture the image/Video in day as well as in night. The evidence camera shall capture the status of red light in colour during night time. a) Red Light Violation b) Stop Line Violation	
b.	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: a) Type of Violation b) Date, time, Site Name and Location of the Infraction c) Registration Number of the vehicle through ANPR Camera system for each vehicle identified for infraction.	
c.	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 :- a) When it violates the stop line. b) When it violates the red signal. c) Besides, a closer view indicating readable registration number plate patch of the violating vehicle for court evidence for each violation. 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	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	incidence. The entire evidence should be watermarked and encrypted to stand the court of law.	
d.	The system shall 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.	
e.	The Evidence image produced by the system should be wide enough to give the exact 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.	
f.	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.	
g.	The Evidence and ANPR camera should continuously record all footage in its field of view to be stored at the junction (with the use of Network Video Recorder (NVR) or any other components as per proposed solution). This should be extractable onto a portable device as and when required. The option of live viewing of evidence cameras from the locations shall be available at the ICCC/TCC. The network should have the capability to provide the real time feed of the evidence camera to the ICCC/TCC at the best resolution possible on the available network. There should be a provision to store minimum **one week** of data at each site(locally) on a 24x7 basis.	
h.	The system shall 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 nighttime. Necessary External IR illuminator to be installed along with ANPR Camera & Evidence Camera separately as per their proposed solution	
2	**Recording & display information archive medium**	
	The recording and display of information should be detailed on the snapshot of the infracting vehicle as follows:	
	Computer generated unique ID of each violation	
	Date (DD/MM/YYYY)	
	Time (HH:MM:SS)	
	Equipment ID	
	Location ID	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	Carriageway or direction of violating vehicle	
	Type of Violation (Signal/Stop Line)	
	Lane Number of violating vehicle	
	Time into Red/Green/Amber	
	Registration Number of violating vehicle	
3	**On site-out station processing unit communication & Electrical Interface**	
a.	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.	
b.	The system should have secure access mechanism for validation of authorised personnel.	
c.	Deletion or addition and transfer of data should only be permitted to authorised users.	
d.	A log of all user activities should be maintained in the system.	
e.	Roles and Rights of users should be defined in the system as per the requirements of the client	
f.	All formats of the stored data with respect to the infractions should be Non-Proprietary.	
g.	The communication between the on-site outstation processing unit housed in the junction box and the detection systems mounted on the cantilever shall be through appropriate secured technology.	
h.	The system should have the capability to transfer the data to ICCC/TCC through proper encryption in real time and batch mode for verification of the infraction and processing of challan. Call forwarding architecture shall be followed to avoid any data loss during transfer.	
i.	In the event that the connectivity to the ICCC/TCC is not established due to network/connectivity failures, then all data pertaining to the infraction shall be stored on site and will be transferred once the connectivity is re-established automatically. There shall also be a facility of physical transfer 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.	
j.	SI to consider the Local Processing Unit (LPU) along with proposed RLVD solution. Single/One LPU should have capability to cater minimum 8 nos. of cameras. Hence based on type of junction bidder to consider the no. of LPU to be placed at the junction.	
4	**Mounting structure**	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	Mounting structure should be as per specification 8.17 based on actual requirement of site	
	It should be capable to withstand high wind speeds and for structural safety, the successful bidder has to provide structural safety certificate from qualified structural engineers approved/ certified by Govt. Agency.	
	It shall be painted with one coat of primer and two coats of PU paint. The equipment including poles, mountings should have an aesthetic feel keeping in mind the standards road Infrastructure (e.g., Poles, Navigation boards etc) currently installed at these locations. The equipment should look "one" with the surroundings of the location and not look out of place.	
	Rugged locking mechanism should be provided for the onsite enclosures and cabinets.	
5	**RLVD Application**	
	It 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.	
	It 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.	
	All outstation units should be configurable using the software at the Central Location.	
	Violation retrieval could be sorted by date, time, location and vehicle registration number and the data structure should be compatible with Surat Police database structure. It should also be possible to carry out recursive search and wild card search. Data of violation should be stored for minimum one year duration. Flagged violation should be stored till contract duration.	
	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) either in RLVD application or in proposed EMS.	
	The automatic number plate recognition Software will be part of the supplied system, Success rate/accuracy of ANPR shall be as follows:	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	• For HSRP – 80% during daytime and 70% during nighttime • For Non-HSRP – 70% during daytime and 60% during nighttime.	
	The RLVD 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), shall be updated free of cost during the contract period by the SI.	
	SI has to provide the necessary APIs as per SSCDL's requirement of proposed RLVD application for integration with existing Integrated command and Control Center Application available with SSCDL.	
	If required bidder has to integrate proposed RLVD application with the existing e-Challan software/application available with the Surat Police department without any additional cost to SSCDL.	
	SI has to provide the necessary support for integration of proposed RLVD application with the database like VAHAN, etc. All the necessary compliance related to access of VAHAN database needs to be fulfilled by SI without any additional cost to SSCDL.	
	The format for the E-challan shall be kept customisable as per the requirements of SMC/SSCDL/Traffic Police throughout the contract period.	
	The software should have a capability to define the automatic rule for the implication of penalty structure for repetitive offences (for example: INR 100 for First offence, INR 500 for second offence, etc. automatically by identifying the repetitive offender) and notify the same to the repeated offender.	
	Image zoom function for number plate and images should be provided. In case the number plate of the infracting vehicle is readable only through the magnifier then in such cases the printing should be possible along with the magnified image.	
	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.	
	Apart from role-based access, the system should also be able to define access based on location.	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	Rights to different modules / Sub-Modules / Functionalities should be role based and proper log report should be maintained by the system for such access.	
	Components of the architecture must provide redundancy and ensure that there are no single points of failure in the key project components. Considering the high sensitivity of the system, design shall 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.	
	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 shall be a part of the proposed system. Using Firewalls and Intrusion detection systems such attacks and theft shall be controlled and well supported (and implemented) with the security policy. The virus and worm's attacks shall be well defended with Gateway level Anti-virus system, along with workstation level Anti-virus mechanism. There shall 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 shall be properly stored & archived for future analysis and forensics whenever desired.	
	The evidence of Infraction should be encrypted and protected so that any tampering can be detected.	
	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.	
	System shall use open standards and protocols to the extent possible and declare the proprietary software wherever used.	
	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.	
	The data provided for authentication of violations should be in an easy to use format as per the requirements of user.	
	User should be provided with means of listing the invalid violations along with the reason(s) of invalidation without deleting the record(s).	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	Basic image manipulation tools (zoom etc.) should be provided for the displayed image but the actual recorded image should never change.	
	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).	
	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, Regn. Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behavior is recorded including (Red Light violation and Stop Line Violation)	
	Number plate should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well.	
	Interface for taking prints of the violations (including image and above details).	
	Specify the proposed Make	
	Specify the proposed Model	

7.3. Functional Requirements of the Speed Violation Detection (SVD) System

#	SYSTEM PARAMETER	Compliance (Yes/No)
1	**General**	
	The Speed Violations should be automatically detected by the system by using appropriate sensors technology. Spot/average speed detection is required in Speed violation system	
	The Speed Violations detection should be detecting the spot/average speed of vehicle up to 180 Kmph +-5% based on the class of vehicle and generate red flag if it's beyond the pre-set limit.	
	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: a) Type of Violation b) Speed of violating vehicle c) Notified speed limit d) Date, time, Site Name and Location of the Infraction	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	e) Registration Number of the vehicle through ANPR Camera system for each vehicle identified for infraction	
	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	
	The system shall 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	
	The system shall 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. Necessary external IR illuminator to be installed along with detection Camera as per their proposed solution.	
	The camera should continuously record all footage in its field of view to be stored at junction (with the use of Network Video Recorder (NVR) or any other components as per proposed solution). This should be extractable onto a portable device as and when required. The option of live viewing of evidence cameras from the locations shall be available at the ICCC/TCC. The network should have the capability to provide the real time feed of the evidence camera to the ICCC/TCC at the best resolution possible on the available network. There should be a provision to store minimum one week of data at each site (locally) on a 24x7 basis.	
2	**Speed**	
a.	Speed measurement may be made by using non-intrusive technology video 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)	
3	**On site-out station processing unit communication & Electrical Interface**	
a.	The system should automatically reset in the event of a program hang up and restart after power failure.	
b.	The system should have secure access mechanism for validation of authorised personnel	
c.	Deletion or addition and transfer of data should only be permitted to authorised users.	
d.	A log of all user activities should be maintained in the system	

