Solapur City Development Corporation Limited

REQUEST FOR PROPOSAL

Revisions: Nil

Particulars	Details
Client	Solapur City Development Corporation Limited, Solapur, INDIA
Project Name	Implementation of projects under Smart City Mission in Solapur City
Assignment Name	Request for proposal for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1)
Document Issue Date	19/04/2017
Document Number	2017-18/04

Solapur City Development Corporation Limited,

New Planning Office, next to Doodh Diary,

Saat Rasta, Solapur, Maharashtra - 413003

April 2017

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 SOLAPUR Smart City Development Corporation Limited (henceforth referred to as "**SCDCL**" 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 prepare their technical proposal and formulae their financial offers ("**Bid**"). This RFP includes statements, which reflect various assumptions and assessments arrived at by SCDCL 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, SCDCL 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 are made in consideration of the intended objectives of the project, and may not be complete, accurate or adequate. Each Bidder must therefore conduct its own analysis of the information contained in this RFP and 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. SCDCL accepts no responsibility for the accuracy or otherwise for any interpretation of opinion on law expressed herein.

SCDCL, SMC 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.

SCDCL 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. SCDCL 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 SCDCL is bound to select a Bidder or to appoint the Selected Bidder (as defined hereinafter), for implementation and SCDCL 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 SCDCL or any

other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and SCDCL 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.

Important Dates

RFP for Implementation Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Solapur (Maharashtra)

S. No.	Activity	Deadline
1	Contract Period	5 Years
2	Delivery	Services to be offered as per schedule from the date of the Issuance of LoI/ PO.
3	Pre Bid Meeting	02/05/17
4	Bid Due date	1500 hrs on 22/05/17
5	Date and Time of Opening of Technical bid	1600 hrs on 23/05/17
6	Date and Time of Opening of Financial bid	To be notified
7	Venue of opening of Technical & Commercial Bid/s	Solapur Smart City Office, New Planning Office, next to doodh diary, Saat Rasta, Vijapur Road, Solapur
8	Bid Processing Fees (Non-refundable)	Rs. 25,000/- (Twenty Five Thousand Only) By Demand Draft
9	Bid security (EMD)	EMD of Rs. 70,00,000 (Rupees Seventy Lakh only)
10	SCDCL Contact email ID	solapurcitydcl@gmail.com

NOTE: Please address all queries and correspondence to:

Chief Executive Officer
Solapur Smart City Office, New Planning Office,
next to Doodh diary, Saat Rasta,
Vijapur Road, Solapur Maharashtra- 413003,
-
E-mail: solapurcitydcl@gmail.com

CONTENTS

LIST OF TABLES

General Instructions

Proposal in the form of BID is requested for the item(s) in complete accordance with the documents/attachments as per following guidelines.

- ✓ This is a Bid for Supply, Installation and commissioning of Leased Lines for Solapur Smart City Project.
- ✓ Bidder shall upload their bids on https://www.mahatenders.gov.in
- ✓ The Bid Security and non-refundable bid processing fees in a separate sealed envelope super scribed with the bid document number to SCDCL Office.
- ✓ The bid shall specify time schedule of various activities.
- ✓ Bids complete in all respects should be uploaded on or before the BID DUE DATE.
- ✓ Services offered should be strictly as per requirements mentioned in this Bid document.
- ✓ Please spell out any unavoidable deviations, Clause/ Article-wise in your bid under the heading Deviations.
- ✓ Once quoted, the bidder shall not make any subsequent price changes, whether resulting or arising out of any technical/commercial clarifications sought regarding the bid, even if any deviation or exclusion may be specifically stated in the bid. Such price changes shall render the bid liable for rejection. However, SCDCL reserve the right to revised financial offer.
- ✓ The duration of the Contract period for this activity will be of 5 years.

In addition to this RFP, the following sections attached are part of Bid Documents.

Section – 1 Project Profile
Section – 2 Scope of Work
Section – 3 Eligibility Criteria
Section – 4 Instructions to the Bidders
Section – 5 Price Bid
Section – 6 Formats and Annexures
Section – 7 SLA Agreement

Instruction to the bidders for online bid submission:

- Tender documents are available only in electronic format which Bidders can download from the website www.mahatenders.gov.in
- The bids have been invited through e-tendering route i.e. the eligibility criteria, technical and financial stages shall be submitted online on the website www.mahatenders.gov.in
- In case of any clarifications required, please contact on email ID of SCDCL at solapurcitydcl@gmail.com

Definitions

In this document, the following terms shall have following respective meanings:

1. "Acceptance Test (AT)" means the acceptance testing of the ordered product and services on completion of installation and commissioning as per the requirement.
2. "Acceptance Test Document" means a document, which defines procedures for testing the installed and commissioned product and services against requirements laid down in the Agreement.
3. "Agreement" means the Service Level Agreement to be signed between the successful bidder and SCDCL including all attachments, appendices, all documents incorporated by reference thereto together with any subsequent modifications/changes/corrigendum's, the RFP, the bid offer, the acceptance and all related correspondences, clarifications, presentations.
4. "Authorized Representative/ Agency" shall mean any person/ agency authorized by either of the parties.
5. "SMC" shall stand for Solapur Municipal Corporation.
6. "Bidder" means any agency who fulfils the requirement laid in the RFP documents and is possess the required expertise and experience as per the RFP document. The word Bidder when used in the pre-award period shall be synonymous with Bidder, and when used after award of the Contract shall mean the successful Bidder with whom SCDCL signs the Service Level Agreement for executing the project.
7. "Center" means Zonal Offices and Head office of SMC
8. "CCC" means Command and Control Center
9. "Contract" is used synonymously with Agreement.
10. "Corrupt Practice" means the offering, giving, receiving or soliciting of anything of value or influence the action of a public official in the process of Contract execution.
11. Default Notice" means the written notice of Default of the Agreement issued by one Party to the other in terms hereof.
12. "Fraudulent Practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive SCDCL/SMC of the benefits of free and open competition.
13. "Good Industry Practice" means the exercise of that degree of skill, diligence and prudence which would reasonably and ordinarily be expected from a reasonably skilled and experienced Operator engaged in the same type of undertaking under the same or similar circumstances.
14. "GoI" shall stand for Government of India.
15. "GIS" shall stand for Geographical Information Systems
16. "Implementation Period" shall mean the period from the date of signing of the Agreement and up to the issuance of Final Acceptance Certificate.
17. "Law" shall mean any act, notification, by-law, rules and regulations, directive, ordinance, order or instruction having the force of law enacted or issued by the Central Government and/ or the Government of Maharashtra or any other Government or regulatory authority or political subdivision of government agency.
18. "LoI" means Letter of Intent, which constitutes the intention of the SCDCL to place the Purchase Order with the successful bidder.
19. "Work order" shall mean a formal order issued by SCDCL to the successful bidder covering delivery timelines, SLA and other terms and conditions.

20. "Operator" means the entity/company providing the services / executing the project under the Agreement and is used synonymous with Bidder/Successful Bidder.
21. “OEM” Shall stand for Original Equipment manufacturer
22. “PoC” shall stand Proof of Concept.
23. “Period of Agreement" means 5 years’ period starting with the commissioning of all Hardware and software ordered as per the Scope of work for the Solapur Smart City Project.
24. Request for Proposal”, means the detailed notification seeking a set of solution(s), services(s), materials and/or any combination of them.
25. “Requirements” shall mean and include schedules, details, description, statement of technical data, performance characteristics, standards (Indian as well as International) as applicable and specified in the Agreement.
26. “Site” means the location(s) for which the Contract will be signed and where the service shall be provided as per agreement.
27. "Service" means provision of Contracted service viz., operation, maintenance and associated services for Solapur Smart City Project.
28. Service Down Time" (SDT) means the time period when specified services/network segments with specified technical and operational requirements as mentioned in this document are not available to SCDCL. The network shall be operational on all days of a year and 24- hours/ day with in the uptime specified in the Service Level Agreement (SLA). The network is considered as operational when all Centers at all tiers/ levels are working, providing all/ specified services as mentioned in full capacity at all locations in the network.
29. “SCDCL” means Solapur City Development Corporation Limited
30. "Third Party Agency" means any agency, if/as appointed by SCDCL for monitoring the Solapur Smart City Project during commissioning and operation.
31. “Termination Notice” means the written notice of termination of the Agreement issued by one Party to the other in terms hereof.
32. “Unplanned downtime” means an instance other than the planned down time in which ordered services are not available to SCDCL.
33. "Uptime" means the time period when specified services with specified technical and service standards as mentioned in Section-5 are available to SCDCL and its user organizations. The uptime will be calculated as follows:
    “Total time in a quarter (in minutes) less total Service Down time (in minutes) in the quarter”
34. "% Uptime" means ratio of 'up time' (in minutes) in a quarter to Total time in the quarter (in minutes) multiplied by 100.

SECTION : 1

PROJECT PROFILE

SECTION 1

1.1 Introduction

Ministry of Urban Development, Government of India (MoUD) launched the Smart City Mission, the Mission Transform-Nation, on 25th June 2015. It was declared that 100 Smart Cities will be developed in the country through a competitive challenge. A two stage selection process was adopted for selecting 100 cities across the country to participate in the Smart Cities Challenge. The evaluation process was concluded and the final list of the top 20 winning proposals was announced on 28th January 2016 by the Union Minister for Urban Development. Proposal of Solapur was one of the top 20 winning proposals from the country and is selected to receive the funding from MoUD during first year. The Mission guidelines mention that the cities are required to establish a Special Purpose Vehicle (SPV) for implementation of the smart city projects which will plan, appraise, approve, release funds, implement, manage, operate, monitor and evaluate the Smart City development projects. Solapur Municipal Corporation has formed Solapur City.

.The Solapur City Development Corporation Limited seeks to develop Smart City solutions and state of art City Operation Centre of the City, which will help to deliver smart city services under Phase 1

The following identified Smart solutions are to be included as part of Solapur's smart city initiative:

1. Public Safety and Safe City Operations
2. Public Wi-Fi and Urban Service Delivery over Public Wi-Fi
3. Environmental Monitoring
4. Integration for Smart Kiosks for Citizen Information
5. E-governance Integration (RTS)
6. Network and connectivity
7. City Data Centre and Integrated Command Centre
8. Smart Lighting Integration

1.2 Project Objective:

The Pan city ICT Infrastructure is essentially intended to provide a high-speed connectivity at Government offices and public places through creation of Wi-Fi hotspots to support/implement all the smart solutions, city surveillance system. The project objectives broadly are as follows:

- To provide inexpensive and pervasive connectivity all across the city
- To provide city surveillance system for effective management of city
- To provide internet facility to the citizens across the public places through creation of Wi-Fi hotspots
- To provide 24*7 uninterrupted connectivity across the city
- To establish a medium for quick data gathering from multiple sources and faster decision making
- To act as a channel for integration of all the city services like Smart Lighting, Smart Kiosks, E Toilets, 15 Mandatory services listed under RTS
- To enable the government to have advanced communication products/platforms and better security and surveillance systems

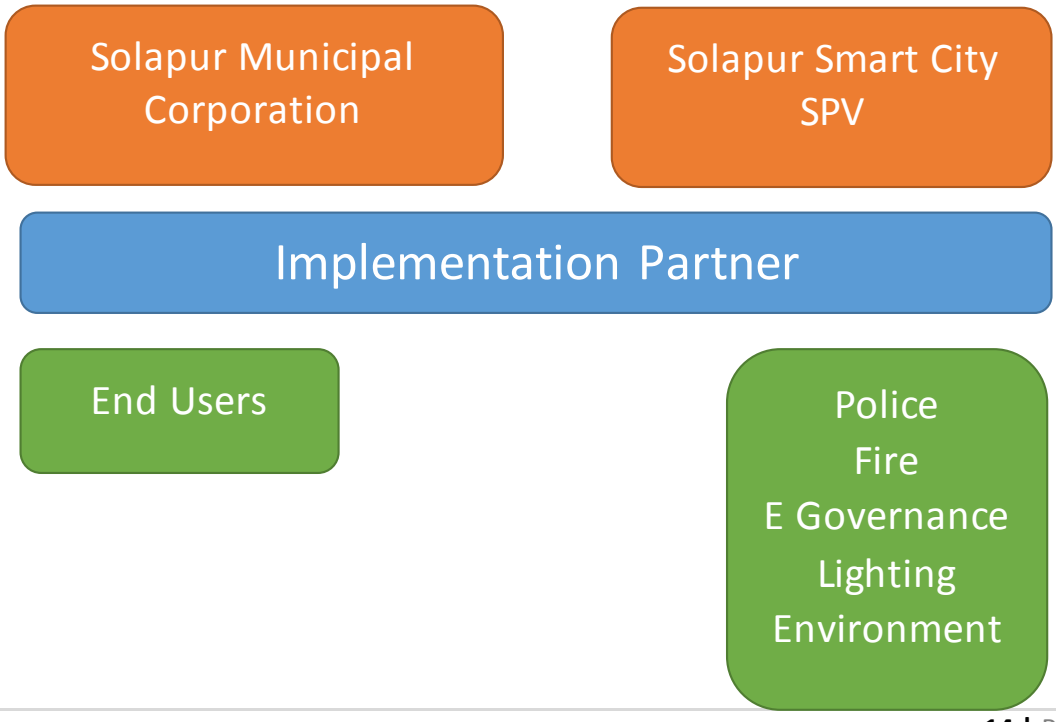
1.3 Benefits Envisaged

A pan city ICT infrastructure will support the inclusion of almost all digital assets onto a common platform, which will ensure confluence of data from multiple sources, applications, sensors, objects and people. The establishment of this project will provide high quality, reliable, cost effective and ICT Infrastructure to the city administration. It will be the provider of various smart solutions under the smart city mission for the city like smart surveillance system, Smart parking, smart traffic monitoring system, Sensors, Wi- Fi hotspots and availability of high speed connectivity. This project will have multifold benefits across the government departments and the effect will be felt by citizens. Some of the key benefits are:

- Government will have increased operational, financial efficiency and effectiveness
- Educational institutions would have improved connectivity across schools and universities
- City and Community center facilities will have improved connectivity for providing on-line services
- Police department will have high-quality video connections allowing for a greater security and surveillance
- Traffic management will be improved with automated traffic surveillance systems
- Fire departments will have the ability to direct staff remotely and utilize the reliable communication infrastructure for quick responses
- Environmental monitoring of factors such as air pollution or rain/monsoon detection will be easier and reliable
- Waste water management will be made possible with SCADA connectivity (Integration)

1.4 Stakeholders

The implementation and successful execution of this project, will require support and involvement from multiple stakeholders. The project requires collaboration between multiple stakeholders for its successful execution. It is therefore important to understand the various stakeholders envisioned to be part of this project and the role that they are expected to play. Following are the critical stakeholders whose involvement will drive the project and enable the establishment of a strong project governance:



SECTION: 2

ELIGIBILITY CRITERIA

SECTION 2

2.1 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 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 the SCDCL 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:

Table 1: Eligibility Criteria

S.no.	Specific Requirements	Documents Required
1	Bidder should be a company registered under Companies Act, 1956 and should have been operating for the last five years as on 31st March 2016	Certificates of incorporation & Self-Declaration Certificates
2	Bidder should be an established IT System Integrator and should have been engaged in setting-up and Operations & Maintenance Services of Network and Data Centres for a period of at least five years as on 31st March 2016	Work Orders / Client Certificates confirming year and area of activity should be enclosed.
3	The bidder must have annual turnover of at least Rs. 100 Crores (for the lead bidder in case of consortium) for each of the last three financial years as on 31st March, 2016. Annual Turnover of the bidder generated solely from Networking (setting up or O&M) and Data Centre (setting up or O&M) during each of the last three financial years, should be at least Rs. 250 crores. In case Bidder is a wholly owned / 100 % subsidiary, the turnover of Parent company would be considered for eligibility	Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be enclosed. CA certificate mentioning turnover of the bidder should be enclosed.
4	The Consortium Partner (non-lead bidder) should have average annual turnover of at least Rs. 30 crores from ICT or ITES in last three financial years (ending 31 March 2016) For a 100% subsidiary, parent company average annual turnover would be considered for evaluation purposes.	Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be enclosed. CA certificate mentioning turnover of the bidder should be enclosed.