#	SYSTEM PARAMETER	Compliance (Yes/No)
e.	Roles and Rights of users should be defined in the system	
f.	The data shall be transferred to the TCC/ICCC in real time for verification of the infraction and processing of challan.	
g.	In the event that the connectivity to the ICCC/TCC is not established then all data pertaining to the infraction shall be stored on site and will be transferred once the connectivity is re-established automatically. There shall also be a facility to physically transfer 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.	
h.	SI to consider the local Processing Unit (LPU) along with proposed SVD solution (Applicable as per proposed solution) Single/One LPU should have capability to cater minimum 6 nos. of cameras. Hence base on type o location bidder to consider the no. of LPU to be placed at the junction.	
4	**Mounting structure**	
	Mounting structure should be as per specification 8.17 based on actual requirement of site	
	It should be capable to withstand high wind speeds and for structural safety, the successful bidder has to provide structural safety certificate from qualified structural engineers approved/ certified by Govt. Agency.	
	Rugged locking mechanism should be provided for the onsite enclosures and cabinets.	
5	**Speed Violation Application**	
	It 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.	
	It should generate & print 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.	
	All outstation units should be configurable using the software at the Central Location	
	Violation retrieval could be sorted by date, time, location and vehicle registration number and data structure should be compatible with Surat Traffic Police database and Surat Transport department database structure. Data of violation	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	should be stored for minimum one year duration. Flagged violation should be stored till contract duration.	
	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) either in proposed SVD application or in proposed EMS.	
	The automatic number plate recognition Software may be part of the supplied system or can be provided separately as add on module to be integrated with violation detection. Success rate/accuracy of ANPR shall be as follows: • For HSRP – 80% during daytime and 70% during nighttime • For Non-HSRP – 70% during daytime and 60% during nighttime.	
	Image zoom function for number plate and images should be provided. Any updates of the software available, shall be updated free of cost during the contract period by the vendor and will integrate the same with existing application and database of Surat Traffic Police and Surat Transport department.	
	SI has to provide the necessary APIs as per SSCDL's requirement of proposed SVD application for integration with existing Integrated command and Control Center Application available with SSCDL.	
	If required SI has to integrate proposed RLVD application with the existing e-Challan software/application available with the Surat Police department without any additional cost to SSCDL.	
	SI has to provide the necessary support for integration of proposed RLVD application with the database like VAHAN, etc. All the necessary compliance related to access of VAHAN database needs to be fulfilled by SI without any additional cost to SSCDL.	
	The format for the E-challan shall be kept customisable as per the requirements of SMC/SSCDL/Traffic Police throughout the contract period.	
	The software should have a capability to define the automatic rule for the implication of penalty structure for repetitive offences (for example: INR 100 for First offence, INR 500 for second offence, etc. automatically by identifying the repetitive offender) and notify the same to the repeated offender.	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	The application software should be integrated with the notice branch software for tracing the ownership details of the violating vehicle and issuing/printing notices.	
	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.	
	Apart from role based access, the system should also be able to define access based on location.	
	Rights to different modules / Sub-Modules / Functionalities should be role based and proper log report should be maintained by the system for such access	
	Important technical components of the architecture must support scalability to provide continuous growth to meet the growing demand of Surat Police/SSCDL/SMC. The system shall 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.	
	The system shall also support horizontal scalability so that depending on changing requirements from time to time, the system may be scaled horizontally.	
	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 shall 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.	
	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 shall be a part of the proposed system. Using Firewalls and Intrusion detection systems such attacks and theft shall be controlled and well supported (and implemented) with the security policy. The virus and worms attacks shall be well defended with Gateway level Anti-virus system, along with workstation level Anti-virus mechanism.	

#	SYSTEM PARAMETER	Compliance (Yes/No)
	There shall 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 shall be properly stored & archived for future analysis and forensics whenever desired.	
	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.	
	System shall use open standards and protocols to the extent possible	
	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.	
	The data provided for authentication of violations should be in an easy to use format as per the requirements of user unit.	
	User should be provided with means of listing the invalid violations along with the reason(s) of invalidation without deleting the record(s).	
	Basic image manipulation tools (zoom etc.) should be provided for the displayed image but the actual recorded image should never change.	
	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).	
	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, Regn. 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.	
	Interface for taking prints of the violations (including image and above details).	

7.4. Functional Requirements of the 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.

#	Description	Compliance (Yes/No)
1.	**Vehicle Detection by Color** 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. The system shall have options to search historical records for post event analysis by the vehicle color or the vehicle color with license plate and date time combinations	
2.	**Alert Generation** The system should have option to input certain license plates according to the hot listed categories like “Wanted”, “Suspicious”, “Stolen”, etc by authorized personnel. 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.	
3.	**Vehicle Status Alarm Module** On successful recognition of the number plate, system should be able generate automatic alarm to alert the control room for vehicles which have been marked as "Wanted", "Suspicious", "Stolen", "Expired". (System should have provision/expansion option to add more categories for future need). The Instantaneous and automatic generation of alarms. In case of identity of vehicle in any category which is define by user.	
4.	**Vehicle Log Module** The system shall enable easy and quick retrieval of snapshots, video and other data for post incident analysis and investigations.	

#	Description	Compliance (Yes/No)
	The system should be able to generate suitable MIS reports that will provide meaningful data to concerned authorities and facilitate optimum utilization of resources. These reports shall include. Report of vehicle flow at each of the installed locations for Last Day, Last Week and Last Month. Report of vehicles in the detected categories at each of the installed locations for Last Day, Last Week and Last Month. Report of Vehicle Status change in different Vehicle Categories. The system shall have Search option to tune the reports based on license plate number, date and time, site location as per the need of the authorities. The system shall have option to save custom reports for subsequent use. The system shall have option to export report being viewed to common format for use outside of the ANPRS or exporting into other systems. The system should provide advanced and smart searching facility of License plates from the database. There should be an option of searching number plates almost matching with the specific number entered (up to 1 and 2 character distance)	
5.	**Vehicle Category Editor** The system should have option to input certain license plates according to category like "Wanted", "Suspicious", "Stolen", “Expired" etc. by Authorized personnel. The system should have an option to add new category by authorized personnel. The system should have option to update vehicle status in specific category by authorized personnel. e.g. on retrieval of stolen vehicle, system entry should be changed from "Stolen" to "Retrieved". System should have option to specify maximum time to retain vehicle records in specific categories.	
6.	**Central Management Module** The Central Management Module shall run on the ANPRS Central Server in control booth. It should be possible to view records and edit hotlists from the Central Server. **ANPR Specification**	

#	Description	Compliance (Yes/No)
	Base Specification of Fixed Box Cameras (Annexure II) must be part of the ANPR specifications. **Camera Housing** IP66 standard with sunshield vandal proof Housing	
7.	**Systems requirement** **Local Server at Intersection:** The system must run on a Commercial Off the Shelf Server (COTS). Outdoor IP 66 Quad core processor based server should be able to cover at least 8 lanes. Temperature rating of the server should be at least 60 degree. SI to consider the Local Processing Unit (LPU) along with proposed ANPR solution. Single/One LPU should have capability to cater minimum 6 nos. of cameras. Hence based on type of junction SI to consider the no. of LPU to be placed at the junction. **Operating system:** The system must be based on open platform and should run on Linux or windows Operating system as per proposed solution.	
8	**Detection Accuracy:** Success rate/accuracy of ANPR shall be as follows: • For HSRP – 80% during daytime and 70% during nighttime • For Non-HSRP – 70% during daytime and 60% during nighttime.	
9	The system should be equipped with appropriate storage capacity for 7 days 24X7 recording, with overwriting capability. Continues footage of ANPR Camera needs to be stored locally/on site.	

7.5. Requirements for Integration with existing E Challan application

The System Integrator is required to integrate the proposed traffic enforcement systems with existing E-Challan system running at Police Command Centre. The integration should adhere to following minimum requirements:

#	Minimum Requirements	Compliance (Yes/No)
1	The SI shall design the integration platform to automatically generate traffic challans based on infractions received from the proposed RLVD, Speed Violation Detection and ANPR Camera	

#	Minimum Requirements	Compliance (Yes/No)
2	The operators for the e challan system are residing at the Police Command Center from where the back office operations for verification of traffic violation are being undertaken. The SI shall provision the network connectivity from TCC to Police Command Center for transferring the data feeds received at TCC from field devices to Police Command Center.	
3	Providing requisite structured/unstructured information to the traffic management officials as and when required.	
4	Generating various statutory reports for the administrative use and functioning of the Traffic unit in matters of prosecution of violators and monitoring the functioning of field officers.	

7.6. Functional Requirement of the Traffic Surveillance Cameras

7.6.1. Information to be captured by Edge Devices

Traffic Surveillance Cameras being one of the core sub modules of ITCS project, it is important that their selection and placement is carefully done to ensure the full coverage of the traffic junction along with all associated junction arms, 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. However, Surat Traffic Police may take the regular review of the requirements for video resolution, FPS and may change these numbers to suit certain specific requirements (for example, there could be a situation when certain cameras are required to be viewed at higher FPS for specific period. It is estimated that not more than 5% of the cameras would be required to be viewed at higher FPS at a given point of time). Video feeds will be stored at 30 FPS for a minimum of 30 days at the Data Center.

It is recommended to clearly identify in SLAs that cameras need to 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.

7.6.2. Information to be analyzed at Traffic Command Center

#	Minimum Requirements	Bidder Compliance(Yes/No)
1	The proposed Video Management System should provide a complete end-to-end solution for security surveillance application. The control centre shall allow an operator to view live / recorded video from any traffic surveillance camera on the IP network. The combination of control centre and the IP network would create a virtual matrix, which would allow switching of video streams around the system	

As informed in the Tender, not all the traffic surveillance cameras would be simultaneously viewed at Traffic Command Centre. The viewing shall vary from time to time which will help to manage traffic at the junctions and coordinate with the field traffic officers.

7.7. 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 SI as scope for the project:

a) 30 days storage of footage of all the traffic surveillance camera(PTZ Camera) and RLVD Evidence Camera feeds to be stored at Data Centre and Flagged data (critical incidents) will be stored for approximately 180 days, permanent storage envisaged on secondary/backup storage for entire contract duration. Bidder to provide the necessary client license Milestone Protect Smart wall - M01-P03-100-01-6CB9DB Client License without any additional cost to SSCDL.

b) 365 days storage of traffic junction data for ATCS at Data Centre and Flagged data will be stored for approximately 5 years.

c) Above systems except ATCS are required to be stored on Primary storage for 7 days & on Secondary Storage for remaining days respectively at Data Centers.

d) All the system audit trail data and meta data should be recorded for entire duration of contact.

e) 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 or policy set the by Police Department/Authority. Surat Traffic Police would analyze such flagged data every 6 months to take such decisions for preservation of the flagged data beyond 180 days.

f) Bidder is expected to carry out the storage requirement estimation and supply as per the solution proposed in line with existing infrastructure available as per RFP.

8. Annexure II: Technical Specifications

8.1. Adaptive Traffic Control- Traffic Sensor

Appropriate camera-based traffic sensors may be chosen to provide the operational levels and accuracy as required for successful function of the Adaptive Traffic Control system(ATCS) system as per the SLAs defined.

8.2. Adaptive Traffic Control- Traffic Controller

Appropriate controller technology may be chosen to provide the operational levels and accuracy as required for successful integration with the existing ATCS system & successful function of the ATCS system as per the SLAs defined. Also, necessary arrangements for bird scare spikes on top of camera to be also thought of to prevent birds from sitting on top of camera box.

8.3. Amber Blinkers with Controller

#	Description	Compliance (Yes/No)
1	Should have less than 8w power consumption	
2	Meets or exceeds intensity, color and uniformity specifications	
3	Temperature compensated power supplies for longer LED life	
4	Uniform appearance light diffusing	
5	Should be Intertek/ETL/EN certified	
6	LED must be single source narrow beam type with clear lens & Luminance uniformity of 1:15	
7	Phantom Class 5 or equivalent. IP Rating: IP65	
8	LED Aspects: 300mm Dia. Hi Flux Operate at voltage of 230Vac +/- 10% and frequency 50 +/- 5Hz.	
a.	Standards: EN 12368 Certified	
b.	Convex Tinted Lens: should be available	
c.	Fuse and Transients: should be available	
d.	Operating Temperature Range: 0 to + 55 °C	
e.	Turn Off/Turn on Time: 75 milli seconds max	
f.	Total Harmonic Distortion: <20%	
g.	Electromagnetic interference: Meets FCC Title 47,Subpart B, Section 15 Regulation or equivalent EN/IRC standard	
h.	Blowing Rain/Dust Spec: MIL 810F or Equivalent EN/IRC standard complaint	
i.	Minimum Luminous Intensity (measured at intensity point)(cd):	

#	Description	Compliance (Yes/No)
	Amber 400	
j.	Dominant Wavelength (nm): Amber 590	
k.	Complete LED Aspect Warranty: 5 Years of Comprehensive Warranty from OEM	
l.	Specify the proposed Make & Model No. – **Amber Blinkers**	

8.4. Adaptive Traffic Control- Traffic Light Aspects (Red, Amber and Green) & Pedestrian System

#	Description	Compliance(Yes/No)
1.	**Key Features:**	
	lowest power consumption for all colors	
	Meets or exceeds intensity, color and uniformity specifications	
	Temperature compensated power supplies for longer LED life	
	Uniform appearance light diffusing	
	Should be Intertek/ETL/EN certified	
	Traffic Light aspects LED must be single source narrow beam type with clear lens & Luminance uniformity of 1:15	
	Phantom Class 5 or equivalent. IP Rating: IP65	
2	**LED aspects:**	
	Red, Amber, Green-Full (300 mm diameter) : Hi Flux	
	Green-arrow (300 mm diameter): Hi flux, BRT: Red & Green (300 mm diameter): Hi flux	
	Pedestrian-Red and Animated Green with countdown timer (3 Digit) (300 mm) Hi Bright with diffusions	
4	**LED Retrofit Specifications:**	
a.	For new Traffic lights aspects and Pedestrian light (includes Red light, Animated Green and Countdown timer) should operate at voltage of 230Vac +/- 10% and frequency 50 +/- 5Hz. For Upgradation of existing BRTS junctions Traffic Light Aspects should operate at voltage of 12 V DC.	
b.	Standards: EN 12368 Certified	
c.	Convex Tinted Lens: should be available	
d.	Fuse and Transients: should be available	
e.	Operating Temperature Range: 0 to + 55 °C	
f.	Turn Off/Turn on Time: 75 milli seconds max	

#	Description	Compliance(Yes/No)
g.	Total Harmonic Distortion: <20%	
h.	Electromagnetic interference: Meets FCC Title 47,Subpart B, Section 15 Regulation or equivalent EN/IRC standard	
i.	Blowing Rain/Dust Spec: MIL 810F or Equivalent EN/IRC standard complaint	
j.	Minimum Luminous Intensity (measured at intensity point)(cd): Red 400 Amber 400 Green 400	
k.	Dominant Wavelength (nm): Red 630 Amber 590 Green 490	
l.	Lamp conflict compatibility system: Compatible with lamp failure and conflict detection	
m.	Complete LED Aspect & Pedestrian Warranty: 5 Years of Comprehensive Warranty from OEM	
n.	Specify the proposed Make & Model No. – Traffic Light Aspects **Red**	
o.	Specify the proposed Make & Model No. – Traffic Light Aspects **Amber**	
p.	Specify the proposed Make & Model No. – Traffic Light Aspects **Green**	
q.	Specify the proposed Make & Model No. – Pedestrian Lights (Red & Animated Green) along with Countdown timer	

8.5. Countdown Timer (CDT)

#	Parameters	Minimum Specifications or better	Compliance (Yes/No)
1	**CPU**	**Micro Controller Based**	
2	**Mechanical Specifications**		
a	Structural Material	Zinc Coated Antirust GPSP alloy sheet-based metal cabinet	
b	Body Color	Black	
c	Dimensions	Minimum 360mm x 370mm x 220mm	
3	**Display Specification**		
a	Digit Height	100 – 300 mm configurable	
b	Display Type	Dual Colored Full Matrix (Red & Green)	
c	No. of Digit	3	
4	**LED Specifications**		
b	Viewing Angle	30°	

#	Parameters	Minimum Specifications or better	Compliance (Yes/No)
c	LED Wave Length	630-640nm (Red), 505 - 520nm (Blue-Green)	
d	LED Dice Material	AIInGap (Red), InGaN (Blue-Green)	
e	LED Warranty period	5 Years of Comprehensive Warranty from OEM	
5	**Technical Features**		
a	Power Consumption	20 - 30 Watt Per Lamp	
b	Input Power	For new Traffic junction CDT should operate at voltage of 230Vac +/- 10% and frequency 50 +/-5Hz. For Upgradation of existing BRTS junctions CDT should operate at voltage of 12 V DC.	
c	Operating Temperature	0 to + 55 °C	
d	Humidity	0% to 95% Relative Humidity	
e	Water & Dust Ingress	IP 65 or better	
f	Standard	En12966	
	Specify the proposed Make		
	Specify the proposed Model		

8.6. Galvanized Standard Poles for Traffic Signals

#	Component	Minimum Specifications	Compliance (Yes/No)
1.	Pole	Minimum 6 meter of Height above ground level	
2.	Material	GI Class 'B' pipe	
3.	Paint	Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or as suggested by SSCDL	
4.	Pole Diameter	Min. 100 mm diameter pole	
5.	Junction Box	SI to provide suitable size of junction box for termination of cables as per their proposed solution	
6.	Cabling	All wiring must be hidden, through tubes/pipes. No wires shall be visible from outside.	
7.	Earthing	Separate Earthing as per IS standard provided for each pole	

#	Component	Minimum Specifications	Compliance (Yes/No)
8.	RCC Foundation	Casting of Civil Foundation with foundation bolts	
9.	General	SI is required to submit the detailed design of the pole with complete foundation approved by Government approved structural engineer. The actual design of pole and foundation will be based on structure stability report issued by Government approved structural engineer.	

8.7. Galvanized Cantilever Poles for Traffic Signal

#	Component	Minimum Specifications	Compliance (Yes/No)
1.	Material	Minimum 6 meter height above ground level & Cantilever arm length of minimum 4 meter. Traffic Signal cantilever Pole should be made in two sections, Two Section connect with Flange.	
2.	Material	GI Class 'B' pipe	
3.	Paint	Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or as suggested by SSCDL	
4.	Pole Diameter	Min. 100 mm diameter pole	
5.	Junction Box	SI to provide suitable size of junction box for termination of cables as per their proposed solution	
6.	Cabling	All wiring must be hidden, through tubes/pipes. No wires shall be visible from outside.	
7.	Earthing	Separate Earthing as per IS standard provided for each pole	
8.	RCC Foundation	Casting of Civil Foundation with foundation bolts	
9.	General	SI is required to submit the detailed design of the pole with complete foundation approved by Government approved structural engineer. The actual design of pole and foundation will be	

#	Component	Minimum Specifications	Compliance (Yes/No)
		based on structure stability report issued by Government approved structural engineer.	

8.8. Cables for Traffic Signals

#	Component	Minimum Specifications	Compliance (Yes/No)
	Cables		
1.	No's of core	• 7 Core 1.5 Sq. mm XLPE multi strand armoured copper cable • 14 Core 1.5 Sq. mm XLPE multi strand armoured copper cable • 3 Core 2.5 Sq. mm XLPE multi strand armoured copper cable • 3 Core 2.5 Sq. mm XLPE multi strand unarmoured copper cable	
2.	Materials	XLPE (Cross Linked Polyethylene	
3.	Certification	ISI Marked	
4.	Standards	IS:7098(I)-88 ISI & Indian Electricity Act and Regulation	
5.	Cable Laying	Cable must be laid as per relevant IS standard	
6.	General	SI to submit the relevant test certificate as per IS standard	
Specify the proposed Make			
Specify the proposed Model			

8.9. Field Junction Box

#	Component	Minimum Specifications	Compliance (Yes/No)
1.	Size	Suitable size as per site requirements to house the field equipment including but not limited to ATCS Controller, UPS with battery, NVR, Edge Level Switch, LPU, Media Converter, LIU, etc. depending on the solution at particular junctions. SI to submit the detailed layout considering solution requirement prior to supply	
2.	Cabinet Material	GI with powder coated	
3.	Material Thickness	Min 2 mm	

#	Component	Minimum Specifications	Compliance (Yes/No)
4.	Number of Locks	Two for Ground Mounted	
5.	Protection	IP 55, 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.	Junction box	Junction box should be designed in a way that, separate compartment will be available for UPS & proposed solution components.	
7.	Mounting	Ground mounted on concrete base	
8.	Form Factor	Rack Mount/DIN Rail	
9.	Earthing	Separate Earthing as per IS standard provided for each Junction Box	
10.	Other Features	Rain Canopy, Cable entry with glands, proper earthing and Fans/any other accessories as required for operation of equipment's within junction box.	
Specify the proposed Make			
Specify the proposed Model			

8.10. Online UPS for field locations

Minimum 1 hour power backup is required at each junction for all component under ITCS project.