S.no.	Specific Requirements	Documents Required
5	The bidder must have positive net worth and should be Profit making in each of the last three financial years as on 31st March, 2016	Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be enclosed. CA certificate mentioning net profit of the bidder should be enclosed
6	The bidder should have demonstrable expertise and experience in executing at least ONE project of Network Integration / Systems Integration/Data Centre (setting up or O&M) anytime during last five years as on 31st march 2016, having a minimum value of Rs. 100 crores or TWO projects having a minimum value of Rs. 50 crores each. Note: In case Bidder is a wholly owned subsidiary, the experience of Parent company would be considered for eligibility	Details of such projects undertaken along with clients' on-going/ completion certification / letter should be enclosed. Undertaking from the Parent company to support its wholly owned subsidiary
7	The bidder should have demonstrable expertise and experience of setting up or O&M of integrated control room/city wide control room/emergency response center during last three years ending 31st Mar 2016 - One such Project having minimum 20 seating capacity Note: In-house projects for their own corporations executed by the bidder shall not be considered for above purpose. Note: In case Bidder is a wholly owned subsidiary, the experience of Parent company would be considered for eligibility	Copies of work order and the client certificates for satisfactory completion of project . Undertaking from the Parent company to support its wholly owned subsidiary
8	Bidder or OEM should not be blacklisted by any Ministry of Government of India or by Government of any other State in India or by Government of Maharashtra or any of the Government PSUs at the time of bidding.	Certificate / affidavit mentioning that the Bidder is not blacklisted by any Ministry of Government of India or by Government of any State in India or by Government of Maharashtra or any of the

S.no.	Specific Requirements	Documents Required
		Government PSUs. Self-Declaration Form must be submitted
9	OEMs of proposed equipment/components should have existence in India for last five years as on 31st Mar 2016. a) OEMs for Routers and Switches of Data center/CCC/zonal offices should be in the Leadership quadrant in the latest available Gartner Magic Quadrant b) OEM for other networking equipment's should be in the top Five positions in terms of market share in India as per latest available report.	Undertaking & copies of supporting documents from the Bidder confirming the compliance along with the OEM authorization.
10	The bidder should have a Permanent Office in Solapur or should setup in 45 days from the award of Work Order.	Copies of any two of the followings: Property Tax / Electricity / Telephone Bill / VAT/ CST Registration /Lease agreement. Or Undertaking to open Office in Maharashtra

Note:

- ✓ The Bidder must attach valid documents in support to their Technical and Financial capabilities/strength, as mentioned above. Without proper supporting documents, the Bid proposals are liable to be rejected.
- ✓ The bidder should furnish the OEM MAF for all the active/passive components Manufacturer's Authorization Form.
- ✓ The OEM should not be blacklisted in India in PSU/State Govt /Central Govt or Defense in the last 5 years and should be a present in India since at least 10years.
- ✓ The OEM for Active devices such as Network switches, routers, wireless & data center servers, IP telephony, video conferencing (should be listed as a leader's in the Gartner Magic Quadrant) as per the latest report
- ✓ The OEM for network security products including Firewall, IPS should be in Leaders/Challengers Quadrant in the latest Gartner's magic quadrant
- ✓ The OEM for Outdoor rugged switches & outdoor Wifi should have been installed in at least 2 City surveillance/Smart City/City Wifi projects in India in the last 5 years or must have sold at least 3000 units in India in the last 3 years. OEM to give self-certification along with the names of the projects/cities.
- ✓ The OEM for Video management solution must be installed in at least 2 City Surveillance/Smart City projects supporting at least 200 or more IP cameras in India in the last 5 years.
- ✓ OEM bidding in the tender should not have filed for bankruptcy and should have posted profit in last seven years.
- ✓ All active network devices (Wired, Wireless) and Network Management System (NMS) quoted by the bidder should be from a single OEM only and Single NMS should support it.
- ✓ The OEM of active devices including Data centers, network, wifi, security to be quoted by the bidder should have local Technical Assistance Centre (TAC) support in India through a toll free number and Returned Materials Authorization (RMA) depot in India including in Mumbai/Thane/Navi Mumbai/Pune region. Customer and Partner (on behalf of the customer) both should be able to log a call 24x7 via phone, email or website for technical assistance.

SECTION: 3

SCOPE OF WORK

SECTION- 3

Scope of Work

Solapur City Development Corporation limited (SCDCL) seeks proposal from the interested bidder to bid for the "RFP for Implementation Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Solapur". SCDCL envisaged to create a pan city ICT infrastructure for effective and efficient implementation of Solapur Smart city project. It is envisaged to implement various smart solutions like Integrated Command and Control Center, Smart surveillance system, Public Wi-Fi hotspots, environmental sensors, Smart lighting etc. riding on the Pan city ICT infrastructure created under this project.

3.1 Smart City Solution Architecture

The overall Smart City solution architecture of the components envisaged under the ""Pan City ICT Infrastructure" is as given below.

3.1.1 Data Center Layer

The data center layer will house centralized computing power required to store, process and analyze the data to decipher actionable information. This layer includes servers, storage, ancillary network equipment elements, security devices and corresponding management tools. It will be scalable to cater to the increasing computing and storage needs in future.

3.1.2 Command and Control Layer

The command center and control units will enable citizens and administrators alike to get a holistic view of city conditions. Such control units will take shape of either an exhaustive command center or control applications which can be viewed over a web browser or available in form of a mobile application. The implementation vendor will have to develop a command center at a site location determined by SMC/ SCDCL and web/ mobile based viewing tools for understanding the ambient city conditions.

3.1.3 Network Layer

The secured network layer will serve as the backbone for the project and provide connectivity to gather data from sensors and communicate messages to display devices and actuators. It will support the Wi-Fi services and other smart elements (sensors and displays) at given locations. The network layer will be scalable such that additional sensors, actuators, display devices can be seamlessly added and more Wi- Fi spots created in future. Provisioning of bandwidth will not be included in the scope of the Implementation Vendor; however, all electronics required at the edge locations to use the bandwidth will be included in the scope of the system integrator.

3.1.4 Smart Application and Integration Layer

The smart applications layer will contain data aggregation and management systems (rules engines, alerting systems, diagnostics systems, control systems, messaging system, events handling system), and reporting / dashboard system to provide actionable information to city administrators and citizens. It will be an evolving layer with applications added and integrated as and when new applications are developed at SMC. While aspects of ambient conditions within the city will be gathered through various sensors deployed, some city specific data will come from other government and non-government agencies. It is through the integration layer – that data will be exchanged to and from the under lying architecture components and other data from system developed by government (such as police department, meteorological department, street lights

department, water department, irrigation department, transport organizations within Solapur , etc.) and non-government agencies

3.1.5 Sensor Layer

The sensor layer will help the city administration gather information about the ambient city conditions or capture information from the edge level devises like emergency call boxes, cameras, etc. Solapur city is expected to have multiple environmental sensors across the city, to measure ambient conditions such as light intensity, temperature, water level (for chronic flood spots), air pollution, noise pollution and humidity.

3.1.6 Service Delivery and Consumption Layer

The output field devices layer will contain display devices or bi-directional (input & output) devices connected to the network which will be used by citizens to consume - and for administrators to provide - actionable information. Such field devices include digital messaging boards, environmental data displays, PA systems and emergency boxes.

3.1.7 Security Layer

As ambient conditions, actuators and display devices are now connected through a network, security of the entire system becomes of paramount significance and the system integrator will have to provide:

- Infrastructure security- including policies for identity and information security policies
- Network security- including policies and practices adopted to prevent and monitor unauthorized access, misuse, modification, or denial of a computer network and network accessible resources, etc.
- Identity and Access Management – including user authentication, authorization, SSL & Digital Signatures for systems developed under the scope of work
- Application security- including hosting of government websites and other Cloud based services, adoption of Technical Standards for Interoperability Framework and other standards published by GoI for various e-Governance applications
- End device security, including physical security of all end devices such as display boards, emergency boxes, kiosks etc.

Following security parameters should be included for all smart elements, but not limited to:

- Identity and access management
- User/administrator audit log activity (logon, user creation, date-time of PA announcements, voice recording etc.)
- Secured data storage (storage of video/image/voice/location/data captured by various smart elements)
- SSL/TLS encryption for web and mobile application based interfaces for sensitive data transfer
- Protection against Denial of Service (DoS) and Interference attacks to public Wi-Fi Devices and other components under scope of work

3.2 Broad Scope of Work

The scope of work under this RFP is broadly divided into two components:

A. System Integration Component: Design, Supply, Installation, Commissioning of IT and Non-IT Infrastructure to be deployed Pan City under the Solapur Smart City project.

B. Operations & Maintenance Component: Operation and Maintenance of entire infrastructure (IT and Non-IT) installed as per the scope of work of this RFP.

C. System Integration Component:
As described, this is a pan city ICT infrastructure project. The bidder is responsible for design, supply, installation, commissioning of various smart solution components. In order to effectively describes the scope of work under the system integration component it is further divided into following subcomponents:
    1) Smart City Surveillance System (SCSS)
    2) Wi-Fi Hotspot @ Public places
    3) Environmental Sensors
    4) Integration of Smart Street Lighting
    5) Command and Control center
    6) IT infrastructure for City wide network (by lease)
    7) Integration of RTS and Smart Kiosks

Selected Bidder is responsible for below mentioned indicative list of activities applicable for all the components/sub-components of the project but not limited to: -

- Detailed feasibility study and actual site survey for Poles, CCTV Cameras (including Type and quantity), Wi-Fi access points, Sensors (Including Type and QTY), Positioning of junction box, Smart Street Lighting Poles, source of power supply, last mile cabling route etc.
- For assessing citizen need expert public opinion must be sought by successful bidder
- Design, supply, installation, testing, commissioning of all the hardware (IT & Non-IT) and software inclusive of cables and all applicable accessories required for the successful completion of the entire projects as per the scope of work and technical specification of the RFP at the respective locations.
- Setting up and operations of command and control center.
- Obtaining the required permissions from the authorities/local bodies. However, SMC will provide adequate assistance/support as and when required.
- Comprehensive Last mile connectivity (including supply, installation & commissioning of required material/hardware) between utilities and nearby Junction box (connectivity medium like CAT-6/fiber as per the feasibility study report) including supply of active components and passive components within the junction box
- Civil Work (Supply, Erection and commissioning) of Non-IT infrastructure like poles / frames/ fixtures/ housing etc. with proper electrical earthing (as per IS-3043) wherever required based on the feasibility study report.
- Bidder has to ensure that on completion of work, site has to be restored to its original condition as per rules / provisions of respective local bodies/authorities.
- Integration of entire solutions with the various smart city components/applications/solutions for achievement of overall objective of Solapur smart city project .An indicative Bill of Material (BoM) is defined in Financial Bid format However, bidder has to provision all the required hardware/ software/ services which may have been inadvertently missed out to successfully run the entire system. Quantity Variation up to +/- 20% is possible/allowed while placing the order based on actual requirement.

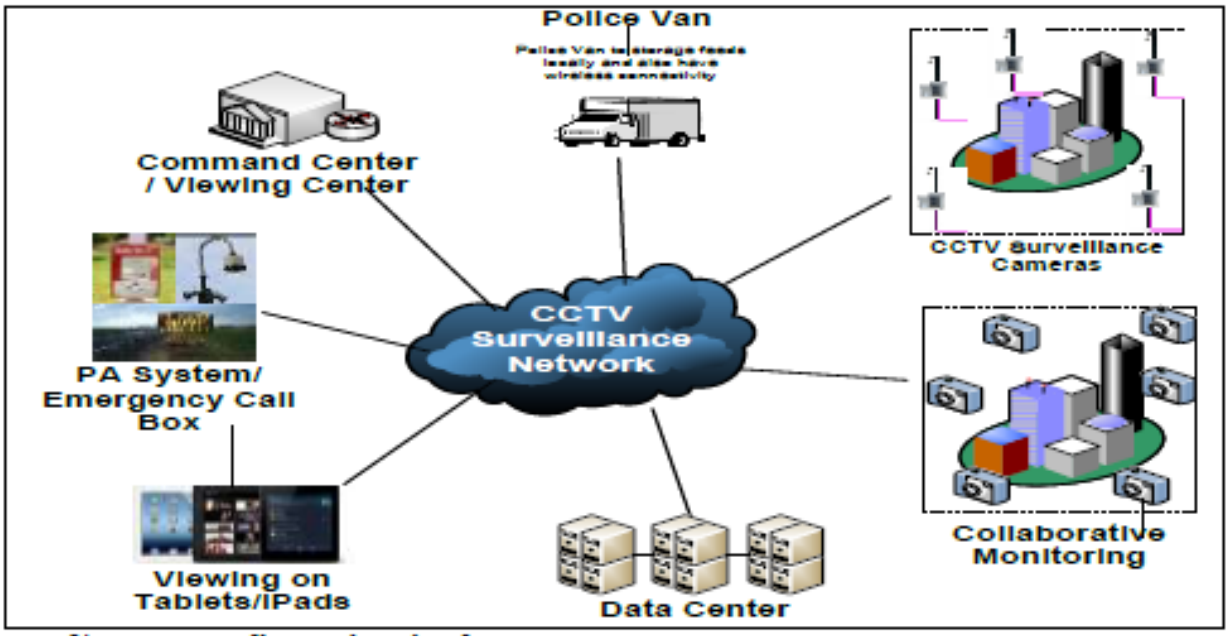
3.3 OEM Support:

- The bidder should submit authorization certificate of Original Equipment Manufacturer (OEM) (or multiple OEMs) specific to the bid. The bidder should have a back-to-back support agreement/arrangement for services including supply of spare parts etc. with the OEMs of products like Networking devices, Servers, CCTV cameras etc. which includes the post-sales support activities for the entire project period.
- The bidder shall furnish undertaking confirming compliance to technical specifications and complete functional requirements as stated in the bid document, interoperability and performance guarantee for the complete solution, comprising of overall proposed solutions taking complete ownership and responsibility of the complete solution and all equipment proposed from OEMs.

- Operation and maintenance of entire project (IT, Non-IT and Software) as per the scope of work for the period of 5 years from the date of Go Live.
- The IP Pool for the project will be provided by the SCDCL.
- Actual power/electricity required will be provided by SCDCL. However, extension till the last mile/actual utility will be in the scope of successful bidder.
- The RoW (Right of Way), as required for the digging and laying of underground cables and foundations shall be provided by SCDCL.
- Government of Maharashtra is in the process of coming up with a state-wide Surveillance project, successful bidder will be responsible for integration entire solution procured under this project with any such centralized system that may come in the future.
- The system integrator will also be responsible for data migration from the existing applications/systems such as CSITMS etc. in the proposed solution. The system integrator will be responsible for integrating SMC applications such as Integrated Transit Management System (ITMS) and Automatic Fare Collection System (AFCS) for BRTS and AMTS, ERP system, GIS, complaint redressal system (CCRS), solid waste management system, SCADA system, etc.

3.4 Smart City Surveillance System (SCSS)

SCDCL plans to build a Smart City Surveillance System (SCSS) providing city-wide CCTV surveillance infrastructure capable of feature like ***Panoramic Cameras, Video based analytics,*** etc. A robust city wide surveillance system will enable SCDCL and Police department to keep a watch on sensitive areas of the city through a centrally integrated operations and monitoring on one application layer. Further, SCSS will provide advanced level of digital security and surveillance system.



Bidder is responsible for Design, supply, installation, testing, commissioning of entire smart city surveillance system including of all the components like cameras, video management system as per the technical specification and scope of work of this RFP during the contract duration.

- It is envisaged that Smart City Surveillance System should be IP based surveillance system installed at selected locations for smart traffic management system and citizen safety via surveillance.
- Detailed list of location for Solapur Municipal Corporation/SCDCL are mentioned in Annexure - A. Detailed list of location for Solapur Police will be shared with the successful bidder. However, while doing detailed feasibility study and site survey activity bidder is required to include type and quantities of camera required at each location.
- The proposed video surveillance system will involve setting up of IP based outdoor security cameras across various locations in the Solapur City. ***The video surveillance data from various cameras deployed will be stored and monitored at the Command and Control center located at Police Commissioner Office, Solapur or any other location as suggested by the client***
- Bidder is responsible for Integration of smart city surveillance system with command and control center of SCDCL and command/monitoring center of Police department and other project/solution/initiatives under the Solapur smart city project.

3.5 Cameras:

- Cameras being the core of the entire Surveillance system, it is important that their selection is carefully done to ensure suitability & accuracy of the information captured on the field and is rugged, durable & compact.
- These cameras need to work on 24 X 7 basis and transmit video feeds to the data center and should be capable to capture the video feeds at a lower FPS during the lean period. However, Police Department 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.
- The complete tracking of a 'wanted' vehicle identified or flagged by Police should be possible on the GIS map.
- Positioning of Cameras should be such that it covers the entire road/lane available at the respective locations.
- Cameras should be installed on proper pole/Gantry at the locations finalized by the SCDCL. However, there are locations in the city where poles are already installed/available. It is envisaged that selected bidder should cover the exact availability and requirement of setting up of new poles in their detailed feasibility status report.

- Information security policy Bidder is also responsible for preparing the Information security policy of the project within three months from the date of kick-off which will be further reviewed and approved by the Solapur city police department.
- Proposed solution of smart city surveillance including fixed cameras, network based digital recording system and the centralized software should be from reputed and approved manufacturer which can be integrated to any other manufacturer having ONVIF supported hardware and VMS software. The bidder should submit the OEM Authorization for the same along with the technical bid.
- The proposed Video Management System shall provide a complete end-to-end solution for security surveillance application. The control center shall allow an operator to view live / recorded video from any camera on the IP Network.
- The Surveillance System should not have any limit on the number of cameras to be connected for Surveillance, Monitoring and recording. Any increase in the no. of cameras should be possible by augmentation of hardware components on which the VMS has been hosted.
- The Surveillance System shall support distributed viewing of any camera in the system using Video walls or big screen displays.
- The Surveillance System shall support alarm management. The alarm management shall allow for the continuous monitoring of the operational status and event-triggered alarms from system servers, cameras and other external devices.
- It should be possible to integrate the Surveillance System with 3rd-party software, to enable the users to develop customized applications for enhancing the use of video surveillance solution. For e.g., integrating alarm management to initiate SMS, E-Mail, VoIP call, etc.
- The bidder should also confirm that the proposed solution will integrate with any supported hardware and software without any interfacing problems.
- SCDCL has also envisaged to strengthen the smart city surveillance system with implementation of following systems: -

3.5.1 City Surveillance System: The City surveillance system shall cover the following capabilities:

- Implementation of CCTV surveillance system covering entire city with focus on state of art security system covering major traffic junctions, municipal parks, tourist places and key gathering places through the Video Camera feeds at the Command and Control Centre.
- To receive collaborative videos from different locations (airport, railway stations, roadways, temples, malls, metro stations, fair, festivals etc.) and to display the selected videos on videos on wall and store them, if required.
- The system should be able to integrate with the incident management with social media like twitter, Facebook, google+ etc. The engine should have capability to be used to extract data using API or web crawler and to analyze messages from social media during investigation.
- To have capability to display high resolution satellite imagery and vector maps. To show the camera, Wi-Fi Hotspot, LED display screen locations on the maps
- Bidder is also responsible for integration of existing CCTV cameras installed in the city by SCDCL/Home department**.**

3.5.2 Video Analytics System: -

- SCDCL envisaged to implement video analytics system on pilot basis at 4 major junctions/locations in the Solapur city. Further based on the performance of the pilot project it may implemented at further locations/junctions.
- The video analytics software should be capable enough to perform following tasks:
  1. Object detection: should be able to detect Un-identified/Abandoned/unattended objects.
  2. Attribute based search for Objects and People such as vehicle color, cloth color, size, height etc.
  3. Object Origin detection i.e. to detect the unattended object from the time it first appeared on the view of the camera.
- The alerts generated by this video analytics system should be automatically registered in the CCC application's list of events and incidents.

3.5.3 Signboards for CCTV camera locations:

- It is necessary that the CCTV Camera locations should have some standardized signs informing the public of the existence of CCTV cameras. This will bring about the transparency on installation of CCTV cameras and no one would be able to later complaint for the breach of privacy. The specifications for the signboards are provided in the annexure.