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Capacity	Adequate capacity to cover all above IT Components at respective location at full load in case of power failure for a Minimum 1 Hour and corresponding technical parameters to be assured	
2.	Technology	IGBT based PWM Technology, True Online UPS	
3.	Input Frequency Range	50 Hz +/- 10%	
4.	Output Frequency Range	50 Hz +/- 10%	
5.	Input Voltage range	165 VAC – 275 VAC	
6.	Output Voltage	220VAC - 230VAC	
7.	Voltage Regulation	+/-2% (or better) and with built-in Over Voltage Cut off facility in the Device	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
8.	Frequency	50 Hz +/- 0.1% (free Run Mode)	
9.	Harmonic Distortion (THD)	< 3% (linear load)	
10.	Output Waveform	Pure Sine wave	
11.	Output Power Factor	0.9 or more	
12.	Battery Backup	Minimum 1 hour in full load (Adequate and required battery backup to achieve required uptime of field device as well as SLA of the overall solution.)	
13.	Battery Type	Valve Regulated Lead Acid (VRLA) Sealed Maintenance Free (SMF) Or Lithium Ion Batteries	
14.	General Operating Temperature	0 to 55 Degree Celsius	
15.	Alarms & Indications	All necessary alarms & indications essential for performance monitoring of UPS like mains fail, low battery & fault detection	
16.	Bypass	Automatic, Manual Bypass Switch	
17.	Certifications	For Safety & EMC as per international standard	
18.	Management Protocol	SNMP support through TCP/IP & SNMP Card to be provided along with each UPS	
19.	Specify the proposed Make		
20.	Specify the proposed Model No		

8.11. Red Light Violation Detection(RLVD) System

#	Parameter	Minimum Specifications	Compliance(Yes/No)
1	**General**		
	The system should be capable of generating a video & minimum 3 snapshot in any of the standard industry formats (MJPEG, JPG, avi, mp4, mov, etc) with at least 10 frames per second. The video shall 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 (Overview Camera)**		
a.	Video Compression	H.265 or better	
b.	Video Resolution	1920 X 1080	
c.	Frame rate	Min. 30 fps	
d.	Image Sensor	1/3" or ½.8" Progressive Scan CMOS	
e.	Lens Type	Varifocal, C/CS Mount, IR Correction full HD lens	

#	Parameter	Minimum Specifications	Compliance(Yes/No)
f.	Lens#	Auto IRIS 5~50mm /8 – 40 mm, F1.4	
g.	Minimum Illumination	Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) or better	
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.	Wide Dynamic Range	True WDR >= 120 db	
m.	Protocol	IPV4, IPV6, HTTP, HTTPS, FTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, QoS, ONVIF Profile S & G	
n.	Security	Password Protection, IP Address filtering, User Access Log, HTTPS encryption, TSL/SSL	
o.	Network Interface	RJ45 10 Base-T/100 Base-TX, POE	
p.	Operating conditions	0 to 50°C (temperature), 50 to 90% (humidity)	
q.	Power	POE/POE+ to follow IEEE 802.3 af /at	
r.	Casing	NEMA 4X / IP-66, IK10 rated	
s.	Intelligent Video	Motion Detection & Tampering alert	
t.	Alarm I/O	Minimum 2 Input & 1 Output contact for 3rd part interface	
u.	Bird Spike	Necessary arrangements for bird scare spikes on top of camera to be also thought of to prevent birds from sitting on top of camera box	
v.	Certification	UL/EN, CE,FCC, BIS	
w.	Specify the proposed Make		
x.	Specify the proposed Model No		
3	**On site-out station processing unit communication & Electrical Interface (Junction Box)**		
	Data Storage on site/Location	The system should be equipped with appropriate storage capacity for 7 days 24X7 recording, with overwriting capability. Continues footage of ANPR Camera needs to be stored locally/on site. While Context Camera/Overview camera's feed should be stored in central	

#	Parameter	Minimum Specifications	Compliance(Yes/No)
		storage at Data Center for period of 30 days.	
	Network Connectivity	Should support Wired Connectivity or GPRS based wireless technology with 4G capability.	
	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 shall be maintained by the system.		
	The system should be capable of working in ambient temperature range of 0°C to 60°C.		
	Lightening arrester shall be installed for safety of system (As per BIS standard IS 2309 of 1989).		
	The housing(s) should be capable of withstanding vandalism and harsh weather conditions and should meet IP66/NEMA-4X, IK10 standards (certified).		
4	**Violation Transmission and Security**		
	Encrypted data, images and video pertaining to Violations at the Onsite processing station should be transmitted to the ICCC/TCC electronically through GPRS based wireless 4G technology, or wired connectivity if available in Jpeg format		
	Advanced Encryption Standard (AES) shall be followed for data encryption on site and ICCC/TCC, and its access will protected by a password.		
	The vendor shall ensure that the data from the onsite processing unit shall be transferred to ICCC/TCC within one day.		
5	**Video Recording**		
	The system should be capable of continuous video recording in base station/on site for 7 days. The system shall 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.		
	Direct extraction through any physical device like USB flash drive , Portable Hard disk etc. shall be possible		

8.12. Speed Violation Detection (SVD) System

#	Description		Compliance(Yes/No)
1.	The system should be capable of generating a video & minimum 3 snapshot in any of the standard industry formats (MJPEG, JPG, avi, mp4, mov, etc) with at least 10 frames per second. The video shall 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.	**Speed**		
	Unit of Speed Measurement	Kmph	
	Speed detection system to Capture speed	180 Kmph ± 5%	
	Speed Threshold	(Vendor should provide manufacturer certificate/third party test report in support of their claim)	Need to Specify Speed Threshold
	Speed Enforcement Technology	Video based Technology	
3.	**Digital Network Camera**		
a	Video Compression	H.265 or better	
b	Video Resolution	1920 x 1080	
c	Frame rate	Min. 60 fps	
d	Image Sensor	1/3" or ½.8" Progressive Scan CMOS	
e	Lens Type	Varifocal, C/CS Mount, IR Correction full HD lens	
f	Lens#	Auto IRIS 5~50mm /8 – 40 mm, F1.4	
g	Minimum Illumination	Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) or better	
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	Wide Dynamic Range	True WDR >= 120 db	
m	Protocol	IPV4, IPV6, HTTP, HTTPS, FTP, RTSP, RTP, TCP, UDP,	

#	Description		Compliance(Yes/No)
		RTCP, DHCP, UPnP, NTP, QoS, ONVIF Profile S & G	
n	Security	Password Protection, IP Address filtering, User Access Log, HTTPS encryption, TSL/SSL	
o	Network Interface	RJ45 10 Base-T/100 Base-TX, POE	
p	Operating conditions	0 to 50°C (temperature), 50 to 90% (humidity)	
q	Power	POE/POE+ to follow IEEE 802.3 af /at	
r	Casing	NEMA 4X / IP-66, IK10 rated	
s	Intelligent Video	Motion Detection & Tampering alert	
t	Alarm I/O	Minimum 2 Input & 1 Output contact for 3rd part interface	
u	Bird Spike	Necessary arrangements for bird scare spikes on top of camera to be also thought of to prevent birds from sitting on top of camera box	
v	Certification	UL/EN, CE,FCC , BIS	
	Specify the proposed Make		
	Specify the proposed Model No		
4.	**Recording & display information archive medium**		
a.	The system should be capable of recording the following details of the infracting vehicles		
b.	Computer generated unique ID of each violation Date (DD/MM/YYYY) Time (HH:MM:SS) Equipment ID Location ID Carriageway or direction of violating vehicle 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 Type of Violation Notified speed limit (in Kmph) Speed of violating vehicle (in Kmph) Lane Number of violating vehicle Registration Number of violating vehicle		

#	Description		Compliance(Yes/No)
5.	**On site-out station processing unit communication & Electrical Interface**		
a.	Data Storage on site/Location	The system should be equipped with appropriate storage capacity for 7 days 24X7 recording, with overwriting capability. Continues footage of Camera needs to be stored locally/on site.	
b.	Network Connectivity	Should Support Wired Connectivity or GPRS based wireless technology with 4G capability.	
c.	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 shall be maintained by the system.		
d.	The system should be capable of working in ambient temperature range of 0^{o}C to 60^{o}C.		
e.	Lightening arrester shall be installed for safety of system (As per BIS standard IS 2309 of 1989)		
f.	The housing(s) should be capable of withstanding vandalism and harsh weather conditions and should meet IP66/NEMA 4X, IK10 standards (certified).		
6.	**Violation Transmission and Security**		
	Encrypted data, images and video pertaining to Violations at the Onsite processing station should be transmitted to the ICCC/TCC electronically through GPRS based wireless 4G technology or wired connectivity, in Jpeg format.		
	Advanced Encryption Standard (AES) shall be followed for data encryption on site and ICCC/TCC, and its access will protect by a password.		
	The vendor shall ensure that the data from the onsite processing unit shall be transferred to ICCC/TCC within one day.		
7.	**Video Recording**		
	The system should be capable of continuous video recording in base station for 7 days. The system shall 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.		
	Direct extraction through any physical device like USB, Hard disk shall be possible		

8.13.Traffic Surveillance(PTZ) Cameras

#	Parameters	Minimum Specifications or better	Compliance (Yes/No)
1.	Video Compression	H.265 or better	
2.	Video Resolution	Full HD (1920 X 1080)	
3.	Frame rate	Up to 25/30 fps @1080p	
4.	Image Sensor	1/3" OR ½.8" " Progressive Scan CMOS	
5.	Lens	Auto-focus, 4.3 - 129 mm(-/+ 2 mm) (corresponding to 30x or better)	
6.	Multiple Streams	Support minimum dual streams simultaneously & each stream should be individually configurable.	
7.	Minimum Illumination	Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) or better	
8.	Day/Night Mode	Colour, Mono, Auto	
9.	Wide Dynamic Range	WDR >= 120 dB	
10.	S/N Ratio	≥ 50Db	
11.	PTZ	Pan: 360° endless/continuous, Up to 100°/s (auto), Up to 100°/s (Manual) Tilt: 90°, up to 100°/s (Auto), up to 40°/s (Manual) 30x optical zoom and 10x digital zoom 64 pre-set positions Pre-set tour	
12.	Auto adjustment + Remote Control of Image settings	Colour, brightness, sharpness, contrast, white balance, exposure control, backlight compensation, Gain Control, Electronic Image Stabilization	
13.	Protocol	HTTP, HTTPS, FTP, NTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, ONVIF Profile S & G	
14.	Security	Password Protection, IP Address filtering, User Access Log, HTTPS encryption, TSL/SSL	
15.	Operating conditions	0 to 50°C (temperature), 50-90% humidity	
16.	Casing	NEMA 4X / IP-66 rated & IK 10	
17.	Certification	UL/EN,CE,FCC , BIS	
18.	Local storage	Micro SD card up to 64 GB. In the event of failure of connectivity to the central server the camera shall record video locally on the SD card automatically. After the connectivity is restored, these recordings shall be automatically merged with the recording server such that no manual intervention is required to transfer the SD card-based recordings to recording server.	

#	Parameters	Minimum Specifications or better	Compliance (Yes/No)
		(1 Nos. of 64 GB SD card to be provided with each camera)	
19.	Onboard Analytics	Motion Detection, Tampering Alert, Out of focus	
20.	IR illuminator	In built up to 100 meters	
21.	Network Interface	RJ45 10 Base-T/100 Base-TX, POE	
22.	Power	802.3at PoE+ (Class 4) or 24VDC/24AC	
23.	Specify the proposed Make		
24.	Specify the proposed Model No		

8.14. Fixed Box Cameras for ANPR system

#	Parameter	Minimum Specifications or better	Compliance (Yes/No)
1.	Video Compression	H.265 or better	
2.	Video Resolution	1920 X 1080	
3.	Frame rate	Min. 30 fps	
4.	Image Sensor	1/3" or ½.8" Progressive Scan CMOS	
5.	Lens Type	Varifocal, C/CS Mount, IR Corrected Full HD	
6.	Lens#	Auto IRIS 5~50mm/ 8 – 40 mm, F1.4	
7.	Minimum Illumination	Colour: 0.5 lux, B/W: 0.1 lux (at 30 IRE) or better	
8.	IR Cut Filter	Automatically Removable IR-cut filter	
9.	Day/Night Mode	Colour, Mono, Auto	
10.	S/N Ratio	≥ 50 Db	
11.	Auto adjustment + Remote Control of Image settings	Colour, brightness, sharpness, contrast, white balance, exposure control, backlight compensation, Gain Control, Wide Dynamic Range	
12.	Wide Dynamic Range	True WDR >= 120 db	
13.	Protocol	IPV4, IPV6, HTTP, HTTPS, FTP, NTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, ONVIF Profile S & G	
14.	Security	Password Protection, IP Address filtering, User Access Log, HTTPS encryption, TSL/SSL	

#	Parameter	Minimum Specifications or better	Compliance (Yes/No)
15.	Network Interface	RJ45 10 Base-T/100 Base-TX, POE	
16.	Operating conditions	0 to 50°C (temperature), 50 to 90% (humidity)	
17.	Power	POE/POE+ to follow IEEE 802.3 af /at	
18.	Intelligent Video	Motion Detection & Tampering alert	
19.	Alarm I/O	Minimum 2 Input & 1 Output contact for 3rd part interface	
20.	Casing	NEMA 4X / IP-66 rated, IK10	
21.	Bird Spike	Necessary arrangements for bird scare spikes on top of camera to be also thought of to prevent birds from sitting on top of camera box	
22.	Certification	UL/EN, CE, FCC, BIS	
23.	Specify the proposed Make		
24.	Specify the proposed Model No		

8.15. External IR Illuminator

The infrared illuminators are to be used in conjunction with the Fix Box cameras specified above to enhance the night vision in RLVD, SVD and ANPR solutions.

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Range	Min. 100 meters, with adjustable angle to cover the complete field of view at specified locations	
2.	Minimum Illumination	High sensitivity at Zero Lux	
3.	Angle of Illumination	Adjustable	
4.	Power	Automatic on/off operation	
5.	Casing	NEMA 4X / IP-66 rated	
6.	Operating conditions	0° to 50°C	
7.	Certification	UL/EN/CE/FCC	
8.	Specify the proposed Make		
9.	Specify the proposed Model No		

8.16. Poles for PTZ Camera

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Pole type	Hot Dip Galvanized Octagonal pole. The pole should be made as per IS and shall be coated with Hot Dip Galvanizing as per IS: 4759, IS:2629, IS: 2633. Fabrication in accordance with IS-2713 (1980)	
2.	Height	6-8 Meters (or higher), as-per-requirements for different types of cameras & Site conditions. Height of pole will be finalized during the feasibility study.	
3.	Pole Diameter	Min 70 mm Top dia x 135 mm Bottom dia x 4 mm thickness with suitable size of Base Plate (bidder to choose larger diameter for higher height)	
4.	Cantilevers	Cantilever arm length of minimum 1.5 meter	
5.	RCC 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).	
6.	Protection	Lightning arrester shall be provided, to protect all field equipment mounted on pole.	
7.	Junction Box	SI to provide suitable size of junction box for termination of cables as per their proposed solution	
8.	Cabling	All wiring must be hidden, through tubes/pipes. No wires shall be visible from outside.	
9.	Earthing	Separate Earthing as per IS standard provided for each mounting structure and lighting arrester	
10.	General	SI is required to submit the detailed design of the pole with complete foundation approved by Government approved structural engineer. The actual design of pole and foundation will be based on structure stability report issued by Government approved structural engineer.	

8.17. Mounting Structure for RLVD, ANPR & SVD

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Mounting Structure Material	Hot Dip Galvanized. The Mounting Structure should be made as per IS and shall be coated with Hot Dip Galvanizing as per IS: 4759, IS:2629, IS: 2633. Fabrication in accordance with IS-2713 (1980)	
2.	Height	Minimum 6.5 Meter from Ground level or as-per site conditions. Height of Mounting Structure will be finalized during the feasibility study.	
3.	Mounting Structure	Suitable Cantilever Pole / Gantry as per proposed solution	
4.	RCC 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).	
5.	Protection	Lightning arrester shall be provided, to protect all field equipment mounted on pole.	
6.	Cabling	All wiring must be hidden, through tubes/pipes. No wires shall be visible from outside.	
7.	Earthing	Separate Earthing as per IS standard provided for each mounting structure and lighting arrester	
8.	General	SI is required to submit the detailed design of the pole with complete foundation approved by Government approved structural engineer. The actual design of pole and foundation will be based on structure stability report issued by Government approved structural engineer.	

8.18. Edge Level Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Type	Managed Outdoor Industrial grade switch	
2.	Total Ports	• 8 RJ-45 auto-negotiating 10/100/1000 PoE/PoE+ ports	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
		• Minimum 2 x 1G SFP ports with Single Model SFP Transceivers Modules supplied with switch from day one in addition to above mentioned ports	
3.	PoE Standard	IEEE 802.3af/ IEEE 802.3at or better	
4.	Protocols	• IPV4, IPV6 • DHCP support • IGMP • SNMP Management • Should support Loop protection and Loop detection • Should support Ring protection • End point Authentication • Should support NTP • Should have IPv4 and IPv6 Static Routing	
5.	Access Control	• Support port security • Support 802.1x (Port based network access control). • Support for IP and MAC binding based filtering and Access List. • Support security group access control list	
6.	PoE Power per port	Sufficient to operate the CCTV cameras/edge devices connected	
7.	Enclosure Rating	IP 30 or equivalent Industrial Grade Rating(to be housed in Junction box)	
8.	Operating Temperature	0 -50 Degree C or better Industrial Grade Rating	
9.	Multicast support	IGMP Snooping V1, V2, V3	
10.	Management	Switch needs to have RS-232/USB/RJ45 console port for management via a console terminal or PC, Web GUI NTP, Syslog for log capturing SNMP V1,V2,V3	
11.	Compliance	UL/EN/IEC or equivalent	
12.	Warranty	5 Years of Comprehensive Warranty from OEM	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
13.	Specify the proposed Make		
14.	Specify the proposed Model No		

8.19. Monitoring Workstations

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Form Factor	Tower	
2.	Processor	Intel® 10th generation Core™ i7-10700 Processor (2.90 GHz Base Frequency/Clock Speed, 16M Cache, 8 core) or higher	
3.	Chipset	Intel Q470 chipset or better	
4.	Motherboard	OEM Motherboard	
5.	RAM	16 GB DDR4 RAM @ 2933 MHz or higher with single DIMM, Minimum 2 DIMM slots and Shall be expendable to 64 GB	
6.	Graphics card	Graphics card with 4 GB memory	
7.	HDD	Minimum 2 TB SATA III Hard Disk @7200 RPM or higher (should have provision for attachment of additional 3.5" SATA III HDD)	
8.	Media Drive	NO CD / DVD Drive	
9.	Network interface	10/100/1000 Mbps autosensing on board integrated RJ-45 Ethernet port.	
10.	Audio	Line/Mic IN, Line-out/Speaker Out (3.5 mm)	
11.	USB Ports	Minimum 6 no's (Min. 4 no.'s of 3.2 / 3.1 Gen-2 and Min. 1 no. of USB 3.2 Gen-2), out of 6 Nos. minimum 2 in front, 4 in back and should be easily accessible.	
12.	Ports	Minimum 3 display output ports out which Minimum 1 no. of HDMI port, Minimum 1 no. of VGA / Display Port	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
13.	Keyboard	104 keys Heavy Duty Mechanical Switch Keyboard (USB Interface) with 50 million keystrokes life per switch. Rupee Symbol to be engraved.	
14.	Mouse	2 button optical scroll mouse (USB)	
15.	Monitor	• Minimum 21.5" diagonal Antiglare LED Monitor with 1366x768 or higher resolution. (Same make as desktop). • Must be TCO Displays 6.0 and Energy Star certified • Monitor should be of same make of offered Workstation Brand	
16.	Accessories	All workstations should be with keyboard, mouse, headphones including mic.	
17.	Certification	Energy star 5.0/BEE star certified	
18.	Operating System	Pre-loaded Windows 10 (or latest) Professional 64 bit, licensed copy with certificate of authenticity (or equivalent authenticity information) and all necessary and latest patches and updates. All Utilities and driver software, bundled in CD/DVD/Pen-drive media No software that are trial version or unlicensed in nature should be pre-installed on the system.	
19.	Security	Onboard Integrated Trusted Platform Module 2.0	
20.	Warranty	5 Years of Comprehensive Warranty from OEM	
21.	Specify the proposed Make		
22.	Specify the proposed Model No		

8.20. Server Rack

Racks to be supplied with 5 Years repair or replacement comprehensive warranty with parts.