3.5.4 Storage/Recording Requirements:

- It is proposed that the storage solution should be modular enough to ensure compliance to the changes in storage/recording policy, to be evolved upon initial deployment of the system.
- The video feeds would be kept in two storage formats i.e. primary for 15 days and secondary for 30 days. After 30 days, the video feeds would be overwritten unless it is flagged or marked by the Police/appropriate authority for investigation or any other purpose. The video feeds of all relevant cameras capturing the incident in question would be stored until the Police/appropriate authority deem it good for deletion. Further, incidents that are flagged by the Police or any court order, the video of the relevant portion from all relevant cameras should be stored/archived separately for investigation purposes.
- Regardless of the above, the image of the License plate extracted by ANPR software, along with the timestamp and location of the image capture will stored for a period of 3 months.
- Full audit trail of reports to be maintained for 90 days.

- Retrieval time for any data stored should be max. 4 hours for critical data & 8 hours for other data.
- The Recording Servers / System, once configured, shall run independently of the Video Management system and continue to operate in the event that the Management system is offline.
- The system shall support H.265 or better, MPEG-4 and MJPEG compression formats for all analog cameras connected to encoders and all IP cameras connected to the system.
- The system should not limit amount of storage to be allocated for each connected device.
- The on-line archiving capability shall be transparent and allow Clients to browse and archive recordings without the need to restore the archive video to a local hard drive for access.

3.6 Wi-Fi Hotspot at Public places: -

SCDCL aims at providing internet facility at public places to its citizens via setting up of Wi-Fi hotspots at the public places like Parks, Tourist Places and other public places spread across the city.

- The Bidder is responsible for setting up of Wi-Fi Hotspot including supply installation and O&M of all the required hardware and software as per the technical specification and scope of work of the RFP.
- Detailed list of locations along with the no. of Access points at each location will be shared with the successful bidder.
- It system should support features such as user authentication, access etc. through OTP (One Time Password) on mobile no. & email. It should be capable to put a cap on the user session and amount of data consumed, regulate bandwidth besides allowing users to buy in the extras usage access.
- Thereby it shall be required to be integrated with a Payment and SMS Gateway along with a centralized billing mechanism. The proposed solution should have an appropriate billing application/ mechanism for the users opting for paid packages plan beyond threshold limit.
- The proposed solution should be on a "Cloud based model" inclusive of all the components like WLAN Controller, Authentication, Authorization and Accounting (AAA), RADIUS, SMS Gateway, Payment Gateway, customization and branding of services, integration with any third-party services as and when required).
- The proposed cloud based solution should be fully secured and as per WPC regulations/guidelines. Bidder is responsible for keeping log of users by storing minimum required information like Phone No, MAC & IP addresses, access time, duration, data consumed etc.
- The bidder is required to submit a OEM authorization letter confirming that proposed Cloud based controller will allow/support Access Point of any make and model and will be able to auto detect and plug-n-play of Access points.
- The proposed solution should allow firmware/ patch upgrade and monitoring from a central location.

3.7 Smart Environmental Sensors

- Bidder is responsible for supply, installation, commissioning and O&M of following types of Environmental sensors:

a) Ambient Air quality
b) Temperature and
c) Humidity levels
d) Water quality
e) Wind Speed
f) Rain Gauges

- The sensors should be able to provide dual feed, one for local display and one for centralized command and control center
- Proposed solution should allow to store the data from sensors in a hard disk or computer placed at command and control center or central location.

3.8 Smart Street Lighting Integration:

As a part of the Smart City Initiative, SCDCL envisages to install PAN City Smart Street lighting within and outside the ABD area. Please note that the bidder scope is the integration of Smart Lighting with Command and Control Center.
Smart Street light monitoring and control system should comprise of the following:

- A luminary equipped with an external control node which will On/Off/Dim as per the command given and which can log all the critical parameters of the street light fixture connected to it.
- A Wireless Gateway unit that wirelessly collects the data from all the street light controllers in its vicinity through an open communication protocol. The gateway is placed inside the feeder pillar or on the pole and communicates it to the servers through CPU.
- The communication between the Gateway and central server is through GPRS / GSM / Ethernet / WIFI based communication.
- A very powerful yet intuitive web-based software is considered for the interface between the City managers and the Smart Lights. City managers can install this on the server and securely access it from anywhere using a web browser with proper authorization.

3.9 Command and Control Center (CCC):

- Looking at the huge volume of information generation with the help of pan city ICT infrastructure it is envisaged to have a Centralized Integrated Command and Control Center for Solapur Smart City project. All the smart solution, network, components will converge at the central command and control center.
- Integrated Command and Control Centre (CCC) involves leveraging on the information provided by various departments and providing a comprehensive response mechanism for the day-to-day challenges across the city. CCC shall be a fully integrated, web-enabled solution that provides seamless incident – response management, collaboration and geo-spatial display.
- The CCC shall facilitate the viewing and controlling mechanism for the selected field locations in a fully automated environment for optimized monitoring, regulation and enforcement of services. The CCC shall be accessible by operators and concerned authorized entities with necessary role based authentication credentials.
- Bidder is responsible for setting up and O&M of entire Command and Control center including all the, hardware and software, interior work for setting-up of CCC at physical space provided by SCDCL Network Cabling, Electrical Works, Video Wall, Furniture's and

Fixtures, Building Management System, CCTV Surveillance system of the CCC, Access Control System etc. as per the scope of work and technical specification of RFP.

- The Command & Control solution should be implemented and complied to the industry open standards based Commercial-of-the-shelf (COTS) products.
- Activities at the CCC will comprise of monitoring services, incident management, Response as per the defined SoP's with defined escalation procedures etc. as per the requirement laid out in the RFP.
- Bidder is responsible for integration of Command Control Centre with various existing smart city solution like ITMS, CSITMS, City Dashboard, Social Media etc. and any other projects/its components that may come up during the course of the contract.
- The successful bidder will have to provide all necessary Software, Databases, Hardware, Network Infrastructure, Active and Passive Connectivity, Power Backup including all IT infrastructure that may be required for the CCC for the entire contract duration.
- The CCC will manage and monitor entire project and services. All the Information and data collected through various components of the smart city project will be viewable through a centralized VMS/Application.
- Activities at the CCC will comprise of monitoring services, incident management with defined escalation procedures, etc.
- All hardware & software procured should be from reputed OEMs with license, support and warranty for the complete project/contract period.
- Bidder should seek confirmation from SCDCL before installation and commissioning of the solutions Technical Architecture and Equipment's at CCC.

3.9.1 Training: bidder is responsible for providing training as mentioned below:

- Training to the employees of SCDCL or SCDCL's appointed agencies on application related operations of the applicants & reports generation etc.
- Bidder will have to bear all the cost associated with the conducting such training programs.
- Training sessions should be conducted on a requisite mix of theory & practical operations. The trainings should be conducted in Hindi, English and Marathi

3.9.2 Video Wall: A state of art LED video wall facility should be installed at CCC. Followings are the functional requirement of video wall: -

- The video wall shall use multi-monitor (e.g., different monitor can display different input source) and split screen (e.g., several intersections can be displayed on one monitor) display technology to provide the flexibility to accept audio and video inputs Camera system, TV signal, recorded video, and Laptop computer.
- Should have provision for live monitoring and control of various modules of the ITS including dashboard of CSITMS and ITMS.
- The system should have Integration with existing control centres in the city & other services (with provision for future scalability in terms of systems to be integrated and extent of integration with existing systems)
  A) Surveillance
  B) Traffic
  C) Wifi hotspots as a place making tool
  D) Environment Sensors
  E) SCADA System integration
  F) Citizen Services and E Toilet Integration
  G) GIS System

3.9.3 Integrated Dashboard for the Entire Project Component: The successful bidder is required to develop a centralized dashboard for entire smart city project for the reporting and viewing of all the project components and Key performance indicators of systems such as city surveillance system, ITMS, Sensors, Smart Parking Solution, Wi-Fi Access points, etc. through a single interface with the following capabilities:

- Should be able to integrate all the existing services/utilities currently being used by the City administration and with the capability to add and integrate upcoming smart city application/ components to be brought by the SCDCL.
- Should be able to provide a distinct view of all the integrated utilities/services through a single console/interface in a clear and hassle free manner.
- Should be able to provide all possible status and details of the end utilities/components deployed throughout the city through a single interface
- The system should provide a mechanism to configure and monitor Service Levels for monitored key performance indicators which are used to configure the business process lifecycle.
- The system should be able to provide a mechanism to trigger actions towards the incident management system when the Service Levels for monitored key performance indicators are breached using different color combinations. IT should also provide an easy to navigate user interface for managing incidents, events, profiles, groups, alarms, KPI's etc.
- The system should provide the tools to assemble personalized dashboard views of information pertinent to critical incidents, emergencies and operations of command centre.
- The system should be able to monitor live deployed event applications for performance usage and planning statistics in a graphical interface, including CPU, memory, connection and Queues etc.
- The dashboard should provide filtering capabilities that enable end users to dynamically filter the data in their dashboard based upon criteria such as Alarm, event, status, KPIs etc. The dashboard shall have capabilities to drill down in to the datasets and visual representations.
- The system should be implemented using industry open standards based commercial off the shelf products
- The Command center should facilitate converged communication across all communication media as determined by SMC/SCDCL

3.9.4 Furniture's, Fixtures, Operator Console and CCC Infrastructure: As mentioned above System Integrator is responsible for setting up and O&M of CCC. System Integrator is also responsible for supply, installation and O&M of various furniture's and fixtures for smooth operations of CCC. Followings is the minimum indicative list of items; However, the bidder will have to provide any other item inadvertently missed out:

- Workstations, chairs, , Air conditioning, storage unit, adjustable monitor mounting arrangements, Power backup, network connections including patch cable. I/O boxes etc. for smooth Operations at the CCC
- The bidder will have to make a careful assessment in terms of structure design, ergonomics, positing according to the Video Wall etc. and propose other necessary items to be supplied under the CCC setup.
- Each operator shall be provided with one workstation with three monitors for surveillance along with one intercom line.

3.9.5 Collaborative Monitoring: - The Bidder has to provide a solution which will have a collaborative framework for receiving video feeds from various systems and sub-

systems of public and private establishments like malls, airport, railway stations, bus stands, temples, forts, local shopkeepers etc. The list of establishment shall be provided by SCDCL /Police Department from time to time.

- As a part of the collaborative monitoring effort, the system shall also facilitate citizens after authentication (e.g. OTP) to upload video feeds to the CCTV System. This upload of video shall be subject to administrative and technical checks so that frivolous and defamatory videos are not uploaded in the system.
- VMS shall have provision to ensure that such video feeds are continuously streamed on one of the display of the Video Wall.
- Further, adhoc requirement for installation of cameras at fairs and festivals may also be required to be undertaken by the successful bidder. The successful bidder has to extend full support during adhoc installation of cameras in fairs and festivals in the city. The bidder would be required to study the requirement of all such integration and submit detailed report for integration of collaborative cameras and cameras to be installed during fairs and festivals. The bidder is expected to enable the command and control center for live viewing and storing of the feed.

3.9.7 Centralized Helpdesk: -

- It is envisaged that the centralized helpdesk, functioning as proposed below, would be managed by the bidder and shall serve following objectives:
- Act as the Point of Contact for the users of Surveillance System
- Own an Incident throughout its Lifecycle
- Communicate effectively with Police / Home Dept. Officers and IT support teams.
- Maintain high user satisfaction levels
- Maintain the SLA statistics & submit quarterly report to Police / Home Department
- A general process flow for the helpdesk management is depicted in the flowchart given as follows bidder shall have to prepare and submit a detailed Helpdesk Policy in consultation with all the stakeholders prior to the Go Live.

3.10 IT infrastructure for City wide network

- A city-wide IT infrastructure is the core backbone of any pan city/ smart city project. Looking at the volume and size of the Solapur smart city project SCDCL envisaged to implement pan city IT infrastructure.
- System Integrator is responsible for design, supply, installation, configure, testing, commissioning, integrate (wherever required) and operation & maintenance for 5 years of all the systems (Hardware-active & passive; Software) as per the scope of work and technical specification of the RFP.
- Carry out installation of active and passive components and accessories supplied as per standards for successful integration and implementation of the systems at each site connected under this RFP.
- Configuring and fine-tuning of subsystems to achieve overall optimal network performance and highest security.
- Bidder should have proposed a comprehensive solution for city wide IT infrastructure. However, below are indicative/minimum (but not limited to) list of components bidder is required provide as a part of entire solution: -
- Network equipment
- Wireless equipment, if required
- Erection of mast/poles/Gantry
- Video surveillance systems (VMS)
- Network, video management Controller, hardware (Server)
- Storage hardware

- Computer hardware and Accessories
- All system and application software (other than Video Management software and ITMS Video Analytics Software)
- The bidder shall depute adequate skilled resources to ensure that the implementation and commissioning activities are carried out on schedule.
- The bidder shall submit a detailed test plan and test cases for each solution, that will be used to carry out the UAT (user acceptance test) and FAT (final acceptance test)
- As part of the project completion documentation, the bidder shall submit the documentation, which should at least contain: -
- As-implemented configurations
- As-implemented architecture and topology diagrams
- Standard operating procedures for administration of the installed devices.
- Bidder needs to design network architecture as per the client requirement using industry best practices.
- Bidder should ensure availability of all the patches and updates released by OEM of the product during the contract durations.
- Electrical cabling from the input source and up to the equipment to be kept at each location, rack etc. as the case may be, shall be the responsibility of bidder.

3.11 Integration with Network Connectivity

The bidder will be responsible to integrate the different network connectivity as a backbone which is to be procured through a lease agreement with existing service provider. The agreement will be between the System Integrator and the service provider is to be done

SECTION 4

INSTRUCTION TO BIDDERS

&

GENERAL TERMS AND CONDITIONS

SECTION 4

Instructions to the Bidders

4.1 General

a. While every effort has been made to provide comprehensive and accurate background information, requirements and envisaged solution(s) specifications, Bidders must form their own conclusions about the solution(s) needed to meet the Authority's requirements. Bidders and recipients of this RFP may wish to consult their own legal advisers in relation to this RFP.

b. All information supplied by Bidders as part of their bids in response to this RFP, may be treated as contractually binding on the Bidders, on successful award of the assignment by the Authority on the basis of this RFP.

c. No commitment of any kind, contractual or otherwise shall exist unless and until a formal written contract has been executed by or on behalf of Authority. Any notification of preferred bidder status by Authority shall not give rise to any enforceable rights by the Bidder. Authority may cancel this public procurement at any time prior to a formal written contract being executed by or on behalf of Authority.

d. Sealed bids shall be received by the Authority on the e-Procurement portal www.mahatenders.gov.in before the time and date specified in the schedule of the tender notice. In the event of the specified date for the submission of tender offers being declared a public holiday by the Government of Maharashtra, the offers will be received up to the appointed time on the next working day. The Authority may, at its discretion, extend this deadline for submission of offers by issuing corrigendum and uploading the same on e-Procurement portal.

e. Telex, cable or facsimile offers will be rejected.

4.2 Eligible Bidders

Bids may be submitted by either of the following categories of bidders only:

The Bidder can be either a Single System Integrator (SI) or a Consortium of companies/ corporations as described below.

a. Sole Bidder

The Sole Bidder must be a System Integrator company which has the capabilities to deliver the entire scope as mentioned in the RFP. The Sole Bidder cannot bid as a part of any other consortium bid under this RFP.

b. Consortium of Firms

Bids can be submitted by a consortium of firms. A consortium should **not consist of more than three parties** (including the Lead Bidder). One of the Firms would be designated as a "Lead Bidder". The Lead Bidder would have the sole responsibility of ensuring the delivery of products and services mentioned in all volumes of this RFP. The Lead Bidder

would also be responsible for ensuring the successful execution of integrated solution including meeting the SLAs. The list of Consortium Members needs to be declared in the bid which cannot be changed by the bidder later on. Any change in the consortium partner will need to be approved by Authority.

The Lead Bidder will be responsible for:

i. The management of all Consortium Members who are part of the bid, and

ii. The supply, delivery and installation of all products and services submitted in their bid and as part of the contract

Bids submitted by a consortium should comply with the following requirements also:

i. The Lead Bidder shall be authorized to incur liabilities and receive instructions for and on behalf of any and all consortium members. Entire execution of the Contract, including payment, shall be done exclusively by/with the Lead Bidder

ii. Any firm which is not a Lead Bidder to this RFP can be a partner in any number of bids submitted against this RFP

iii. Any of the Lead Bidders cannot be a Consortium Member with another bidder in a separate bid

iv. Internal arrangement between the Consortium Members is left to the bidders. It is the responsibility of the lead Bidder to ensure that all the other Consortium Members in the bid are compliant to all the clauses as mentioned in the bid, failing which bid can be disqualified

4.3 Compliant Bids/Completeness of Response

a. Bidders are advised to study all instructions, forms, terms, requirements and other information in the RFP documents carefully. Submission of the bid shall be deemed to have been done after careful study and examination of the RFP document with full understanding of its implications.

b. Failure to comply with the requirements of this paragraph may render the bid non-compliant and the Bid may be rejected. Bidders must:

i. Include all documentation specified in this RFP, in the bid

ii. Follow the format of this RFP while developing the bid and respond to each element in the order as set out in this RFP

iii. Comply with all requirements as set out within this RFP

4.4 Bidder to Inform

The Bidder shall be deemed to have carefully examined the Terms & Conditions, Scope, Service Levels, Specifications, and Schedules of this RFP. If bidder has any doubts/clarifications as to the meaning of any portion of the Conditions or the specifications he shall, before the last date for Submission of Pre-Bid Queries, set forth the particulars thereof and submit them to Authority in writing in order that such doubt may be removed or clarifications are provided.

4.5 Document Comprising the Bid

The Bid prepared by the Bidder shall comprise of the following documents:

(a) Bid Security/EMD and Bid Processing Fee: The bid security of EMD of Rs. 70,00,000 (Rupees Seventy Lakhs only) shall be either in form of Demand Draft and or Bank guarantee of any nationalized / scheduled bank and bid processing fee of Rs. 25,000/- (Rupees Twenty Five Thousand only)by Demand Draft in favor of "Solapur City Development Corporation Limited (SCDCL)" payable at Solapur are to be submitted physically in sealed envelope clearly mentioning that "EMD and Bid Processing Fee for at SCDCL on the address mentioned on cover page of this RFP document.