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Dimension	Rack Width: 600mm	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
		Rack Depth/Length: 1000 mm to 1070 mm	
		Rack Height : 42U	
		Color: Black	
		Rack Equipment Mounting should be as per EIA-310 standard: 19" along with 'U' marking.	
		Rack should have minimum weight carrying Capacity of 500Kgs.	
2.	Doors	Front and Back doors should be perforated with at least 60% or higher perforations	
		Front & Back door should be lockable utilizing a single key with the doors.	
		Rack should have single front door and it should be able moved to the opposite side or interchanged with rear doors. Doors should be able to be removed easily with simple lift-off design.	
		Rack should have Split rear doors to improve access and serviceability to rear of rack mounted equipment.	
3.	Side Panels	Side Panels should be of Half-height on each side for easy access.	
		Side panels should be lockable utilizing a single key with the doors.	
4.	Cable access	It should have cable access slots in the roof for overhead cable egress.	
		It should have unobstructed cable access from bottom of the Rack through a raised floor.	
5.	Wire managers	Two vertical wire/cable managers/panels should be provided in front and back of the rack for cable management.	
6.	Power Distribution Units	Rack must be supplied with 2 x PDUs per Rack - Vertically Mounted, 32AMPs with 25 Power Outputs. (20 Power outs of IEC 320 C13 Sockets & 5 Power outs of 5/15 Amp Sockets), Electronically controlled circuits for Surge & Spike protection 32AMPS MCB, 5 KV AC isolated input to Ground & Output to Ground.	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
		PDUs provided should have LAN/RJ-45 Port and it should be able to manage by assigning IP address to fetch the Information like current/voltage/power being drawn from the each port or total power from PDU.	
		All types of Power Cables (like C13 to C14, e.t.c.) required to power up the various Network/Server devices should be supplied/provided with it from day one.	
7.	**Hardware/Accessories provided**	Rack must be supplied with minimum 2 (two) nos of standard hardware pack/bag (which includes mounting nut-bolts, cable ties e.t.c) for mounting IT equipment and tools for enclosure adjustment.	
		Pre-installed full-enclosure height Integrated and adjustable rear accessory channel to accommodate PDUs and vertical cable organizers.	
		Rear accessory channel should be able to move to other locations of the enclosure along the side brace to resituate cable management as per requirement.	
		Minimum 2 x 1U Mountable Cable Manager and maximum as per site requirement needs to be supplied from Day one.	
8.	Warranty	5 Years repair or replacement comprehensive warranty with parts.	
	Specify the proposed Make		
	Specify the proposed Model No		

8.21.Network Rack

Racks to be supplied with 5 Years repair or replacement comprehensive warranty with parts

#	Parameter	Minimum Specifications	Compliance (Yes/No)
1.	Dimension	Rack Width: 750-800mm Rack Depth/Length: 1000 mm to 1070 mm	
		Rack Height : 42U	
		Color: Black	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
		Rack Equipment Mounting should be as per EIA-310 standard: 19" along with 'U' marking.	
		Rack should have minimum weight carrying Capacity of 500Kgs.	
2.	Doors	Front and Back doors should be perforated with at least 60% or higher perforations	
		Front & Back door should be lockable utilizing a single key with the doors.	
		Rack should have single front door and it should be able moved to the opposite side or interchanged with rear doors. Doors should be able to be removed easily with simple lift-off design.	
		Rack should have Split rear doors to improve access and serviceability to rear of rack mounted equipment.	
3.	Side Panels	Side Panels should be of Half-height on each side for easy access.	
		Side panels should be lockable utilizing a single key with the doors.	
4.	Cable access	It should have cable access slots in the roof for overhead cable egress.	
		It should have unobstructed cable access from bottom of the Rack through a raised floor.	
5.	Wire managers	Two vertical wire/cable managers/panels should be provided in front and back of the rack for cable management.	
6.	Power Distribution Units	Rack must be supplied with 2 x PDUs per Rack - Vertically Mounted, 32AMPs with 25 Power Outputs. (20 Power outs of IEC 320 C13 Sockets & 5 Power outs of 5/15 Amp Sockets), Electronically controlled circuits for Surge & Spike protection 32AMPS MCB, 5 KV AC isolated input to Ground & Output to Ground.	
7.		PDUs provided should have LAN/RJ-45 Port and it should be able to manage by assigning IP address to fetch the Information like current/voltage/power	

#	Parameter	Minimum Specifications	Compliance (Yes/No)
		being drawn from the each port or total power from PDU.	
		All types of Power Cables (like C13 to C14, e.t.c.) required to power up the various Network/Server devices should be supplied/provided with it from day one.	
8.	Hardware/Accessories provided	Rack must be supplied with minimum 2 (two) nos of standard hardware pack/bag (which includes mounting nut-bolts, cable ties e.t.c) for mounting IT equipment and tools for enclosure adjustment.	
		Pre-installed full-enclosure height Integrated and adjustable rear accessory channel to accommodate PDUs and vertical cable organizers.	
9.		Rear accessory channel should be able to move to other locations of the enclosure along the side brace to resituate cable management as per requirement.	
		Minimum 2 x 1U Mountable Cable Manager and maximum as per site requirement needs to be supplied from Day one.	
10.	Warranty	5 Years repair or replacement comprehensive warranty with parts.	
	Specify the proposed Make		
	Specify the proposed Model No		

8.22. Optical Fiber Cable

#	Minimum Specifications	Compliance (Yes/No)
1.	6 Core Single Mode Optical Fiber Cable	
2.	Optical Fiber cable should be ISO/IEC relevant standards	
3.	Shall be 9µ, 6-core Single mode OS2 steel armoured cable as per ISO/IEC-11801	
4.	Shall be able to meet Gigabit & 10 Gigabit Ethernet performance requirement specified by IEEE 802.3z (1000 Base-X) & IEEE 802.3ae (10G Base-X)	
5.	Shall be jelly filled with loose tube construction	

#	Minimum Specifications	Compliance (Yes/No)
6.	Shall have water blocked construction to prevent water absorption and consequent damages	
7.	Optical Fibers should be in multitube/Unitube type of cables	
8.	Fiber cable shall be RoHS Compliant.	
9.	Shall have minimum 25 year performance Warranty	
10.	Specify the proposed Make	
11.	Specify the proposed Model No	

8.23. Media Converter

#	Minimum Specifications	Compliance (Yes/No)
1.	Speed (Auto, 10/100 Mbps), Full Duplex	
2.	Unmanaged Fast Ethernet media converter which supports 100 Base-Tx to 100Base-Fx media conversion	
3.	1 x 100 Base-FX optical port along with required optical fiber patch cord and 1 x 100Mbps Ethernet port-RJ45	
4.	Distance up to 10Kms on Single Mode Fiber	
5.	Required accessories for complete installation and configuration	
6.	Operating Temperature: 0 degree to 55 degree Celsius	
7.	5 Years of Comprehensive Warranty from OEM	
8.	Specify the proposed Make	
9.	Specify the proposed Model No	

8.24. 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. Various key components of the EMS to be implemented as part of this engagement are –

1. Network Monitoring System
2. Server Monitoring System
3. Helpdesk System

The solution should provide a unified web based console which allows role based access to the users.

Network Management System

Solution should provide fault & performance management of the server side infrastructure and should monitor IP/SNMP enabled devices like Routers, Switches, PA System, Emergency Call Boxes, Sensors, etc (i.e. all devices supplied as part of RFP scope). Proposed Network Management shall also help monitor key KPI metrics like availability, in order to measure SLA's. Following are key functionalities that are required which will assist administrators to monitor network faults & performance degradations in order to reduce downtimes, increase availability and take proactive actions to remediate & restore network services.

#	Description	Bidder Compliance (Yes/No)
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 network topology map.	
2	Proposed solution should provide customizable reporting interface to create custom reports for collected data	
3	The system must use advanced root-cause analysis techniques and policy-based condition correlation technology (at network level) for comprehensive analysis of infrastructure faults.	
4	The system should be able to clearly identify configuration changes and administrators should receive an alert in such cases.	
5	The solution should support multicast protocols too, if the overall project solution offered includes multicast.	

Server Performance Monitoring System

#	Description	Bidder Compliance (Yes/No)
1	The proposed tool should integrate with network performance management system and support operating system monitoring for various platforms supplied as part of this Project.	
2	The proposed tool must provide information about availability and performance for target server nodes.	
3	The proposed tool should be able to monitor various operating system parameters such as processors, memory, files, processes, file systems, etc. where applicable.	
4	If the offered server/computing solution includes virtualisation, then the server performance monitoring solution must include virtualisation monitoring capabilities.	

Centralized Helpdesk System

#	Description	Bidder Compliance (Yes/No)
1	Helpdesk system should provide incident management, problem management templates along with helpdesk SLA system for tracking SLA's pertaining to incident resolution time for priority / non-priority incidents.	
2	System should also automatically create tickets based on alarm type	
3	The proposed helpdesk solution must provide flexibility of logging, viewing, updating and closing incident via web interface for issues related to the project.	
4	IT Asset database should be built and managed by the bidder, in order to carry out the scope of work items.	

9. Annexure III: Common guidelines regarding compliance of systems/equipment

The specifications mentioned for various IT / Non-IT components (whose costs have been considered are minimum indicative requirements and should be treated for benchmarking purpose only. SIs are required to undertake their own requirement analysis and may propose appropriate specifications over and above meeting specified minimum technical specifications/parameters/functionality in the bid that are better suited to the requirements.

All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). SSCDL reserve the right to ask replacement of any hardware/software without any additional cost to SSCLD, if it is not conforming to all requirements specified in tender documents.

Any manufacturer and product name mentioned in the Tender should not be treated as a recommendation of the manufacturer / product.

None of the IT / Non-IT equipment's proposed by the SI should be End of Life and End of Sale/Order product. It is essential that the technical proposal is accompanied by the OEM certificate in the format given in Volume I of this Tender, where-in the OEM will certify that the product is not end of life product & shall support for at least 6 years from the date of Bid Submission.