(b) Pre-qualification Bid: In support of eligibility, a bidder must submit the following documents:

1) Format 1: Pre-qualification Bid Letter
2) Format 2: General information about the Bidder
3) Format 3: Detailed checklist for Eligibility dully filled in along with the supporting documents
4) Format 4: Declaration Regarding Blacklisting
5) Format 5: Undertaking for Acceptance of Terms and Conditions of RFP
6) Format 6: Annual Sales Turnover Statement
7) Format 7: Completion of Projects of Prescribed Nature and Size

(c) Technical Bid: The Technical Bid besides the other requirements of the RFP, shall comprise:

1) Format 8: Technical Bid Letter
2) Format 9: Technical Compliance Sheet
3) Format 10: Relationship with OEM
4) Format 11: Proposed Technical Solution
5) Format 12: Project Management Plan
6) Format 13: Core Project Team

(d) Financial Bid: The Financial Bid, besides the other requirements of the RFP, shall comprise of the following:

1) Format 14: Financial Bid Letter

2) Format-15: Price Bid

4.6 Bid Preparation costs

The Bidder shall bear all costs associated with the preparation and submission of its bid, for the purposes of clarification of the bid, if so desired by the Authority.

4.7 Pre-bid meeting & Clarification

4.7.1 Bidders Queries

Any clarification regarding the RFP document and any other item related to this project can be submitted to Authority as per the submission mode and timelines mentioned in the Fact Sheet. The pre-bid queries should be submitted in **excel sheet format**, along with name and details of the organization submitting the queries.

Authority shall not be responsible for ensuring that the bidders' queries have been received by them. Any requests for clarifications post the indicated date and time shall not be entertained by Authority.

Bidders must submit their queries as per the format mentioned in Section 5 I

4.7.2 Responses to Pre-Bid Queries and Issue of Corrigendum

Authority will organize a pre-bid conference and will respond to any request for clarification or modification of the bidding documents. Authority shall formally respond to the pre-bid queries after the pre-bid conference. No further clarifications shall be entertained after the date and time of submission of queries.

Authority shall endeavor to provide timely response to all queries. However, Authority makes no representation or warranty as to the completeness or accuracy of any response made in good faith. Authority does not undertake to answer all the queries that have been posed by the bidders.

Any modifications of the RFP Documents, which may become necessary as a result of the Pre-Bid Conference, shall be made by Authority exclusively through a corrigendum. Any such corrigendum shall be deemed to be incorporated into this RFP. However, in case of any such amendment, the bid submission date may be extended at the discretion of Authority.

Any corrigendum/notification issued by Authority, subsequent to issue of RFP, shall only be available/hosted on the website URL mentioned in the fact sheet. Any such corrigendum shall be deemed to be incorporated into this RFP.

4.8 Bid Price

Commercial Bid shall be as per the format provided in Section 8. Bidders shall give the required details of all applicable taxes, duties, other levies and charges etc. in respect of direct transaction between Authority and the Bidder.

Bidders shall quote for the entire scope of contract on a "overall responsibility" basis such that the total bid price covers Bidder's all obligations mentioned in or to be reasonably inferred from the bidding documents in respect of providing the product/services.

Prices quoted by the Bidder shall remain firm during the entire contract period and not subject to variation on any account. A bid submitted with an adjustable price quotation shall be treated as non-responsive and rejected.

4.9 Deviations and Exclusions

Bids shall be submitted strictly in accordance with the requirements and terms & conditions of the RFP. The Bidder shall submit a No Deviation Certificate as per the format mentioned in Section 6.5. The bids with deviation(s) are liable for rejection.

4.10 Total Responsibility

Bidder should issue a statement undertaking total responsibility for the defect free operation of the proposed solution as per the format mentioned in Section 6.6.

4.11 Late Bids

Late submission will not be entertained and will not be permitted by the e-Procurement Portal.

The bids submitted by telex/telegram/fax/e-mail etc. shall not be considered. No correspondence will be entertained on this matter.

Authority shall not be responsible for any non-receipt/non-delivery of the documents due to technical snag whatsoever at Bidder's end. No further correspondence on the subject will be entertained.

Authority reserves the right to modify and amend any of the above-stipulated condition/criterion.

4.12 Right to Terminate the Process

Authority may terminate the RFP process at any time and without assigning any reason. Authority 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 Authority.

4.13 Non-Conforming bids

A bid may be construed as a non-conforming bids and ineligible for consideration:

a. If it does not comply with the requirements of this RFP.
b. If a bid does not follow the format requested in this RFP or does not appear to address the particular requirements of the solution.

4.14 Acceptance/Rejection of Bids

a. Authority reserves the right to reject in full or part, any or all bids without assigning any reason thereof. Authority reserves the right to assess the Bidder's capabilities and capacity. The decision of Authority shall be final and binding.

b. Bid should be free of over writing. All erasures, correction or addition must be clearly written both in words and figures and attested.

In the event of any assumptions, presumptions, key points of discussion, recommendation or any points of similar nature submitted along with the Bid, Authority reserves the right to reject the Bid and forfeit the EMD.

If there is any discrepancy in the commercial bid, it will be dealt as per the following:

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

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

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

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

4.15 Payment Terms

Payments: Payments to SI after successful completion of the project milestones shall be made as below:

Table 2: Payment Terms

SN	Scope of Work	Timelines	Payment
1	Phase 1 Deployment & Go Live	T + 6 Months	40% of contract value
2	Operation & Maintenance Phase for a period of 60 Months from date of Go Live	T1 + 60	60% of contract value in equal quarterly instalments

Note:

T – Date of signing of the contract

T1 – Date of Go Live

4.16 Three Envelope Bid System

The bidder shall submit the bid proposal in 3 parts (i.e. envelopes / boxes): a) Pre-Qualification Related Documentation, b) Technical Proposal, c) Commercial Proposal. Each of the 3 proposals would be placed in sealed envelopes / boxes and these three envelops / boxes shall be placed into an outer envelope / box and sealed. This outer envelope / box shall bear the submission address, reference number and title of the RFP along with the name and address of the bidder. The DEPARTMENT shall not be responsible for misplacement/loss of documents if the outer envelope or envelopes of any of the three proposals are not sealed. This may also attract disqualification. If the bid Proposal is not submitted in a separate sealed envelopes / boxes duly marked as indicated above, this will constitute grounds for declaring the bid Proposal non-responsive.

Table 3: Three Envelope Bid System

Pre-Qualification Related Documentation	• Envelope 1
Technical Proposal	• Technical Proposal shall be placed in sealed envelope / box clearly marked “Technical Proposal” followed by the name and reference number of the RFP. • Technical Proposal *should not* contain commercials of the Project, in either explicit or implicit form. • Conditional technical proposal are liable for rejection. • Entire Technical Proposal should be submitted in 2 Hard Copies as well as on 2 CDs
Commercial Proposal	• Commercial Proposal shall be placed in a separate sealed envelope / box clearly marked “Financial Proposal” followed by the name and reference number of the RFP. • Entire Commercial Proposal should be submitted in 1 Hard Copy as well as on 1 CD • Forms and formats mentioned in this RFP document needs to be scrupulously followed. Any deviation in it (without proper justification) may lead to disqualification of the bid. • Price quotation accompanied by vague and conditional expressions such as "subject to immediate acceptance", "subject to confirmation", etc. will be treated as being at variance and shall be liable to be summarily rejected.

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

An authorized person of the bidder should sign pre-Qualification Proposal, Technical and Financial proposals. The Pre-qualification 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 organization to the terms and conditions detailed in this proposal.

Proposals must be direct, concise, and complete. DEPARTMENT 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.

4.17 Pre-bid Queries

All enquiries from the bidders relating to this RFP must be submitted to the Chief Executive Officer, Solapur Smart City Office, New Planning Office, next to Doodh Diary, Saat Rasta, Solapur latest by --/--/2016, 1200 hours. These queries should also be emailed to solapurcitydcl@gmail.com. The queries should necessarily be submitted in the following format:

Table 4: Pre Bid Queries Format

Sr. No.	RFP Document Reference (Section No., Page No.)	Content of the RFP requiring clarification	Clarification Sought
1 2 …			

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

4.18 Common guidelines / comments regarding the compliance of IT / Non-IT Equipment / Systems to be procured

a) The specifications mentioned for various IT / Non-IT components are indicative requirements and should be treated for benchmarking purpose only. Bidders are required to undertake their own requirement analysis and may propose higher specifications that are better suited to the requirements.
b) Any manufacturer and product name mentioned in the RFP should not be treated as a recommendation of the manufacturer / product.
c) None of the IT / Non-IT equipment proposed by the bidder should be End of Life product. It is essential that the technical proposal is accompanied by the OEM certificate in the format given in this RFP.

d) Technical Proposal should be accompanied by OEM's product brochure / datasheet. Bidders should ensure complete warranty and support for all equipment from OEMs. All the back-to-back service agreements should be submitted along with the Technical Bid.
e) All equipment, parts should be Original and New.
f) The User Interface of the system should be a User Friendly Graphical User Interface (GUI).
g) Critical / Core components of the system should not have any requirements to have proprietary Platforms and should conform to open standards.
h) For the 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. The application shall be subjected to Application security audit to ensure that the application is free from any vulnerability.
i) The Successful Bidder should also propose the suitable specifications of any additional servers / other hardware, if required for the system.
j) The Servers provided should meet industry standard performance parameters (such as CPU Utilization of 60% or less, disk utilization of 75% or less).
k) SI is required to ensure that there is no choking point / bottleneck anywhere in the system (end- to-end) to affect the performance / SLAs.
l) All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). SMC reserves the right to ask replacement of any hardware / software if it is not from a reputed brand and conforms to all requirements specified in tender documents.
m) All necessary hardware, software, licenses etc. IPR will be in the name of SMC.
n) Successful bidder shall make the details of new technologies, new hardware available in the market to SMC. Both, SMC and SI, in agreement, will take decision of new technology/ hardware implementation in case any new/ advanced technology comes up during the contract period.
o) SMC can conduct audit for overall system performance/security as and when required, however the charges will be borne by SCDCL

4.19 Language of the Bid

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

The offers containing erasures or alterations will not be considered. There should be no hand-written material, corrections or alterations in the offer. Filling up of the information using terms such as "OK", "noted", "as given in brochure/manual" is not acceptable and may lead to the disqualification of the bid.

4.20 Earnest Money Deposit

Bidders should submit EMD of Rs. 70 Lakhs (Seventy Lakh rupees Only), in the Pre-Qualification Envelope, in the form of a Demand Draft/ Bank Guarantee issued by any Nationalized bank or Scheduled Banks, in favor of Solapur City Development Corporation Limited. Which should be valid for 180 days from the last date of submission of proposals.

Department within three months of the bidder being notified as being unsuccessful would refund the bid security of all unsuccessful bidders. The bid security amount is interest free and will be refundable to the unsuccessful bidders without any accrued interest on it.

The bid submitted without bid security, mentioned above, will be summarily rejected. The bid security may be forfeited:

If a bidder withdraws its bid during the period of bid validity

If the successful bidder fails to sign the contract and submit Performance Bank Guarantee within the stipulated period.

4.21 Qualifying Criteria for Technical Bid

Prior to the detailed evaluation of the Technical Bids, DEPARTMENT shall determine whether each bid is (a) complete, (b) is accompanied by the required information and documents and (c) is substantially responsive to the requirements set forth in the RFP documents.

Department will form a Technical Committee, which will evaluate both technical & commercial bids received in response to this RFP. The findings of the said Committee and subsequent decision of State Government shall be final and binding on all the bidders. Only those bidders, who fulfill all the Eligibility / Pre-qualification criteria mentioned in the bid, shall be eligible and qualified for technical scrutiny as per the Evaluation Framework given below.

Bidders should obtain minimum 70% in the overall technical evaluation, to qualify for opening of the Commercial Bid. DEPARTMENT evaluation in this regard shall be final and binding on the Bidder.

DEPARTMENT may in its sole discretion, waive any informality or non-conformity or irregularity in a Bid Document, which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Bidder.

4.22 Technical Scoring and Evaluation Criteria

4.22.1 Eligibility Criteria for Evaluation (Envelope A)

The bidder shall be evaluated based on the Eligibility Criteria mentioned below. The bidder shall submit all the documents as mentioned below as per the formats mentioned in different section of RFP. Only eligible bidders would be qualified for Technical Evaluation (Envelope B).

Table 5: Technical Eligibility Criteria

S. No.	Basic Requirement	Specific Requirements	Documents Required
1	General Requirement	Bidder should be an established System Integrator/ consortium and should have been engaged in Supply, Installation, Commissioning and Operations & Maintenance Services of Wi-FI, Lighting, CCTV, Transport network, Data Center and Command control Center / ICT projects for a period of at least 3 financial years as on Dec 2016	Work Orders / Client Certificates confirming year and area of activity should be enclosed.
2	Bidder Entity	Consortium/Joint Venture/teaming agreement is allowed, one of the parties in the consortium/JV partner will be the Prime Bidder/Lead Bidder. Prime Bidder/Lead Bidder shall be treated as “Bidder” . Any of the parties of the consortium /JV partner or the Prime Bidder/Lead Bidder may meet the technical criteria. However, the Prime Bidder/Lead Bidder alone should meet the financial criteria. Lead bidder can have upto 2 consortium members. The consortium members should be a profit making company in the last 3 financial years.	Copy of the consortium/JV /teaming agreement in case of consortium/JV, clearly specifying the role and area of specialization of the individual parties of consortium/JV, duly signed by Consortium/JV parties on Rs. 100 non-judicial stamp paper should be enclosed. Members to submit the audtited financial statements for the last 3 financial years.

S. No.	Basic Requirement	Specific Requirements	Documents Required
3	Legal Entity	Any legal entity duly registered in India is allowed. In case of consortium/JV, the Prime Bidder/ Lead Bidder should meet this criterion.	a) Certificates of incorporation and/ or b) Registration Certificates
4	Turnover	Incase of sole bidding: The Prime Bidder/Lead Bidder must have Avg annual turnover of at least Rs. 100 Crores solely from ICT Business and IT Services during each of the last Three financial years as on 31.03.2016. In case of consortium: The prime/lead bidder must have an Avg annual turnover of at least 50crores solely from ICT Business and IT Services and each consortium member must have Avg annual turnover of 25 Crores or more during each of the last Three financial years as on 31.03.2016.	Audited and Certified Balance Sheet and Profit/Loss Account for the last three Financial Years should be enclosed. CA Certificate be enclosed.
5	Technical Capability	The Bidder or any of the parties of the consortium/ Technology Partner must have successfully completed, during last Five financial years as on 31.03.2016, at least the following numbers of Wi-Fi systems & CCTV Surveillance System of value specified herein: Two projects of similar nature for not less than 200 Access Points (AP) in a single work order OR Three projects of similar nature for not less than 100 Access Points (AP) in a single work order	Copies of work order or contract agreement or the client certificates/Project Sign-off Certificate from client for satisfactory completion of project and showing order value and cost or OEM undertaking.

S. No.	Basic Requirement	Specific Requirements	Documents Required
		AND One Project of similar nature for not less than 200 IP Cameras in a single work order	
6	Net Worth	The Bidder or the Prime Bidder/Lead Bidder must have positive net worth & profit making in each of the last three financial years as on 31.03.2016	CA Certificate mentioning net profit should be enclosed.
7		The bidder shall have bank Solvency certificate not less Rs. -100 Crores (issued date shall not be more than 06 months from the date of release of RFP) .	Certificate from Bank
8	Certification	The Bidder or consortium/JV should possess below Certifications at the time of bidding: a) ISO 9001:2008 Certification for System Integration. b) ISO 20000:2011 for IT Service Management (Facility Management Services) c) ISO 27001:2005 for Information Security Management System	The Bidder is required to furnish the copy of valid certification.
9	Tax Registration	The Bidder or the Prime Bidder/Lead Bidder should have a registered number of a. VAT/Sales Tax where his business is located b. Service Tax c. Income Tax PAN	Copies of relevant(s) Certificates of Registration.
10	Technical Specifications of BOQ items	The quoted product/item should fulfil all the technical specifications laid out in the tender document mentioned in the Annexure (Technical specifications of BOQ items). The Bidder is required	The Bidder should enclose relevant catalogues, brochures, etc. in support of

S. No.	Basic Requirement	Specific Requirements	Documents Required
		to furnish Make, Model / Part number of the quoted item.	all the items quoted in the Bid.
11		As on date of submission of the proposal, the bidder and any of the consortium members should not be blacklisted/ debarred/ terminated by Central/ State Government Department/ PSU/ Corporation/ Board and Private Sector entity in India for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices.	Undertaking by the authorized signatory as well as all member of consortium as per the form mentioned in Annexures.

1. Any bid failing to meet the above eligibility criteria shall be disqualified and will not be considered for Technical Evaluation.
2. Change in Eligibility Criteria: If there is a change in the status of the bidder with reference to any of the eligibility criterion specified above, during the bid process till the award of the project, the bidder should immediately bring the same to the notice.
3. For the purpose of the criterion, turnover of only the bidding entity will be considered. Turnover of any parent, subsidiary, associated or other related entity will not be considered. Moreover, the Bidder should provide the experience details of Projects undertaken by it only. Project experience of the Individual Bidder's parent company or its subsidiary or Consortium Members parent company or its subsidiary (who are not Members of the Consortium) will not be considered. Implementation or operation and maintenance experience of parent/subsidiary/associate Company of the Bidder would not be considered for evaluation.

4.22.2 Technical Evaluation

Bidders who qualify in Envelope A would be considered as qualified to move to the next stage of Technical evaluations. The Technical Evaluation of Bidders' proposals (Envelope B) shall be based on:

1. Technical Proposal Evaluation
2. Technical Presentation

4.22.3 Technical Scoring and Evaluation

1. This is a Quality & Cost Based Selection (QCBS)
2. Technical Score (RTs) weightage 70%, while Financial Score (RFs), will be given 30% weightage.
3. For the purpose of arriving at Technical Score (Ts), the bid shall be evaluated against the Technical Parameters, with respective weightages, as given in RFP.

4. The Total Technical Score (Ts) will be calculated out of 100 Marks, and shall be evaluated as below:

The Bidder has to score Minimum Qualifying Marks as below:

Minimum qualifying marks in Individual TE criteria will be 60%.

5. The Bidders scoring marks less than the minimum qualifying marks as mentioned above shall be disqualified for Financial Bid Opening (Envelope C).

4.22.4 Technical Evaluation Matrix

The table below describes the Technical Evaluation criteria along with the weightages for each parameter. Technical Evaluation criteria is defined below:

Table 6: Technical Evaluation Marks

S.N.	Capability	Criteria for Technical Evaluation	Max marks
1	Financial Capability	Annual Turnover of the bidder generated solely from Networking (setting up or O&M) and Data Centre (setting up or O&M) during each of the last three financial years,(FY 2013-14, 2014-2015,2015-2016) Avg Turnover => 100 crores: 04 marks Avg Turnover 100Cr to 250 Cr: 08 marks Avg Turnover 250 Cr and above: 10 marks.	Max marks 10
2	Expertise and Experience	The bidder should have demonstrable expertise and experience in executing project with minimum value of Rs. 50 crores of Network Integration / Systems Integration/Data Centre (setting up or O&M) anytime during last five years as on 31st March 2017 >2 projects of 50 crores or 1 project of 100 crores =10 marks >3 projects of 50 crores or 1 project of 150 crores =15 marks More than 3 projects of 50 crores or 1 project of more than 200 crores =20 marks	20
3.	Experience of City wide surveillance solutions	The bidder should have demonstrable expertise and experience in executing city wide surveillance project with minimum 100 cameras deployed at multiple >100 to 150 Cameras = 5 Marks >150 to 200 Cameras = 7 Marks More than 200 cameras = 10 marks	10

S.N.	Capability	Criteria for Technical Evaluation	Max marks
4	Experience of CCTV installation at Junctions/ Locations	The bidder should have demonstrable expertise and experience in executing city wide surveillance project with Minimum 50 location/junctions spread across the city >50 to 75 Junctions/locations =5marks >75 to 100 Junctions /locations = 7 marks More than 100 junctions/locations = 10 marks	10
5	Experience: Smart City wide network with Command and Control Centre	The bidder should have demonstrable expertise and experience of setting up or O&M of Min. 1 project with minimum 20 seating capacity of integrated control room/city wide control room/emergency response center during last three years ending 31st Mar 2017 >20 to 30 seating capacity= 5 marks >30 to 40 Seating Capacity= 7 marks More than 40 seating capacity= 10 marks	10
6	Application Development and Systems Implementation	The firm/company should have IT professional in Application Development and Systems Implementation a) Minimum 50 IT Professionals = 5 marks >50 IT Professionals = 10 marks b) Detailed Approach and Methodology = 10 marks	20
7	Approach, Methodology, Project Management, Execution Methodology, SLA management	The Technology Architecture blue print with various components asked, Correlation and analytics of data, integration Architecture, Technical and functional specifications compliance, Make and model,	10

S.N.	Capability	Criteria for Technical Evaluation	Max marks
		Response to SLAs and plans to manage uptime. **Bidder has to offer best quality of products. Lower the quality, Lesser the marks.	
8	Presentation, Client Visit	Bidder understanding of project requirements (functional and technical) and completeness of proposed solution - All devices, equipment, software, hardware should integrate seamlessly with each other Clarifications/Answers given during Presentation	10
		Total Marks	100

Note: Minimum absolute technical score to qualify for commercial evaluation is 70 marks out of total 100 marks. However, bidder needs to mandatorily score minimum 10 points in the "Proof of concept "clause.

4.22.5 Financial Evaluation

- The Financial Bids of Technically qualified bidders only would be opened and evaluated on QCBS basis. All other Commercial bids will be returned un-opened.

4.23 Award of Contract

- Award Criteria: The Criteria for selection will be on QCBS basis amongst the technically qualified bids. SCDCL may negotiate the prices with successful Bidder, under each item/head offered by Bidder.
- SCDCL's right to vary requirements at time of award: SCDCL reserves the right at the time of award to increase or decrease quantity for the requirements originally specified in the document without any change in Bid rate or other terms and conditions.
- In case, if lowest bidder does not accept the award of contract or found to be involved in corrupt and/or fraudulent practices, the next lowest bidder will be awarded the contract. In such scenario, the lowest bidder has to borne the difference between lowest prices and next lowest prices.

4.24 Notification of Award and Signing of Contract

- Prior to expiration of the period of Bid validity, SCDCL will notify the successful Bidders and issue LoI.
- The contract Performance Bank Guarantee (PBG) has to be submitted within fifteen (15) working days of receipt of LoI. The PBG shall be equal to the 10% of total contract value and shall be valid for duration of 180 days beyond the expiry of contract. Within fifteen (15) working days of receipt of the Contract Form, the successful Bidder shall sign and stamp the Contract and return it to the SCDCL.

4.25 Force Majeure

- Force Majeure shall mean any event or circumstances or combination of events or circumstances that materially and adversely affects, prevents or delays any Party in

performance of its obligation in accordance with the terms of the Agreement, but only if and to the extent that such events and circumstances are not within the affected party's reasonable control, directly or indirectly, and effects of which could have prevented through Good Industry Practice or, in the case if construction activities through reasonable skill and care, including through the expenditure of reasonable sums of money.

- Any events or circumstances meeting the description of the Force Majeure which have same effect upon the performance of any contractor shall constitute Force Majeure with respect to the Service Provider. The Parties shall ensure compliance of the terms of the Agreement unless affected by the Force Majeure Events. The Service Provider shall not be liable for forfeiture of its implementation / Performance guarantee, levy of Penalties, or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Agreement is the result of Force Majeure.

- **Force Majeure Events**:

- The Force Majeure circumstances and events shall include the following events to the extent that such events or their consequences (it being understood that if a causing event is within the reasonable control of the affected party, the direct consequences shall also be deemed to be within such party's reasonable control) satisfy the definition as stated above. Without limitation to the generality of the foregoing, Force Majeure Event shall include following events and circumstances and their effects to the extent that they, or their effects, satisfy the above requirements:
- Natural events ("Natural Events") to the extent they satisfy the foregoing requirements including:

1. Any material effect on the natural elements, including lightning, fire, earthquake, cyclone, flood, storm, tornado, or typhoon
2. Explosion or chemical contamination (other than resulting from an act of war);
3. Epidemic such as plague;
4. Any event or circumstance of a nature analogous to any of the foregoing.
5. Other Events ("Political Events") to the extent that they satisfy the foregoing requirements including:

Political Events which occur inside or Outside the State of Maharashtra or involve directly the State Government and the Central Government ("Direct Political Event"), including:

1. Act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, civil commotion, act of terrorism or sabotage;
2. Strikes, work to rules, go-slows which are either widespread, nation- wide, or state-wide or are of political nature;
3. Any event or circumstance of a nature analogous to any of the foregoing.
   - Force Majeure Exclusions*:* Force Majeure shall not include the following event(s) and/or circumstances, except to the extent that they are consequences of an event of

   - Force Majeure:
     a. Unavailability, late delivery
     b. Delay in the performance of any contractor, sub-contractors or their agents;

   - **PROCEDURE FOR CALLING FORCE MAJEURE**: The Affected Party shall notify to the other Party in writing of the occurrence of the Force Majeure as soon as reasonably practicable, and in any event within 5 (five) days after the Affected Party came to know or ought reasonably to have known, of its occurrence and that the Force Majeure would

be likely to have a material impact on the performance of its obligations under the Agreement.

4.26 Contract Obligations

- Once a contract is confirmed and signed, the terms and conditions contained therein shall take precedence over the Bidder's bid and all previous correspondence.
- Amendments to the Contract may be made by mutual agreement by both the Parties. No variation in or modification in the terms of the contract shall be made except by written amendment signed by both the parties. All alterations and changes in the contract will take into account prevailing rules, regulations and laws applicable in the State of Maharashtra.

4.27 Use of Contract/Agreement Documents and Information

- The successful bidder shall not without prior written consent from SCDCL disclose the Agreement or any provision thereof or any specification, plans, drawings, pattern, samples or information furnished by or on behalf of SCDCL in connection therewith to any person other than the person employed by the successful bidder in the performance of the Agreement. Disclosure to any such employee shall be made in confidence and shall extend only as far as may be necessary for such performance.
- The Successful bidder shall not without prior written consent of SCDCL make use of any document or information made available for the project except for purposes of performing the Agreement.
- All project related documents issued by SCDCL other than the contact/Agreement itself shall remain the property of SCDCL and Originals and all copies shall be returned to SCDCL on completion of the successful bidder's performance under the Agreement, if so required by the SCDCL.

4.28 Representations and Warranties

Representations and Warranties by the Successful bidder:

- It is a company duly organized and validly existing under the laws of India and has all requisite legal power and authority and corporate authorizations to execute the Agreement and carry out the terms, conditions and provisions hereof. It has in full force and effect all requisite clearances, approvals and permits necessary to enter into the Agreement and perform its obligations hereof.
- The Agreement and the transactions and obligations hereof do not contravene its constitutional documents or any law, regulation or government directive and will not contravene any provisions of, or constitute a default under, any other Agreement or instrument to which it is a party or by which it or its property may be bound or any of its obligations or undertakings by which it or any of its assets are bound or cause a limitation on its powers or cause it to exceed its authorized powers.
- There is no pending or threatened actions, suits or proceedings affecting the Successful bidder or its affiliates or any of their respective assets before a court, governmental agency, commission or arbitrator or administrative tribunal which affects the Successful bidder's ability to perform its obligations under the Agreement; and neither successful bidder nor any of its affiliates have immunity from the jurisdiction of a court or from legal process (whether through service of notice, attachment prior to judgment, attachment in aid of execution or otherwise).
- The Successful bidder confirms that all representations and warranties of the Operator set forth in the Agreement are true, complete and correct in all respects.
- No information given by the Successful bidder in relation to the Agreement, project documents or any document comprising security contains any material wrong-statement of fact or omits

to state as fact which would be materially averse to the enforcement of the rights and remedies of SCDCL or which would be necessary to make any statement, representation or warranty contained herein or therein true and correct.

- All equipment including replacement parts, spares and any other material to be installed, used by the successful bidder in the Smart City Solapur Network shall be new. All equipment shall conform to the codes, standards and regulations applicable to networking facilities and benefit from the usual manufacturer's guarantees.

- **Representations and Warranties by SCDCL**
  - It has full legal right; power and authority to execute the Solapur smart city project and to enter into and perform its obligations under the Agreement and there are no proceedings pending.

    The Agreement has been duly authorized, executed and delivered by SCDCL and constitutes valid, legal and binding obligation of SCDCL.
  - The execution and delivery of the Agreement with the Successful bidder does not violate any statutory judgment, order, decree, regulation, right, obligation or rule of any court, government authority or arbitrator of competent jurisdiction applicable in relation to SCDCL, its assets or its administration.

4.29 Resolution of Disputes

- If any dispute arises between the Parties hereto during the subsistence or thereafter, in connection with the validity, interpretation, implementation or alleged material breach of any provision of the Agreement or regarding a question, including the questions as to whether the termination of the Contract Agreement by one Party hereto has been legitimate, both Parties hereto shall endeavor to settle such dispute amicably.
- The attempt to bring about an amicable settlement is considered to have failed as soon as one of the Parties hereto, after reasonable attempts [which attempt shall continue for not less than 30 (thirty) days], give 15 days' notice thereof to the other Party in writing.
- In the case of such failure the dispute shall be referred to a sole arbitrator or in case of disagreement as to the appointment of the sole arbitrator to three arbitrators, two of whom will be appointed by each Party and the third appointed by the two arbitrators. The place of the arbitration shall be Solapur, Maharashtra.
- The Arbitration proceeding shall be governed by the Arbitration and Conciliation Act of 1996 as amended. The proceedings of arbitration shall be in English language. The arbitrator's award shall be substantiated in writing. The arbitration tribunal shall also decide on the costs of the arbitration procedure.
- The Parties hereto shall submit to the arbitrator's award and the award shall be enforceable in any competent court of law.

4.30 Taxes & Duties

- Successful bidder shall fully familiarize itself about the applicable Domestic taxes (such as VAT, Sales Tax, Service Tax, Income Tax, duties, fees, levies, etc.) on amount payable by SCDCL under the contract. The successful bidder shall pay such domestic tax, duties, fees and other impositions (wherever applicable) levied under the applicable law. The billing should be done in Maharashtra only.

4.31 Books & Records

- Successful bidder shall maintain adequate Documents Related to project's physical materials & equipment for inspection and audit by SCDCL during the terms of Contract until expiry of the performance guarantee.

4.32 Performance Bank Guarantee of the Contract

- The Performance Bank Guarantee (PBG) has to be submitted within 15 (fifteen) working days of receipt of award.
- The PBG shall comprise two parts; 5% of the value of Schedule-I of Price / financial bid (Hardware/Material component) valid for one year which would be discharged and returned after completion of FAT and second part as 5% of the value of Schedule – II of Price/Financial Bid (O&M component) valid up to 180 days beyond the expiry of contract.
- The performance guarantee will be in the form of bank guarantee towards faithful performance of the contract obligation, and performance of the services during contract period. In case of poor and unsatisfactory field services, SCDCL shall invoke the PBG.
- The Performance Guarantee shall be valid for a period of 180 days beyond Contract period and shall be denominated in Indian Rupees and shall be in the form of an unconditional Bank Guarantee issued by all Public-sector banks and private banks such as IDBI Bank, UTI Bank, HDFC Bank, ICICI Bank having branch in Solapur in the format provided, to be submitted Within 15 working days of receipt of award.
- The Performance Guarantee shall be discharged by SCDCL and returned to the Successful bidder within 30 days from the date of expiry of the Performance Bank Guarantee.

- ***PART-II: General Terms and Conditions:***

4.33 Payments Terms

- *Payment Schedule*

SN	Scope of Work	Timelines	Payment
1	Phase 1 Deployment & Go Live	T + 6 Months	40% of contract value
2	Operation & Maintenance Phase for a period of 60 Months from date of Go Live	T1 + 60	60% of contract value in equal quarterly instalments

- ***Payment Procedure***

a) Hardware/Material Component
   1. The successful bidder shall raise the component wise invoice (based on request order) against the milestones achieved (as mentioned above in the payment schedule) and submit the invoice to SCDCL.
   2. The successful bidder shall submit 2 original copies of invoices (based on request order) along with the necessary supporting documents confirming milestone achieved and other documents as required by SCDCL for processing of invoices. Invoice should be raised in English language only.
   3. SCDCL shall verify the Invoices raised against the milestone achieved and shall make the payment.

b) O&M Component
   1. The payments to the successful bidder will be made quarterly at the end of each quarter on acceptance of the invoice by the SCDCL or its designated agency.

2. The invoice would be processed for release of payment within 45 days after due verification of the invoice and other supporting documents by SCDCL or its designated agency.
3. In case the processing of the invoice gets delayed beyond 45 days from the date of acceptance of invoice, the successful bidder would be paid an adhoc amount of 50% of invoice value and the remaining amount would be released after getting clarifications, due verification and imposition of penalty, if any.
4. Payment shall be made in Indian Rupees. While making payment, necessary income tax and service tax deductions will be made.

4.34 Service Terms

- The entire scope of the work depends on the technical skill and experience in management of the same level or kind of infrastructure. It is mandatory for Bidder to deploy qualified professional to install, commission & maintain the Circuits, as defined under scope of work. The Bidder has to submit regular schedule of technical man power availability & get it approved by SCDCL, before deployment.
- The Bidder need to manage & maintain various records related to the services extended to the Government.
- If required, the Bidder may need to coordinate and approach various agencies working for SCDCL.
- The Bidder needs to maintain the required security of the network as per the DIT/TRAI Security guidelines.
- The Bidder is responsible to maintain documentation on the progress of the work and will have to update the same on regular basis. Service Provider will have to submit the progress reports regularly, as per the guide line issued by SCDCL.
- The Bidder need to make its own arrangement for establishing outside/field communication. SCDCL will not provide any external / outgoing facility to another network.

4.35 Successful Bidder's Obligations

- The Successful bidder would be required to Supply, Install, Commission, maintain and manage the assets created under this project under the Solapur Smart City Mission on behalf of SCDCL. It will be the successful bidder's responsibility to ensure compliance to the requirements in accordance with and in strict adherence to the terms of the RFP and the Contract.
- In addition to the aforementioned, the successful bidder shall:
  a) Perform the Services specified by SCDCL and make available the necessary equipment / facilities /services as may be necessary to comply with the 'Scope of work' requirements as specified in the bid and changes thereof.
  b) The Successful bidder shall ensure that its team is competent, professional and possesses the requisite qualifications and experience appropriate to the task they are required to perform under this Contract. The Successful bidder shall ensure that the Services are performed in accordance with the terms hereof and to the direction given by SCDCL and as per the requirements stated in the contract and bid document. Nothing in this Contract relieves the Successful bidder from its liabilities or obligations under this Contract to provide the Services in accordance with SCDCL directions and requirements as stated in the Contract and the Bid to the extent accepted by SCDCL and the Successful bidder shall be liable for any non-performance, non- compliance, breach or other loss and damage resulting either directly or indirectly by or on account of its team.
  - The Successful bidder's representatives shall have all the powers requisite for the performance of services under this contract. The Successful bidder's representatives shall liaise with SCDCL's representatives for the proper coordination and timely completion of

the works and on any other matters pertaining to the works. The Successful bidder will extend full co-operation to SCDCL's representatives in the manner required by them for supervision / inspection / observation of the facilities, equipment / material, procedures, performance, reports and records pertaining to the works. Successful bidder shall also have complete charge of the Successful bidder's personnel engaged in the performance of the works and to ensure internal discipline, compliance of rules, regulations and safety practices. Successful bidder shall also co-ordinate and co-operate with the other Service Providers / Vendors of SCDCL working at the site/offsite for activities related to planning, execution of scope of work and providing services under this contract.