All IT Components should support IPv4 and IPv6

Technical Bid should be accompanied by OEM's product brochure / datasheet. SIs should provide complete make, model, part numbers and sub-part numbers for all equipment/software quoted, in the Technical Bid.

SI shall ensure that only one make and model is proposed for one-line item in Technical & Financial Bid. Bidders are not allowed to quote multiple make & models against one-line item. Further, Selected bidder is not allowed to change the quoted OEM's during the contract tenure.

SI should ensure complete warranty and support for all equipment from OEMs. All the back-to-back service agreements should be submitted during the project implementation.

All equipment, parts should be original and new.

All IT components should support IPV4 and IPV6.

SI should have the warehouse facility in Surat where they can deliver the procured material. Rent for the warehouse should be borne by the SI. Once the material will be delivered at the warehouse & SI should submit the delivery challan report along with the supporting documents. The representative from Client/ SSCDL & Project management consultant will inspect the material at Warehouse. The commencement of installation and Commissioning of equipment shall be initiated based on Successful Inspection report from the Client/ SSCDL. SI will be responsible for the security & safety of material (post inspection) at warehouse. Equipment Damages (if any) to be borne by SI through proper insurance. SSCDL may ask the inventory report of warehouse material at any time.SI cannot use the inspected material in any other project. Delivery challan report should consist of the photographs of delivered material along with the serial number, Address of warehouse, Date & time of delivery at warehouse & GRN receipt etc.

The SI shall be responsible to perform relevant end to end security audits on the entire ITCS project, before SMC/SSCDL can approve final go live. These security audits shall be performed for all critical project components like information, software, hardware, network, infrastructure, integration, and app. SI shall engage an independent third-party auditor that is Cert-In empanelled or STQC security auditor to carry out this audit. SI is required to share the complete details of the audit logs along with copies of all communication, written or otherwise, issues list, bug report, etc. Upon successful completion of the security audit, SI is required to submit Audit Completion Certificate to SSCDL along with the validity period of this security audit. SSCDL shall review this certificate and make final decisions around go-live. SSCDL also reserves the right to carry out independent third-party audit.

The user interface of the system should be a user friendly Graphical User Interface (GUI).

Critical core components of the system should not have any requirements to have proprietary platforms and should conform to open standards.

For custom made modules, industry standards and norms should be adhered to for coding during application development to make debugging and maintenance easier. Object oriented programming methodology must be followed to facilitate sharing, componentizing and multiple-use of standard code. Before hosting the application, it shall be subjected to application security audit (by any of the CERTIN empanelled vendors) to ensure that the application is free from any vulnerability; and approved by the Police Department.

All the Clients Machines / Servers shall support static assigned IP addresses or shall obtain IP addresses from a DNS/DHCP server.

The Successful SI should also propose the specifications of any additional servers / other hardware, if required for the system.

The indicative architecture of the system is given in this volume. The Successful SI must provide the architecture of the solution it is proposing.

The system servers and software applications will be hosted in Data Centres as specified in the Bid. It is important that the entire set of Data Centre equipment are in safe custody and have access from only the authorized personnel and should be in line with the requirements & SLAs defined in the Tender.

The system software licenses (including COTS products) shall be genuine, perpetual, full use and should provide patches, fixes, security updates directly from the OEM at no additional cost to SSCDL for the entire period of contract.

The Servers provided should meet industry standard performance parameters (such as CPU Utilisation of 60 percent or less, disk utilisation of 75 percent or less). In case any non-standard computing environment is proposed (such as cloud), detail clarification needs to be provided in form of supporting documents, to confirm (a) how the sizing has been arrived at and (b) how SLAs would be met.

SI is required to ensure that there is no choking point / bottleneck anywhere in the system (end-to-end) and enforce performance and adherence to SLAs. SLA reports must be submitted as specified in the Bid without fail.

All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). SMC/SSCDL reserves the right to ask replacement of any hardware / software if it is not conforms to all the requirements specified in the tender documents

SMC/SSCDL shall assist in obtaining all necessary go ahead, legal permissions, NOC (No Objection Certificate) from various departments to execute the project. SI shall have to identify and obtain necessary legal / statutory clearances for erecting the poles and installing cameras, for provisioning of the required power, etc. SI shall provide & mange all necessary paperwork to pursue permission from respective authorities.

All proposed Active Network and Network Management Solutions should be Enterprise Grade.

During implementation, if observed that any camera / field equipment requires change in the field of view / orientation/ location, it shall be done by SI without any extra cost.

IPR of all the hardware, software, licenses etc. developed for this project shall be in the name of SSCDL.

The software licenses should not be restricted based on location and the Purchaser should have the flexibility to use the software licenses for other requirements within Surat City range if required

If 10% or less of work is pending due to the factors beyond the control of the bidder for the respective phase than the FAT can be initiated of the respective phase and SI will be paid on pro rate data basis.

Purchaser may ask to selected bidder to continue the Operation & Maintenance for the 6th & 7th year basis mutually agreed terms and conditions.

Bidder shall be responsible for Third-Party audit of the civil structure of installed poles form third party structural engineer and submit the audit report to SSCDL. All pole design has to be certified by the government authorised structural engineer in the design phase and structural stability and safety certificate of all poles to be submitted by government authorised structural engineer after installation of poles.

SI shall ensure all the equipment installed in the outdoor locations are vandal proof and in case the equipment get damaged /stolen for reasons whatsoever, it shall repair/replace the same in the specified time as per SLAs at no extra cost to the SSCDL. All such costs shall be factored in the comprehensive insurance of field equipment for the duration of the contract.SI shall also get comprehensive insurance including damage of project components from the insurance Company for the contract duration (Including Implementation period) for all the equipment / components installed under this project. SI shall submit the insurance details along with the premium payment details regularly with SSCDL.

All the equipment, software and workmanship that form a part of the service are to be under warranty throughout the term of the service contract from the date of service acceptance and commencement. The warranty shall require the SI to be responsible to bear all cost of parts, Labor, field service, pick-up and delivery related to repairs, corrections during the Project Period or all such incidental expenses incurred during the warranty period.

SI will provide proper protection against Power Surges and Ensure Power stabilization to all the field level equipment.

The Intellectual Property Rights (IPR) of all the hardware, software, licenses etc. developed for this project shall be in the name of SSCDL

SI will have to provide troubleshooting & FAQ's, Content Development Guide, Content Sharing Guide, Software Guide etc.

Bidder has to provide the Enterprise license software for Red Light Violation Detection (RLVD) and Speed Violation (SVD) systems. There should be no limitation of adding new devices/new sensors/ new locations, etc in the software. No additional cost will be provided for software license if quantity of devices/sensors/locations, etc increased in the future till the contract is valid.

The proposed ATCS system by the bidder shall be compatible & integrated with the existing application. SDK/API/All Communication & Program protocol related to hardware & software of the existing ATCS System shall be provided to the selected bidder by the SSCDL without any additional cost.

SSCDL will provide SDK/API of existing E-Challan platform. However bidder is responsible for the end-to-end integration as per requirement of police department.

Server for ITCS solutions such as Variable Messaging Sign (VMS) Server, Traffic Surveillance Cameras-Management Server, Traffic Surveillance Cameras-Recording Server, Analytics Server, ANPR Server, Traffic Analytics Server for Mid-Block VMS System, RLVD Server, Speed Detection Server, EMS Server, Mobile App Server, Database Server, ECB System Server, e-Challan Server etc., should have no single point of failover.

Cameras and the Video Management / Video Analytics Software should be ONVIF Core Specification '2.X' or 'S' compliant and provide support for ONVIF profiles such as Streaming, Storage, Recording, Playback, and Access Control.

System Integrator shall place orders on various OEMs directly and not through any sub-contractor / partner. All licenses should be in the name of the SSCDL / SMC.

Initially data centre & control centre may established at different or same location. However both of them will be migrated to IT-MAC once it gets operational. The detail of the location of temporary DC & CC will be shared with the selected vendor. SSCDL will ensure that sufficient space shall be allocated to the selected bidder. The selected system integrator has to migrate all the existing equipment of data centre without any additional cost to SSCDL/SMC.

Bidder shall be responsible to file FIR in nearest Police Station for any theft or physical damage of product under ITCS Project (including cable & accessories) due to any unforeseen reason. The SI shall have to submit the copy of FIR to SSCDL/SMC within 7 days from the date of filing FIR for reference.

SI shall have to take approval from SSCDL/SMC for Schematic drawing of junction box or any fabrication work.

Painting of traffic pole shall be part of Comprehensive Annual Maintenance Contract & SI shall have to do the same in every 1 year till the contract period. Cleaning of traffic signal aspect shall have to do in every 6 months till the contract period. For existing pole SI has to do the painting of

pole once handover is completed from existing system integrator. SI to submit documentary evidence for the same.

Minimum Specifications of the product is mentioned in the RFP. However, SI can offer better specs, if required to meet the SLA.

The system software licenses (including COTS products) shall be genuine, perpetual, full use and should provide patches, fixes, security updates directly from the OEM at no additional cost to Ahmedabad City Police for the entire period of contract.

Vendor shall have to take approval for schematic diagram of all components under ITCS Project from SSCDL before supply.

All assets (source code of the customized solution, raw videos, audios, scripts, blueprints, manuals, test plans, etc. and any other asset corresponding to the assignment) developed by the SI as part of this project shall be perpetual and exclusive property of SSCDL/SMC.

The SSCDL needs to 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 SSCDL. Selected bidder has to inform & take necessary approval from SSCDL/SMC in advance (minimum 2 weeks) for the digging or excavation required w.r.t. ROW/RI. The bidder is required to submit the detailed plan with drawing for approval

The selected bidder is expected to deploy an application/tool that can report consolidated quarterly SLA performance report. Further Volume 2 of RFP provides the functionalities of EMS which will be deployed by the selected bidder for efficient management of the system, reporting, SLA monitoring and resolution of issues.