- Reporting Progress:
    a) The Successful bidder shall monitor progress of all the activities specified in the contract and submit monthly progress report about various aspects of the work to SCDCL as per Scope of Work. SCDCL on mutual agreement between both parties may change the periodicity of such reports. Extracts of the progress report to be termed, as "Executive Summary" shall be submitted in 3 copies, along with 3 copies of monthly progress report. The same is required to be submitted in soft copy as well. Formats for such reporting shall be discussed at the Kick-off meeting.
    b) The facilities / services and / or Labour to be provided by the Successful bidder under the Contract and the manner and speed of execution and maintenance of the work are to be conducted in a manner to the directions given by SCDCL and as per the requirements stated in the contract and bid document in accordance with the Contract. Should the rate of progress of the work compliance to the requirements of the SCDCL or their facilities or any part of them at any time fall behind the stipulated time for completion or is found to be too slow to ensure completion of the works or insufficient for satisfactory operations of the project, SCDCL shall so notify the Successful bidder in writing.
    c) The Successful bidder shall reply to the written notice giving details of the measures they propose to take to expedite the progress so as to complete the works by the prescribed time. The Successful bidder shall not be entitled to any additional payment for taking such steps. If at any time it should appear to SCDCL that the actual progress of work does not conform to the approved plan the Successful bidder shall produce at the request of SCDCL a revised plan showing the modification to the approved plan necessary to ensure completion of the works within the time for completion or steps initiated to ensure compliance/improvement to the stipulated requirements.

- Knowledge of Site Conditions:
    a) The Successful bidder's undertaking of this Contract shall be deemed to mean that the Successful bidder possesses the knowledge of entire project and O&M related requirements as stipulated in the RFP.
    b) The Successful bidder shall be deemed to have understood the requirements and have satisfied itself with the data contained in the RFP Document, the quantities and nature of the works and materials necessary for the completion of the works, etc. and in-general to have obtained itself all necessary information of all risks, contingencies and circumstances affecting its obligations and responsibilities therewith under the Contract and its ability to perform it.
    c) Successful bidder shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price for the works. The consideration provided in the Contract for the Successful bidder undertaking the works shall cover all the Successful bidder's obligation and all matters and things necessary for proper execution and maintenance of the works in accordance with the Contract and for complying with any

instructions which SCDCL may issue in accordance with the connection therewith and of any proper and reasonable measures which Successful bidder takes in the absence of specific instructions from SCDCL.

4.36 Application of the Terms and Conditions

These general conditions shall apply to the extent that they are not superseded by provisions in other parts of the contract. For interpretation of any clause in the RFP or Contract Agreement, the interpretation of the SCDCL shall be final and binding on the bidders.

4.37 Standards

The successful bidder shall give the services and carry out their obligations under the Contract with due diligence, efficiency and economy in accordance with generally accepted professional standards and practices. The successful bidder shall always act in respect of any matter relating to this contract as faithful advisor to SCDCL. The successful bidder shall abide by all the provisions/Acts/Rules etc. of Information Technology prevalent in the country as on the date of the requirements and design submissions. The equipment's and services supplied under this contract shall conform to the standards mentioned in the requirement specifications.

4.38 Patent Rights

The successful bidder shall indemnify SCDCL /AMC against all third-party claims of infringement of patent, trademark or industrial design rights arising from the use of the equipment's and services or any part thereof.

4.39 Incidental Services:

The successful bidder may be required to provide any or all of the following services related to the scope of this RFP:

- Furnish detailed manuals for each appropriate unit of the supplied equipment and services.
- Perform or supervise or maintain and/ or repair the supplied equipment and services, for a period of time agreed by SCDCL and the successful bidder, provided this service shall not relieve the successful bidder of any warranty obligations under this contract.

4.40 Delivery and Documentation

- The successful bidder shall submit all the deliverables on due date as per the delivery schedule agreed between parties.
- No party shall, without the other party's prior written consent, disclose contract, drawings, specifications, plan or other documents to any person other than an entity employed by the affected party for the performance of the contract.
- In case of the termination of the contact, all the documents prepared by the successful bidder under this contract shall become the exclusive property of SCDCL. The successful bidder may retain a copy of such documents, but shall not use anywhere, without taking permission, in writing, from SCDCL.
- SCDCL reserves right to grant or deny such permission. Delivery of the equipment's and services and associated documents shall be made by the successful bidder in accordance with the terms specified by SCDCL in RFP.

4.41 Change Orders

- *Hardware/Material Component:* SCDCL may at any time, by a written order given to the successful bidder make changes within the general scope of the contract in any one or more of the following:
  a) Configuration or specifications of the equipment.

b) Change in address for delivery of equipment.

- *During the O&M period:* SCDCL may at any time, by a written order given to the successful bidder make changes within the general scope of the contract in any one or more of the following during the contract period:
  a) Change in address of Junctions/Locations for providing O&M services.
  b) The services to be provided by the successful bidder.
  c) Change in QoS parameters at any office location or across all locations.

Note: However, if the changes sought are major changes which have significant financial implications to give effort to, then appropriate compensation shall be decided as per mutually agreed terms.

4.42 Assignment

The successful bidder shall not assign, in whole or in part, his obligations to perform under the contract, to any other party or persons, except with SCDCL's prior written consent. The permission, if any, of SCDCL has to be taken before award of the contract.

4.43 Sub Contract

The successful bidder would provide the services on its own and no back-to-back sub-contracting shall be allowed. However, if sub-contracting for specialized work is required, the successful bidder will take prior permission from SCDCL.

4.44 Project Takeover

SCDCL or any agency authorized by SCDCL has the right to take over the operations and management even before the expiry of 5 years in case the successful bidder fails to perform any obligations under the contract.

4.45 Inappropriate UDE of Network

The successful bidder shall not use the network facilities/ equipment installed for any other purpose/ use than that of the functions assigned by the SCDCL.

4.46 Termination for Default

- SCDCL may, without prejudice to any other remedy for breach of contract can terminate the contract, in whole or in part after giving 30 day's prior written notice of default sent to the successful bidder:
  - If the successful bidder fails to deliver any or all of the equipment's and services within the time periods specified in the contract, or any extension thereof granted by SCDCL OR
  - If the successful bidder fails to perform any obligations under the contract.

4.47 Termination for Insolvency

- SCDCL may at any time terminate the contract by giving written notice to the successful bidder, without compensation to the successful bidder, if the successful bidder becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to SCDCL.
- In the event of termination as per clause above (xxviii & xxix), SCDCL reserves the right to take suitable action against successful bidder against their default including revoking the PBG and risk purchase clause etc.

4.48 Governing Language

The contract shall be written in English. All correspondence and other documents pertaining to the contract, which are exchanged by the parties, shall be written in the same language.

4.49 Applicable Law

Applicable Law means the laws and any other instruments having the force of law in India as they may be issued and in force from time to time. The contracts shall be interpreted in accordance with the laws of the Union of India and that of the State of Maharashtra.

4.50 Notices

Any notice by one party to the other pursuant to the contract shall be sent in writing by registered post only to the addresses as defined under this contract. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

4.51 Back Up Support

Successful bidder shall furnish details of the back-up engineering and network support that will be available to SCDCL. If the maintenance of the equipment, after expiry of the contract period, is taken over either by SCDCL or any other person/ agency to be nominated by SCDCL, the Successful bidder shall be responsible for provisioning of spare parts and back-up maintenance support required by SCDCL or that agency, and shall continue to make available the spare parts.

4.52 Insurance

The equipment's supplied under this contract shall be fully insured by the successful bidder against loss or damage incidental to manufacture or acquisition, transportation, storage, delivery and installation. The successful bidder will have to procure insurance for all the assets supplied/installed under this RFP/contract on behalf of SCDCL within six months form the date of kick-off meeting. SCDCL shall provide authorization to the successful bidder to procure insurance.

4.53 Manuals, Data and Information

Complete information relating to installation, maintenance, service, support, and troubleshooting of equipment and services should be supplied by the successful bidder.

4.54 Inspection and Testing

The bidder will have to offer the inspection after delivering and installing the equipment at the locations specified in the RFP.

Any deviation found in the specification of the delivered equipment after inspection from the tender specifications will lead to the cancellation of the order, forfeiture of PBG and prohibition in the participation in the future purchases of SCDCL.

The SCDCL's right to inspect, test and, where necessary, reject the Goods after the Goods arrival at Customer Sites shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.

4.55 Limitation of Liability

Successful bidder's cumulative liability for its obligations under the contract shall not exceed the contract value and the successful bidder shall not be liable for incidental, consequential, or indirect damages including loss of profit or saving.

If the contract is partially completed, then in such case successful bidder's cumulative liability will not exceed the contract value of remaining/pending work of the contract.

4.56 Confidentiality

Successful bidder should understand and agrees that all materials and information marked and identified by SCDCL as 'Confidential' are valuable assets of SCDCL and are to be considered SCDCL's proprietary information and property. Successful bidder will treat all confidential materials and information provided by SCDCL with the highest degree of care necessary to ensure that unauthorized disclosure does not occur. Successful bidder will not use or disclose any materials or information provided by SCDCL without SCDCL's prior written approval.
Successful bidder shall not be liable for disclosure or use of any materials or information provided by SCDCL or developed by successful bidder which is:

a) Possessed by successful bidder prior to receipt from SCDCL, other than through prior disclosure by SCDCL, as documented by successful bidder's written records;
b) Published or available to the general public otherwise than through a breach of Confidentiality; or
c) Obtained by successful bidder from a third party with a valid right to make such disclosure, provided that said third party is not under a confidentiality obligation to SCDCL or
d) Developed independently by the successful bidder. In the event that successful bidder is required by judicial or administrative process to disclose any information or materials required to be held confidential hereunder, successful bidder shall promptly notify SCDCL and allow SCDCL a reasonable time to oppose such process before making disclosure.
e) Successful bidder understands and agrees that any use or dissemination of information in violation of this Confidentiality Clause will cause SCDCL irreparable harm, may leave SCDCL with no adequate remedy at law and SCDCL is entitled to seek to injunctive relief.
f) SCDCL does not wish to receive the Confidential Information of successful bidder, and successful bidder agrees that it will first provide or disclose information which is not confidential. Only to the extent that SCDCL requests Confidential Information from successful bidder, then successful bidder will furnish or disclose Confidential Information.
g) Nothing herein shall be construed as granting to either party any right or license under any copyrights, inventions, or patents now or hereafter owned or controlled by the other party. The requirements of use and confidentiality set forth herein shall survive the expiration, termination or cancellation of this RFP.
h) Confidential Information disclosed under this contract shall be subject to confidentiality obligations for a period of two years following the initial date of disclosure. Nothing contained in this contract shall limit the successful bidder from providing similar services to any third parties or reusing the skills, know-how, and experience gained by the employees in providing the services contemplated under this contract.

4.57 Severability

If any term, clause or provision of the agreement shall be judged to be invalid for any reason whatsoever such invalidity shall not affect the validity or operation of any other term, clause or provision of the agreement and such invalid term clause or provision shall be deemed to have been deleted from the agreement and if the invalid portion is such that the remainder cannot be sustained without it, both parties shall enter into discussions to find a suitable replacement to the clause that shall be legally valid.

4.58 Contract Period

The O&M contract shall remain valid for a period of five years from the date of commissioning of O&M operations and end with the date of completion of five years of service. However, SCDCL reserves a right to terminate the contract in accordance with the termination provision contained

in the contract by sending a notice to the bidder in the events of non-performance, security violations and non-compliance.

4.59 Successful Bidder's Team

- The successful bidder shall submit an organization chart showing the proposed organization / manpower not less than the proposal made in the proposed technical solution of the RFP, to be established by the successful bidder for execution of the work / facilities including the identities and Curriculum-Vitae of the key personnel to be deployed during Kick-off meeting. The successful bidder shall promptly inform SCDCL in writing of any revision or alteration in such organization chart.
- The successful bidder shall be responsible for the deployment, transportation, accommodation and other requirements of all its employees required for the execution of the work and for all costs / charges in connection thereof.
- The successful bidder shall provide and deploy manpower on the Site for carrying out the work, only those manpower resources who are skilled and experienced in their respective trades and who are competent to execute or manage / supervise the work in a proper and timely manner as per the RFP.
- SCDCL may at any time object to and ask successful bidder to remove/replace an employee (supervisor/authorized representative/any subordinate) from the site or any persons deployed by its subcontracted agency, if in the opinion of SCDCL, the person for professional incompetence or negligence, has misconducted himself or his deployment is otherwise considered undesirable by SCDCL, the successful bidder shall forthwith remove and shall not again deploy that person in question at the work site of SCDCL.
- SCDCL shall state to the successful bidder in writing its reasons for any request or requirement pursuant to this clause.
- The successful bidder shall maintain backup personnel and shall promptly provide replacement of every person removed pursuant to this section with an equally competent substitute from the pool of backup personnel.
- In case of change in its team composition owing to attrition the successful bidder shall ensure a reasonable amount of time-overlap in activities to ensure proper knowledge transfer and handover/takeover of documents and other relevant materials between the outgoing and the new member.

4.60 Contract Administration

- Either party may appoint any individual / organization as their authorized representative through a written notice to the other party. Each representative shall have the authority to:
  a) Exercise all of the powers and functions of his / her Party under this Contract other than the power to amend this Contract and ensure the proper administration and performance of the terms hereof and
  b) Bind his or her Party in relation to any matter arising out of or in connection with this Contract.
  c) The successful bidder along with the members of sub-contracted agency / third party shall be bound by all undertakings and representations made by the authorized representative of the successful bidder and any covenants stipulated hereunder with respect to this Contract for and on their behalf.
  d) For the purpose of execution or performance of the obligations under this Contract SCDCL's Representative would act as an interface with the nominated representative of the successful bidder.
  e) Successful bidder shall comply with any instructions that are given by SCDCL's Representative during the course of this Contract in relation to the performance of its obligations under the terms of this Contract and the RFP.

f) A Committee comprising of representatives from SCDCL and the successful bidder shall meet on a mutually agreed time or quarterly basis to discuss any issues / bottlenecks being encountered.

4.61 Right of Monitoring, Inspection and Periodic Audit

- SCDCL or its designated agency reserves the right to inspect and monitor / assess the progress / performance / maintenance of the project/various activities as per the SoW at any time during the course of the Contract. SCDCL may demand and upon such demand being made SCDCL shall be provided with any document, data, material or any other information which it may require to assess the progress of the project/ delivery of services.
- SCDCL shall also have the right to conduct, either itself or through its designated agency/representative as it may deem fit, an audit to monitor the performance of the successful bidder of its obligations / functions in accordance with the standards committed to or required by SCDCL and the successful bidder undertakes to cooperate with and provide to SCDCL or its designated agency, all the required documents and other details for this purpose. Any deviations or contravention identified as a result of such audit/assessment would need to be rectified by the successful bidder failing which SCDCL may without prejudice to any other rights that it may have issued a notice of default.

4.62 INFORMATION SECURITY

- The Successful bidder shall not carry and / or transmit any material, information, layouts, diagrams, storage media or any other goods / material in physical or electronic form, which are proprietary to or owned by SCDCL, without prior written permission from SCDCL.
- The Successful bidder shall adhere to the Information Security policy developed by Central government as well as state government or any other competent authority as described by them.
- Successful bidder acknowledges that SCDCL business data and other SCDCL proprietary information or materials, whether developed by SCDCL or being used by SCDCL pursuant to a license agreement with a third party (the foregoing collectively referred to herein as “proprietary information”) are confidential and proprietary to SCDCL and Successful bidder agrees to use reasonable care to safeguard the proprietary information and to prevent the unauthorized use or disclosure thereof, which care shall not be less than that used by Successful bidder to protect its own proprietary information.
- Successful bidder recognizes that the goodwill of SCDCL depends, among other things, upon Successful bidder keeping such proprietary information confidential and that unauthorized disclosure of the same by Successful bidder could damage SCDCL and that by reason of Implementation Agency’s duties hereunder.
- Successful bidder may come into possession of such proprietary information even though Successful bidder does not take any direct part in or furnish the services performed for the creation of said proprietary information and shall limit access thereto to employees with a need to such access to perform the services required by this agreement. Successful bidder shall use such information only for the purpose of performing the said services.
- Successful bidder shall, upon termination of this agreement for any reason or upon demand by SCDCL, whichever is earlier return any and all information provided to Successful bidder by SCDCL including any copies or reproductions, both hard copy and electronic.

4.63 RELATIONSHIP BETWEEN THE PARTIES

- Nothing in this Contract constitutes any fiduciary relationship between SCDCL and Successful Bidder's Team or any relationship of employer-employee, principal and agent, or partnership, between SCDCL and Successful bidder.
- No Party has any authority to bind the other Party in any manner whatsoever except as agreed under the terms of this Contract.
- SCDCL has no obligations to the Successful Bidder's Team except as agreed under the terms of this Contract.

4.64 SPECIAL TERMS AND CONDITIONS

- Second hand Equipment: Any proposed equipment's shall be new and no second-hand equipment shall be accepted. Occurrence of such an event, will amount to mischief and fraudulence and the Bidder shall be liable for penal action which may be to the extent of termination of contract and forfeiture of PBG.
- *Acceptance Test*: A Testing Committee shall be constituted comprising of officers duly authorized by SCDCL and/or any third-party agency appointed by it. The acceptance tests shall be carried at each site by the committee.

4.65 FINAL ACCEPTANCE TEST (FAT)

- The Equipment shall be deemed to be commissioned, subject to successful FAT. Availability of all the defined services shall be verified. The Successful bidder shall be required to demonstrate all the features/facilities/functionalities as mentioned in the RFP for each site.
- The discovery of the equipment on EMS/NMS tool would be part of FAT.
- All documentation as defined should be completed before the final acceptance test.
- On successful completion of the final acceptance and on satisfaction of SCDCL with the working of the system, the acceptance certificate signed by SCDCL will be issued to the Successful bidder.
- The date on which final acceptance certificate is issued shall be deemed to be date of successful commission of the equipment. Any delay by the Successful bidder in commissioning of equipment's shall render the Successful bidder liable to the imposition of appropriate liquidated damages.

4.66 DELAY IN IMPLEMENTATION

- The timeline for implementation ***of entire Project including Hardware procurement, installation, commissioning and successful FAT is 150 Days*** from the date of signing of the contract. The Successful bidder is expected to convene kick-off meeting within 15 working days of award of contract.
- Successful Implementation shall be certified by the SCDCL after carrying out Final acceptance test as mentioned earlier.
- If the Successful bidder fails to comply with the time schedule, the Successful bidder shall be liable to pay penalty as mentioned in Section-5 of RFP/Bid document.
- The delay due to force majeure situation shall be excluded from the calculation of delay.

4.67 SLA MONITORING

- SCDCL may designate any agency/team for SLA management and monitoring. This agency shall monitor the SLA parameters and generate reports on regular basis. SCDCL reserves the right to periodically change the measurement points and methodologies used.

- The Successful bidder shall establish an Enterprise/Network Management System for monitoring and measurement of the SLA parameters prescribed as per this RFP/contract document.

4.68 EXIT MANAGEMENT

Purpose

a) This clause sets out the provisions which will apply upon completion of the contract period or upon termination of the agreement for any reasons. The Parties shall ensure that their respective associated entities, in case of SCDCL, any third party appointed by SCDCL and in case of the Successful bidder, the sub-contractors, carry out their respective obligations set out in this Exit Management Clause.
b) The exit management period starts 3 months before the expiry of contract or in case of termination of contract, the date on which the notice of termination is sent to the Successful bidder.
c) The exit management period ends on the date agreed upon by SCDCL or one year after the beginning of the exit management period, whichever is earlier.
d) The Parties shall ensure that their respective associated entities, authorized representative of or its nominated agencies and the vendor carry out their respective obligations set out in this Exit Management Clause.
e) Before the expiry of the exit management period, the Successful bidder shall deliver to SCDCL or its nominated agencies all new or up-dated materials from the categories, and shall not retain any copies thereof, except that the Successful bidder shall be permitted to retain one copy of such materials for archival purposes only.

4.69 Cooperation and Provision of Information

a) During the exit management period:

i. The Successful bidder will allow SCDCL or any third party appointed by SCDCL, access to information reasonably required to define the then current mode of operation associated with the provision of the services to enable SCDCL or any third party appointed by SCDCL to assess the existing services being delivered;
ii. Promptly on reasonable request by SCDCL or any third party appointed by SCDCL, the Successful bidder shall provide access to and copies of all information held or controlled by them which they have prepared or maintained in accordance with the “Contract”, the Project Plan, SLA and Scope of Work, relating to any material aspect of the services. SCDCL or any third party appointed by SCDCL shall be entitled to copy all such information. Such information shall be limited to the details pertaining to the scope under the contract. The successful bidder shall permit SCDCL or any third party appointed by SCDCL to have reasonable access to its employees and facilities as reasonably required by SCDCL or any third party appointed by SCDCL to understand the methods of delivery of the services employed by the Successful bidder and to assist appropriate knowledge transfer.
iii. Before the end of exit management period, the Successful bidder will ensure a successful trial run of Network administration, Facility management including helpdesk management etc. by SCDCL or by any third party appointed by SCDCL.

b) Confidential Information, Security and Data

i. The Successful bidder will promptly, on the commencement of the exit management period, supply to SCDCL or any third party appointed by SCDCL the following:
- Information relating to the current services rendered and performance data relating to the performance of sub-contractors/ bandwidth providers in relation to the services.
- Documentation related to Intellectual Property Rights.
- All confidential information related to SCDCL.
- Documentation relating to sub-contractors.
- All current and updated SCDCL data as is reasonably required by SCDCL or any third party appointed by SCDCL for purposes of transitioning the services to SCDCL or any third party appointed by SCDCL, in a format prescribed by SCDCL or any third party appointed by SCDCL.
- All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable SCDCL or any third party appointed by SCDCL, to carry out due diligence in order to transition the provision of the Services to SCDCL or any third party appointed by SCDCL, (as the case may be).

ii. Before the expiry of the exit management period, the Successful bidder shall deliver to SCDCL or any third party appointed by SCDCL all new or up-dated materials from the categories set out above and shall not retain any copies thereof.

iii. Before the expiry of the exit management period, unless otherwise provided under the "Contract", SCDCL or any third party appointed by SCDCL shall deliver to the Successful bidder all forms of "Successful bidder's" confidential information which is in the possession or control of SCDCL or any third party appointed by SCDCL.

c) Right of Access to Premises

i. At any time during the exit management period, where Assets are located at the Successful bidder's premises, the Successful bidder will be obliged to give reasonable rights of access to (or, in the case of Assets located on a third party's premises, procure reasonable rights of access to) SCDCL or any third party appointed by SCDCL in order to take stock of the Assets.

ii. The Successful bidder shall also give SCDCL or any third party appointed by SCDCL, right of reasonable access to its premises and shall procure SCDCL or any third party appointed by SCDCL, rights of access to relevant third party premises during the exit management period and for such period of time following termination or expiry of the "Contract" as is reasonably necessary to migrate the services to SCDCL or any third party appointed by SCDCL.

d) General Obligations of the Successful bidder

i. The Successful bidder shall provide all such information as may reasonably be necessary to bring into effect seamless handover as practicable in the circumstances to SCDCL or any third party appointed by SCDCL and which the Successful bidder has in its possession or control at any time during the exit management period.

ii. For the purposes of this Clause, anything in the possession or control of any Successful bidder, associated entity, or sub-contractor is deemed to be in the possession or control of the Successful bidder.

iii. The Successful bidder shall commit adequate resources to comply with its obligations under this Exit Management Clause.

4.70 Exit Management Plan

a) The Successful bidder shall provide SCDCL or any third party appointed by SCDCL with a recommended exit management plan ("Exit Management Plan") which shall deal with at least the following aspects of exit management in relation to the “Contract” as a whole and in relation to the Project Plan, SLA and Scope of Work.
b) A detailed programme of the transfer process that could be used in conjunction with SCDCL or any third party appointed by SCDCL including details of the means to be used to ensure continuing provision of the services throughout the transfer process and of the management structure to be used during the transfer.
c) Plans for the communication with such of the Successful bidder’s sub-contractors, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on SCDCL 's operations as a result of undertaking the transfer.
d) Identification of specific security tasks necessary at termination.
e) Plans for provision of contingent support to SCDCL or any third party appointed by SCDCL for a reasonable period after transfer for the purposes of seamlessly replacing the Services.
f) The Successful bidder shall re-draft the Exit Management Plan annually to ensure that it is kept relevant and up to date.
g) Each Exit Management Plan shall be presented by the Successful bidder to and approved by SCDCL or any third party appointed by SCDCL.
h) In case of expiry or termination of contract, each Party shall comply with the Exit Management Plan.
i) During the exit management period, the Successful bidder shall use its best efforts to deliver the services.
j) Payments during the Exit Management period shall be made in accordance with the Terms of Payment Clause.
k) This Exit Management plan shall be furnished in writing to SCDCL or any third party appointed by SCDCL within 90 days from the Effective Date of “Contract”.

4.71 INDEMNITY

- Successful Bidder will defend and/or settle any claims against SCDCL that allege that Bidder branded product or service as supplied under this contract infringes the intellectual property rights of a third party.
- Successful Bidder will rely on Customer’s prompt notification of the claim and cooperation with our defense. Bidder may modify the product or service so as to be non-infringing and materially equivalent, or we may procure a license. If these options are not available, we will refund to Customer the amount paid for the affected product in the first year or the depreciated value thereafter or, for support services, the balance of any pre-paid amount or, for professional services, the amount paid. Bidder is not responsible for claims resulting from any unauthorized use of the products or services. This section shall also apply to deliverables identified as such in the relevant Support Material except that Bidder is not responsible for claims resulting from deliverables content or design provided by Customer.

4.72 RISK PURCHASE

- SCDCL on identifying any material breach of contract by Bidder, shall give Bidder a cure period of 90 days to correct the breach. If Bidder fails to cure the breach in the said time duration and accept its inability to correct, SCDCL may terminate the part of the contract that is breached and employ a third party to do the work on behalf of SCDCL. Bidder shall

not be liable for any compensation for the work executed this way. Bidder shall execute the balance part of work as agreed under the contract.

4.73 APPROVALS / CLEARANCES

- Necessary approvals/ clearances concerned authorities, for establishing the proposed project are to be obtained by the Bidder, in case if any assistance is required from SCDCL the same shall be extended accordingly after due consideration.
- Necessary approvals / clearances from concerned authorities, as required, for fire protection, government duties / taxes are to be obtained by the Bidder.
- Necessary approvals / clearances, from concerned authorities (like Nagarpalikas, Public Works Department (PWD), Department of Irrigation, State Electricity Board etc. for "Right of way"), as required, are to be obtained by the bidder for to meet the system requirements. However, SCDCL will help in getting such grants and approvals from the concerned government departments.
- Necessary approvals/ clearances from DoT/TEC/TRAI/ Concerned authorities/BSNL/any service provider, for establishing the network and connecting different Network elements/ports to BSNL/ any service provider's circuits, shall be obtained by the Bidder.

4.74 PROJECT IMPLEMENTATION

- SCDCL or its designated agency will be responsible for project monitoring and all inspection, installation, commissioning and acceptance of work will be undertaken by them. All Invoices, Vouchers, Bills for supplied goods and services by the Service Provider under the scope of the work will be verified measured and accepted by such designated agency, for release of payment.
- As part of implementation the successful bidder shall provide details of equipment that will be incorporated in the proposed system, material and manpower as required. The location for storing spare parts and quantity, if any, there on should also be clearly indicated.
- The successful bidder will implement the project strictly as per the plan approved by SCDCL. The successful bidder shall install and implement the proposed system at such locations as may be selected by SCDCL within 16 weeks from the date of kick-off meeting. The successful bidder will have to complete provisional Acceptance Test of the equipment to the satisfaction of SCDCL. This period may be extended depending upon the fulfilment of Conditions Precedent.
- The successful bidder shall provide the necessary technical support, Standard Operating Procedure (SOP) and other information to SCDCL and its user organizations in implementing the proposed system applications. SCDCL at any time during the currency of the Agreement should have access to the proposed sites.
- The successful bidder shall arrange to obtain all statutory permission (If any) at no cost to the SCDCL.
- The successful bidder may have to work during Holidays and Sundays, according to the urgency of work.
- The Service Provider will obtain such permission on his own in consultation with the SCDCL. It will be the responsibility of the Service Provider to co-ordinate with all other stakeholders working with SCDCL in order to obtain NOC required to execute the job.
- The successful bidder shall not disturb or damage the exiting network of communication. If in case any damage to the network is done, the same shall be corrected with no extra cost. The agency shall also be responsible for paying penalty, as imposed by the service owner to which the damage is incurred.

- In case of the material/solution supplied and installed is rejected owing to its non-conformity to the specification or due to the poor quality of workmanship, the same shall be replaced promptly.
- Any damage caused to the property of SCDCL while executing the job shall be solely responsibility of successful bidder's. In case any damage to the property is caused, the same will be recovered from the successful bidder. No extra cost shall be paid to the successful bidder for such reasons.
- The successful bidder shall have to furnish the documentation of the work undertaken in consultation with SCDCL representative. 3 sets of such documentation should be provided before the issue of completion certificate.
- It is a turnkey project. The successful bidder shall be fully responsible for implementing the Project in totality and should include the items and their prices, if not included in Schedule of Requirement to complete the project on turnkey basis. Any claim whatsoever in this regard will not be entertained later on.
- In the event of the delay in delivery of contracted services or services is not satisfactory the SCDCL may procure goods/ services from else ware as prescribed in bid and successful bidder shall be liable without limitations for the difference between the cost of such substitution and the price set forth in the contract for the goods involved i.e. at the risk and cost of the successful bidder.
- SCDCL or its representatives reserves the right to visit any working site of the successful bidder with prior intimation. The concern successful bidder has to make necessary arrangement for the same.
- The successful bidder shall be responsible and take required insurance for all of their representations working on the site at their own cost. SCDCL will not be responsible for any loss or damage to any of the representatives of the successful bidder during the said contract.
- All work shall be performed and executed by the successful bidder in strict conformity with the engineering- charge / representative from SCDCL and any relative instruction issued to the Service Provider by the SCDCL from time to time.
- SCDCL shall associate few engineers / technicians during installation and commissioning work. The successful bidder shall ensure proper participation of the nominated personnel from SCDCL and train them on the related system.
- The successful bidder, will have to coordinate with the various stakeholder and Operators engaged with SCDCL for execution of Solapur Smart City Project for timely completion & commissioning of sites.

4.75 THIRD PARTY AGENCY

- SCDCL appointed PMC would monitor the project during implementation, commissioning and operation. The Agency will also conduct Final Acceptance Test as per the technical requirement of the Agreement and will issue the Certificate of Completion of each proposed site. Third Party Agency will verify the services provided by the successful bidder under the Agreement. The successful bidder will have to coordinate and co-operate with such agency.

4.76 PROVISION OF SPACE / UTILITIES

- Necessary Raw electrical AC power supply at every site will be provided by the SCDCL.
- SCDCL may decide at its discretion to change the location of sites during implementation or after implementation but during the Agreement period. The services shall be operational within a period of 15 days from the date the said request is made by SCDCL.

- SCDCL shall reimburse the actual cost of relocation incurred by the successful bidder as verified by the its designated Agency.
- The entry and exit to the site for the equipment and personnel of the successful bidder shall be in accordance with Security Rules and Regulations that may apply to the Government Campus where the site is located.
- SCDCL shall allow or obtain the required permission to enable the successful bidder employees or its authorized personnel to enter in the premises where the Services are provided for related activities. This shall be in accordance with Security Rules and Regulations that may apply to the Government Campus where the site is located.

4.77 WORK/SUB CONTRACT TO START-UPS AS PER POLICY GUIDELINES OF DEPT. OF S&T, GOVT. OF MAHARASHTRA

As per the provision in Electronics & IT/ITeS Start-up Policy Resolution No. ITS/10/2015/5284/IT dated 6th June, 2016 issued by Department of Science & Technology; in e-Governance project undertaken by Government Departments or its Boards, Corporations or parastatal bodies getting grants from the Government, the chosen solution provider or system integrator will pass on job work or will outsource part of the work of a value ranging between 5% to 10% of the contract value to the eligible start-ups/SME's and to students of short listed Technical Colleges in Maharashtra with their firm registered in the state of Maharashtra . In such arrangements, the responsibility of meeting SLAs (Service Level Agreements) will continue to belong to the solution provider or the system integrator.

1. This is a Quality & Cost Based Selection (QCBS),
2. The Relative Financial Score (RFs) carries 30% of the weightage, while the Relative Technical Score (RTs), is given 70% weightage.
3. The Financial Bids of Technically Qualified bidders will be opened on the prescribed date in the presence/ absence of bidder representatives.

The marks secured based on evaluation of the Financial Bid as per the above shall be the financial score of the Bidder for the Project ("Financial Score")

Composite Score of the Bidders

Composite Score of the Bidders for the Project shall be worked out as under:

Table 7: Composite Scoring Criteria

Bidder's Scores	Weight	Weighted Score
(A)	(B)	(C) = (A) x (B)
Technical Score	70%	X
Financial Score	30%	Y
Composite Score of the Bidder		(X+Y)

4.78 Right to vary the scope of the work at the time of Award

The Purchaser 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 resultant 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 DEPARTMENT changed order.

4.79 OEM Professional Services for Project Implementation

Both the bidder and the OEM shall have to deploy professional services resources to implement and manage the project. The following requirements are required to be met.

All resources from OEM and Bidder are required to be their own resources; i.e. all resources required from the OEM should be directly from the OEM and the same for the bidder.

As a part of the build phase, it is in the best interest of project for OEM to be accountable for the configuration and deployment, which should happen as per the high level design done by the System Integrator. Therefore, the SI should use the OEM to deliver the network wide low level design, the device level configurations and acceptance plan. This will ensure that the product & technology supplied by respective OEM work the way it is committed by the SI.

SI & OEM's Professional Services Offerings should bring the following to Customer:

(1) Provides a full range of implementation services, including project management, project engineering, and configuration, staging, and rollout coordination, to ensure that Solution deployments are seamless and scalable.
(2) The Scope of Work has been described in the Sections below.
(3) The SI shall build a high-performance network that will operate at best efficiency all the time. Only seamlessly integrated network architecture with focused engineering support can consistently deliver quality of service, reliability, availability, and security.
(4) SI should provide the overall program management to ensure that the complete solution, which may include multiple technologies from respective OEM, work together seamlessly as per the design goals. The SI should further ensure that a robust support model is put together in such a way that the Solution runs with the level of availability it is designed for and with a predictable restoration time in case of any failures.
(5) The OEM should complement the SI by providing the OEM specific Planning, designing (Low Level Design, Implementation planning, Device Level Configuration etc.) expertise to make sure that there supplied technology & products work as per the design objectives.

SI along with the OEM shall be responsible for rolling-out turn-key project under the scope of this document with shortlisted bidders & their partners.

Technology planning & Design

The life cycle of the PROJECT will begin with the various planning stages associated with Architect deployment. The OEM must consider many factors such as available bandwidth, resiliency and recovery, quality of service (QoS) and rollout planning and then build an appropriate technology plan.

OEM responsible to plan, design and program manage the complete Implementation for initial period (6 months).

After completion of the technology plan, the technical design of the Solution elements will be defined. OEMs Professional Services engineering team shall consult Customer/ SI Solutions team to help them meet these goals by preparing the design documentation.

Implementation

Once the design is completed and the required activities have been identified; the physical rollout of product should commence. SI will use trained and highly skilled ecosystem engineering team or integrators to carry out the implementation. And OEM to be responsible for below

OEM responsible for implementing the core Setup and also implementing 15% of Products.

The OEM shall be responsible for the following:

Project Management for complete implementation phase

(1) Low Level Design Development
(2) Solution Implementation Plan Development
(3) System Acceptance Test Plan Development
(4) Implementation of Core Setup
(5) Implementation of 15% of Products

The SI shall be responsible for the following:

(1) Complete Implementation services
(2) Complete SATP

OEM Services Completion

A final letter it to be submitted by the SI confirming that the complete design has been prepared by the OEM in consultation with the SI and the same has been correctly implemented by the SI. This letter should be jointly signed by the SI as well as the OEM. This is to ensure that OEM Delivery resources participation during Project Phase.