SI shall be responsible for operations and maintenance of all the supplied and installed equipment during the entire O&M phase. In addition, SI shall be fully responsible for all maintenance activities for the period between installation of equipment and roll-out of the system.

SI has to comply the compliance of the data privacy act implemented or to be implemented by Government of India for the ITCS Project data. And if in case data privacy breaches at any stage than SI has to highlight the same to the SSCDL for further actions on immediate basis.

Bidder has to provide the Enterprise license software for RLVD, SVD, ANPR and ATCS (If new Software proposed). There should be no limitation of adding new devices in the software. No additional cost will be provided for software license if quantity of RLVD, SVD, ANPR and ATCS components increased in the future till the contract is valid. All the servers, storage and networking devices shall support leading architecture design patterns like Spine-leaf architecture, etc.

SI shall be responsible for Third-Party audit of the civil structure of installed poles form third party structural engineer and submit the audit report to SSCDL/SMC. All pole design has to be certified by the government authorised structural engineer in the design phase and structural stability and safety certificate of all poles to be submitted by government authorised structural engineer after installation of poles.

All the network and networking devices (i.e., Network Switches, Routers, UTM/Firewall) should support the Multicast.

If 10% or less of work is pending due to the factors beyond the control of the bidder for the respective phase than the FAT can be initiated of the respective phase and SI will be paid on pro rate data basis.

In the consortium agreement, roles & responsibilities (Including but not limited to Scope) of each member (Lead bidder & Consortium member) should be clearly defined. While at the time of the signing of the contract bidder has to submit the detailed break up for CAPEX & OPEX portion of respective members. In case of any dispute arising between consortium member (Lead bidder & Consortium member) and the SSCDL/SMC feels that the dispute is unresolved for the three month then the SSCDL/SMC may take decision to segregate/redistribute the scope of work and will pay them respectively or SSCDL/SMC may instruct One of the member from the consortium to do remaining work and will pay accordingly.

Purchaser may ask to selected bidder to continue the Operation & Maintenance for the 6th & 7th year basis mutually agreed terms and conditions.

SI has to submit the detailed As-Build drawing in Auto-cad, or any other similar software as per carried out work at all the site for all the components.

10. Annexure IV: List of Locations

10.1. List of proposed Traffic Signal Junctions for New Adaptive Traffic Control System

#	Junction name	Arm
1	Sona Hotel Circle	4
2	Goldan Circle	4
3	Umiya Circle	4
4	Bhavani Gems Circle	4
5	Shree Swaminarayan Mandir Rustombagh	3
6	Dkm Circle	3
7	Palanpurpatiya (Ganesh Mandir)	3
8	Baba Ramdev Chowk	4
9	Jahangirpura Bridge, Dabholi	4
10	Dabholi Gam	4
11	Katargam North Zone Office/ Laxmi Enclave Circle	5
12	Ramnagar	4
13	Sahara Darwaja	3
14	Katargam Zone Office / Gotalawadi	4
15	Mora Bhagal	5
16	Katargam Darwaja	3
17	Kasanagar	3
18	Amroli Char Rasta	4
19	Mansarowar	3
20	Nitaben Sabhya Circle (Subhash Garden Circle)	4
21	Kubernagarkatargam	3
22	Ved Darwaja	4
23	Valinath Chowk	3
24	Jhangirpura (Iskon Temple Circle)	3
25	Udhana Gam	3
26	Makkai Pul Junction	4
27	Gujarat Gas Circle	4
28	Bhulkabhavan School	3
29	Karni Mata Chowk / New Bombay Market	3
30	Adajan Gam	4
31	Star Bazaar Junction	4
32	Pal Jakatnaka	3
33	Swami Vivekanand Circle	5
34	Pal New Rto	4
35	Shree Ram Mobile Cross Road	4
36	Centre Point	3
37	Varun Kidney Hospital Circle	3
38	Vishwakarma Junction	4
39	Devji Nagar T Point	3
40	Magdalla Government Quarters T Point	3
41	Minaxi Circle	4
42	Precidency Circle	4
43	Nilgiri Circle	4

#	Junction name	Arm
44	Punapatiya/ Kangaroo Circle	4
45	Ajramar Char Rasta	4
46	Dhabkar Circle	4
47	Ongc Circle	4
48	Katargam Bridge / Gotalawadi	3
49	Mangadh Chowk	4
50	Sumul Dairy Road Under Alkapuri Bridge	4
51	Mamata Park Circle	4
52	Ankur Char Rasta	4
53	Shreeji Arcade Circle	4
54	Palanpurpatiya Circle (Mashhal Circle)	4
55	Jyotindra Dave Garden Tin Rasta	3
56	Union Bank ,Adajan Gam	3
57	Jeevan Yatra Circle	3
58	D Mart Teen Rasta	3
59	Madhuvan Circle	4
60	Riverdelacadamy (Tgb Circle	4
61	Hori Om Circle	4
62	Lp Savani Circle	4
63	Sheetal Char Rasta	4
64	Radheshyam TWP	4
65	V4u Traffic Circle	4
66	Pal Canal Jalaram Temple	4
67	Classic T-Point	3
68	Police Head Quarters	3
69	Lourdes Convent T-Point	4
70	Parle Point	3
71	Adajan Patiya	4
72	Sargam Shopping Center	3
73	Svnit Junction	4
74	Kargil Chowk Junction	4
75	Rahul Raj Mall	3
76	Shree Sai Mandir Junction	4
77	Magdalla Gam Junction	3
78	Magdalla Bandar T-Point	3
79	Dumas Resort Y Junction	3
80	Near Main Airport Junction	3
81	Suryapur Society Junction	4
82	Anvrat Near Petrol Pump	4
83	Breadliner Circle	5
84	Bhatar Char Rasta	4
85	Olive Circle	4
86	Navjivan Circle	4
87	Sosyo Circle	4
88	Anuvratdwar U M Road	4
89	Tuli Hospital T-Point	3
90	V M Sakariya Circle	3
91	St.Xaviers School	3

#	Junction name	Arm
92	Pizza Hut	3
93	City Bank Char Rasta	3
94	Science Center	3
95	Ashok Pan	4
96	Om Terrace	3
97	Nr. Barthan Primary School Char Rasta	4
98	Tulsi Dham/ Das Circle	4
99	Missile Circle (Rocket Circle)	4
100	Piyush Point	4
101	Patrakar Colony	4
102	Kailashnagar Junction	3
103	Althan Canal Junction	4
104	Shri Niketan Soc./ Shyambaba Temple	4
105	Vip Canal Road Junction	4
106	Ratnashyam Junction/ Ranjit Circle Vip Road	4
107	J B Diamond Circle	3
108	Zatkawadi, Lh Road	3
109	Tadwadi Junction	3
110	Matawadi Circle	4
111	Nr. Matawadi Circle Teen Rasta	3
112	Ghanshyam Nagar Lh Road	3
113	Labheshwar Bhavan	4
114	Santosh Nagar /Maruti Chowk	3
115	Chanchal Nagar	3
116	Bhaghwati Nagar Circle	3
117	Tapovan School Circle	4
118	Mahavir Chowk	4

10.2. List of proposed locations for Traffic Surveillance Cameras System

#	Location Name
1	Palanpur Patiya
2	Mangadh Chowk
3	Tadwadi Junction
4	Star Bazar Junction
5	Dumas Langar Char Rasta
6	Anurat Dwar, U.M. Road
7	Patrakar Colony Junction
8	Sumul Dairy Road, Under Alkapuri Bridge
9	Sargam Shopping Center
10	Gujarat Gas Circle
11	Pran Nath Hospital
12	Singapuriwadi
13	Dindoli Char Rasta Near Police Station
14	Kamal Gali
15	Madina Masjid Chowk
16	Soham Cicle
17	Kaddar Sanni Naad

#	Location Name
18	Kiran Chowk (Sarthana)
19	Classic T Point
20	Chauta Bazar
21	Udhna Railway Station
22	Sudama Chowk, Amroli
23	Lajamani Chowk, Amroli
24	Chaparbhata (Amroli)

10.3. List of Proposed locations for RLVD System

#	Location	Arms
1	Majuragate Junction	4
2	Athwagate	5
3	Prime Arcade	3
4	Honey Park	4
5	Palanpur Jakatnaka	4
6	Sahara Darwaja	3
7	Bhagal Char Rasta	4
8	Union Park	4
9	Suryapur Society Junction	4
10	Ramnagar	4
11	Gajera Circle	4
12	Hirabaug Junction	5

10.4. List of Proposed locations for Speed Violation Detection System

#	Location Name	Lane
1	Udhana Magdalla road - Jolly Party Plot	3
2	VIP Road - E-Space Building	3
3	S K Nagar - Dumas Langar (ONGC Char rasta)	2
4	Amba Talwadi - Ved road (Neru Farm Road)	2
5	South Zone Office - Unn Patiya	3
6	Parvart Patiya - Simada Check post	3
7	Simada Naka - D Mart Mall (From Sarthana Jakatnaka to overbridge)	3
8	Vaishali Teen Rasta - Simada (overbridge)	3
9	Pal RTO - Ichapur Haveli	3
10	Mora Bhagal - Jahangirpura char rasta	3
11	Dandi Road	3
12	Khajod char rasta - Althan junction	2
13	New Gaurav path (Adajan)	2
14	ONGC bridge	3
15	SVNIT Circle - Kargil Chowk	3

10.5.List of proposed locations for ANPR System

#	Location Name	Arm	Lane per arm
1	Surat Railway Station/Falsawadi	2	6

#	Location Name	Arm	Lane per arm
2	Dhanmora Complex/ Dhabkar circle	2	6
3	Sardar Bridge	2	4
4	Makkai Bridge	2	4
5	Mora Bhagal cross road	2	6
6	Mohan Mithai Junction Nr. Railway station	2	4
7	Variyav Check Post	2	4
8	Abhva Chokadi	2	4
9	Pal road ONGC junction	2	6
10	Textile Bridge	2	6
11	Batliboy to dindoli Bridge (Pramukh Park)	2	6
12	Kapodra Utran Bridge	2	4
13	Amroli Bridge	2	4
14	Jilani Bridge	2	4