SECTION 5

Annexures

&

Formats

Annexures

TECHNICAL AND FUNCTIONAL REQUIREMENT OF PROJECT

5.1 Wi-Fi Hotspots Solution and Wireless Controller with HA

Sr. NO.	Specification
1	Must be compliant with IEEE CAPWAP or equivalent for controller-based WLANs.
2	Should have atleast 4 x 10 Gigabit Ethernet interface.
3	Should support both centralized as well as distributed traffic forwarding architecture with L3 roaming support from day 1. Should have IPv6 ready from day one.
4	Controller should have hot-swappable redundant power supplies.
5	Controller should support minimum 60,000 users per chassis
6	WLAN Controller should support minimum of 3500 Access points in a single chassis. If any OEM/Bidder can't provide WLAN controller to support 3500 AP in 2RU form factor, multiple controllers must be proposed to meet the requirement from day one. Proposed controller should support 1+1/N+1 redundancy from day one
7	Shall support WIPS, and spectral analysis from day 1.
8	Should be rack-mountable. Required accessories for rack mounting to be provided.
9	WLC should support AVC functionality on local switching architecture
10	WLC should support AC and DC powering options
11	WLC should support AP License Migration from one WLC to another
12	**S**hould support minimum 4000 VLANs
13	Must support stateful switchover between active and standby controller in a sub second time frame.
14	WLC should support L2 and L3 roaming for IPv4 and IPv6 clients
15	WLC should support guest-access functionality for IPv6 clients.
16	Should support IEEE 802.1p priority tag.
17	Should ensure WLAN reliability by proactively determining and adjusting to changing RF conditions.

Sr. NO.	Specification
18	Should provide real-time radio power adjustments based on changing environmental conditions and signal coverage adjustments.
19	Should support automatic radio channel adjustments for intelligent channel switching and real-time interference detection.
20	Should support client load balancing to balance the number of clients across multiple APs to optimize AP and client throughput.
21	Should support policy based forwarding to classify data traffic based on ACLs
22	Should support minimum 500 WLANs
23	Should support dynamic VLAN assignment
24	Should support Hot Spot 2.0
25	Should able to do dynamic channel bonding based on interference detected on particular channel.
26	Must support coverage hole detection and correction that can be adjusted on a per WLAN basis.
27	Must support RF Management with 40 MHz and 80 Mhz channels with 802.11n & 802.11ac
28	Should provide visibility to Network airtime in order to set the airtime policy enforcement
29	Must be able to restrict the number of logins per user.
30	Should support web-based authentication to provide a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant.
31	Should support port-based and SSID-based IEEE 802.1X authentication.
32	Should support MAC authentication to provide simple authentication based on a user's MAC address.
33	WLC Should support Rogue AP detection, classification and standard WIPS signatures.
34	The controller shall be able to detect employee device connection to Rogue Access Point and contain it automatically
35	WLC should be able to exclude clients based on excessive/multiple authentication failure.
36	Shall support AES or TKIP encryption to secure the data integrity of wireless traffic

Sr. NO.	Specification
37	Shall able to provide an air quality index for ensuring the better performance
38	Shall able to provide real time chart showing interference per access point on per radio and per-channel basis.
39	Should support AP location-based user access to control the locations where a wireless user can access the network
40	Should support Public Key Infrastructure (PKI) to control access
41	Must be able to set a maximum per-user bandwidth limit on a per-SSID basis.
42	Should support SNMPv3, SSHv2 and SSL for secure management.
43	Should support encrypted mechanism to securely upload/download software image to and from Wireless controller.
44	Should provide visibility between a wired and wireless network using IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and sFlow/equivalent.
45	Should support AP Plug and Play (PnP) deployment with zero-configuration capability
46	Should support AP grouping to enable administrator to easily apply AP-based or radio-based configurations to all the APs in the same group
47	Should support selective firmware upgrade APs, typically to a group of APs minimize the impact of up-gradation
48	Should have a suitable serial console port.
49	Should have Voice and Video Call Admission and Stream prioritization for preferential QOS
50	Controller should have Deep Packet Inspection for Layer 4-7 traffic for user for all traffic across the network to analyses information about applications usage and prioritization
51	Should able do the application visibility for the application, which run behind HTTP proxy.
52	Controller should have profiling of devices based on protocols like HTTP, DHCP and more to identify the end devices on the network.
53	Should support visibly and control based on the type of applications
54	The controller failover shall not trigger client de-authentication

5.2 Outdoor Access Point

Table 8: Technical Compliance Table A

Sr. No.	Specifications
1	Access Points proposed must be 802.11ac, Wave 2 compliant, include radios for both 2.4 GHz and 5 GHz.
2	AP should support dual band antenna ports.
3	Must support a variety of antenna options. (Omni and directional)
4	Must have -100 dB or better Receiver Sensitivity.
5	Must support 2X2 multiple-input multiple-output (MIMO) with two spatial streams
6	Must support 802.11ac, Wave 2 and backward compatible with 802.11n standards
7	Must support data rates up-to 860 Mbps on 5Ghz radio.
8	Must support 80 MHz wide channels in 5 GHz.
9	Must support WAP enforced load-balance between 2.4Ghz and 5Ghz band.
10	Should support configuring the access point as network connected sensor to access any network location covered by the access point to get real-time Spectrum analysis data
11	Must support up-to 27dbm or higher of transmit power
12	Access point should 802.11ac, 802.11n and 802.11a/b/g Beam forming
13	The Wireless Backhaul/Mesh shall operate in 5Ghz
14	Support Encrypted and authenticated connectivity between all backhaul components
15	Access point should have multiple wired uplink interfaces including 10/100/1000BASE-T Ethernet autosensing (RJ-45) and a build-in SFP port for long distance wired connection to AP.
16	Should have dedicated console port (RJ-45) for local troubleshooting
17	Wireless AP should support beam forming technology to improve downlink performance of all mobile devices, including one-, two-, and three-spatial-stream devices on 802.11ac without taking the inputs from client.
18	Wireless AP Should able to detect and classify non-Wi-Fi wireless transmissions.

Sr. No.	Specifications
19	Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization
20	Access point shall support powering from AC /DC/ UPOE.
21	Access point shall support pole, wall and Cable strand mounting options.
22	The equipment shall support up to 100 MPH sustained winds & 165 MPH wind gusts.
23	The Access point shall be IP67 and NEMA rated
24	The Access point shall support operating temperature of -40 to 65°C
25	The Access point shall support Storage temperature of -50 to 70°C
26	802.11e and WMM
27	Wi-Fi Alliance Certification for WMM and WMM power save
28	Must support Reliable Multicast to Unicast conversion to maintain video quality at AP level
29	Must support QoS and Video Call Admission Control capabilities.
30	Must support Spectrum analysis including @ 80 MHz
31	Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.
32	Should support mesh capabilities for temporary connectivity in areas with no Ethernet cabling.
33	Should have and option of configuring all the antennae port via software to run all on dual band or any single band configuration.
34	Must support 16 WLANs per AP for BSSID deployment flexibility.
35	Must support telnet and SSH login to APs directly for troubleshooting flexibility.

5.3 Indoor Access Point

Table 9: Technical Compliance Table B

Sr. No.	Specification
1	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac Wave 2. with 4X4 MIMO configurations
2	An access point must include a standard OEM provided Mounting brackets for mounting on Ceiling or Rooftop.
3	Access point must support spectrum intelligence across 20-, 40-, and 80-MHz-wide channels to combat performance problems due to wireless interference.
4	Access Point shall support Console port that uses Standard Port (RJ-45) type connection
5	Access point must have an two Ethernet port for Link aggregation
6	Access point should have serial/console port
7	Must have atleast 3 dBi Antenna gain on each radios
8	Must support 4x4:3 spatial streams for both 802.11ac and 802.11n client
9	Access point must support a minimum of 1.9 Gbps user throughput including both the radios
10	Must support minimum of 22 dbm of transmit power in both 2.4Ghz and 5Ghz radios. And should follow the WPC norms.
11	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.
12	Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization
13	Must have -97 dB or better Receiver Sensitivity.
14	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.
15	Must support Management Frame Protection.
16	Should support locally significant certificates on the APs using a Public Key Infrastructure (PKI).
17	Access Points must support Hardware-based encrypted user data and management traffic between controller and Access point for better security.
18	Mesh support should support QoS for voice over wireless.
19	Must be plenum-rated (UL2043).

Sr. No.	Specification
20	Must support 16 WLANs per AP for SSID deployment flexibility.
21	Must continue serving clients when WAN link to controller is back up again, should not reboot before joining
22	The APs must support centralized wireless mode with the use of a controller, but the APs must also support operation in autonomous mode without the presence of any controller, when needed
23	When operated in remote AP mode, the AP must not disconnect any clients when the connection to the controller fails or in the case the failed connection has been restored again.
24	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.
25	Must support Power over Ethernet, local power (DC Power), and power injectors.
26	802.11e and WMM
27	Must support QoS and Video Call Admission Control capabilities.
28	Access Point should 802.11 DFS certified

5.4 AAA Billing Solution

Table 10: AAA Billing Solution

S. No.	Specification
1	The Authentication, Authorization and Accounting (AAA) solution should be fully scalable and capable for future needs without any existing Hardware up-gradation or inserting a new device.
2	The AAA should be capable of user customized branding of Splash Page, Logo, Background, domain, etc.
3	The system should be capable of delivering Pre-authentication ads to WiFi users from day one.
4	The system should be capable of delivering Pre-authentication ads in form of Click to connect, Video push, Offers and Vouchers, App push and Social media, etc.
5	The system should be capable of delivering In-session browser ads from day one.
6	The system should be configurable to create different types of premium ad-free internet access plans based on duration, bandwidth, validity, quota and multi-device accessibility.

S. No.	Specification
7	The AAA should have an inbuilt mechanism to capture analytical data such as user Mobile number, MAC ID, IP address, Make and model of the device, OS, session time, etc from day one.
8	The system should be capable of delivering multiple ads based on location, specific duration, number of hits, etc.
9	The system should have a complete monetization dashboard to configure and view ads, splash pages, user templates, pricing plans, etc.
10	The system should have integrated SMS and payment gateway which should be customizable as per operational needs.
11	The AAA should support all types of payment options for paid users including M-Wallets and Payment Banks.
12	The AAA should support BYOD and adaptive captive portal and splash page from day one.
13	The AAA should have user feedback functionality built-in from day one. Eg. It should be possible to survey users randomly or at specific times about the services or any other content.
14	The AAA should support Social Media integration from day one.
15	The system should support Walled Garden functionality from day one.

5.5 Access Switch (Outdoor Use) / Field location - Network switch

Bidder need to provide IP67 rated enclosure for mounting of filed location switch.

Table 11: Access Switch (Outdoor Use) / Field location - Network switch

1	Switch Architecture and Performance	The switch should provide 8 port 10/100/1000 Mbps GE ports downlink out of which minimum four should be POE/POE+ and switch should additionally have 4 GE SFP uplinks. Should be proposed with ruggedized transceivers as per SI solution.
2		Switch should have wire rate switching fabric of minimum **20 Gbps** or more.
3	Layer 2 Features	802. 1Q VLAN on all ports with support for minimum **500** active VLANs and minimum 1K Mac addresses
4		Spanning Tree Protocol as per IEEE 802.1d, 802.1s and 802.1w
5		Should support Improved resiliency with the support of Resilient Ethernet Protocol (REP) or equivalent for ring topology which should provide 50ms ring convergence
6		Link Aggregation Control Protocol (LACP) as per IEEE 802.3ad.
7		Switch should support IGMP v1/v2/v3 as well as IGMP snooping and minimum 500 IGMP Multicast Groups
8	Quality of Service (QoS) Features	Switch should support classification and scheduling as per IEEE 802.1P on all ports and four egress queues per port. Switch should also support Egress Queuing/shaping, Mechanism of applying Automatic QoS or equivalent mechanism
9		Switch should support strict priority queuing or equivalent to guarantee that the highest-priority packets are serviced ahead of all other traffic.
10	Security Features	Switch should support ACLs, TACACS+, RADIUS, IP Route Filtering, ARP spoofing, DHCP snooping, DHCP Option 82, Dynamic ARP Inspection (DAI), IP source guard and BDU Guard or equivalent**,** IEEE 802.1AE
11	Management, Easy-to-Use Deployment	Switch should have a console port, support for SNMP Version 1, 2 and 3, TELNET, SSHv2, 4 groups of embedded RMON, UDLD, Layer 2 Trace route or equivalent, DHCP server

12	and Control Features	The switch should support following IPv6 Features: 128-Bit Wide Unicast Addresses, DNS for IPv6, ICMPv6, Neighbor Discovery, IPv6 Stateless Auto-configuration and Duplicate Address Detection, SNMP and Syslog Over IPv6, HTTP over IPv6 and IPv6 MLD snooping
13	Standards	RoHS Compliant, IEEE 1588v2 hardware ready - Precision Time Protocol, IEEE 802.3af, **802.3at, NTP, PTP**
14	Industry Standards:	• KEMA, NEMA TS-2, PROFINETv2, ABB IT Certificate, IP30
15	Safety & Hazard	• UL 508, CSA C22.2 No.142, UL/CSA 60950-1, EN60950-1, CB to IEC 60950-1, OM to NOM-019-SCF1, ANSI/ISA 12.12.01 (Class 1, Div 2 A-D), EN 60079-0, -15 ATEX certification (Class I, Zone 2 A-D) with cabinet enclosure
16		DIN rail mount
17	EMC Compliance	• FCC, IEC/EN 61000, RoHS
18	Operating Temperature	• -40C to +70C with Enclosure
19	Shock and Vibration	• IEC 60068-2-27 (Operational Shock, Non-Operational Shock)
20		• IEC 60068-2-6, IEC 60068-2-64, EN61373 (Operational Vibration, Non-operational Vibration)
21	Relative Humidity	• Relative Humidity of 5% or 95% Non-condensing, IEC 60068 -2-3, IEC 60068-2-30, IEC 60068-52-2

5.6 E-Governance Solution

The system requires continuous availability (24 * 7).The system shall be designed in such a way so as to ensure that the loss of data is minimized due to network drop outs. Automatic refreshing of data at specified time intervals. The information shall be refreshed from the database and shall not require user intervention. System should have an online help capability, which should be customizable. Should have a facility for online learning and collaboration. All reports should be query based and should have options like department zones, wards, employees, from date, to date, etc.

Authority Users will access the system using Ethernet LAN / Lease Line / RF / Internet

Bidder needs to follow below deployment model for deployment;

5.7 Integration of Solapur RTS

Bidder needs to integrate with existing Right to services system to the Command and Control Center. The list of Right to Services are as follows:

1) Birth Certificate
2) Death Certificate
3) Marriage Registration
4) Assessment Certificate
5) No dues Certificate
6) Transfer of Property Certificate
7) Zone Certificate
8) Layout identifying boundaries of the Plot
9) Building Permission
10) Plinth Certificate
11) Occupancy Certificate
12) Water Connection
13) Drainage Connection
14) NOC for Fire protection

Also it must be scalable to accommodate further services that might be added to this list

5.8 Payment of bills

Table 12: Payment of bills

S.no	Description
1	Receipt Generation: Create Receipt against bills
2	Cheque Management: Reconciliation and remittance to Accounts
3	Counter Collection: Counter collections through Zonal offices/Collection Centers/Treasury.
4	Counters which can access the bill details from individual applications. Additional security
5	levels (IP based) for counters.
6	**Online Collection:**
7	Credit/Debit Card Collection (through 3rd party payment gateways), ATM Integration
8	Online Generation of Receipts
9	Cancellation of receipts/cheques: bounced cheques, post-remittance cancellations Reports
10	Daily Collection report (mode of payment, Counter)
11	Collection summary (by location payment mode and service type)
12	Bank remittance statement (by bank name , bank account , payment mode, location)
13	Receipt Register (by service , location , counter)
14	Online Transaction report
15	Pending Challan report

16	Dishonored instrument report (By service , location , mode)
17	Collection summary (By Service ,payment mode ,transaction mode ,location, bank)
18	**Billing Systems**
19	eGov Modules like Property tax, Trade License, Land and estate, Company tax, professional tax , Building plan approval
20	eGov Financials - Financial Accounting System for updating of the General Ledger and generating Financial Statements
21	Third-party Payment Gateways like Bill Desk to enable online payments Integration with ATM's

5.9 Complaint Redressal

Table 13: Complaint Redressal

S.No	Citizen Grievances Redressal
1	The purpose of this module will be to integrate inputs / complaints received on any of the systems and trigger events in the ERP system for the complaint to be resolved efficiently. The workflows outlined in this document aims at effective monitoring of service levels and reducing repeat complaints.
2	Grievance Management system shall be a web based application where the citizen can send their concerned grievance & suggestion to the respective departments. The citizen may interact with AITL using the portal, the mobile app, the kiosk or approach the citizen facilitation Centre. In all these cases the workflow shall proceed from the portal.
3	Citizens can submit complaint/suggestion/application/grievances to AITL. Each complaint is recorded with a unique number, which is given to the citizen. These complaints are then forwarded to different sections depending on the type and nature of the complaint. The concerned section staff attends the complaints within the given time period. The reply is sent back from the corresponding department/section to Grievance Handling section and status is updated for the user.
4	Once the grievance is received, it shall have a work flow to trigger an event in the ERP system. The module shall have a comprehensive Service Delivery Framework which: · Is easily accessible · Responsive to citizen's needs · Enables quick decision capability · Connects all stakeholders with right kind of information in the quickest possible timeline · Allows all stakeholders clear visibility and communication

5	The solution shall offer citizens ability of reaching out to AITL through variety of options to ensure broad based participatory framework of communication, thus enabling wider participation from citizens to improve service quality and civic livability quality. The proposed system shall offer multiple options by Citizen Facilitation Centre, online through web portal, SMS, phone calls & E-Mail, Web App, Mobile App, IVR, call back service, multi-services digital kiosks etc., to register a complaint. Further, a time bound call centre is also being proposed to support and manage in and out calls to and from Citizens. All complaints shall be allocated, routed and managed through an automated algorithm, which is designed to identify actual resource within AITL to manage the complaint and thus removing human interface to work assignment. Further, concerned higher authorities within AITL are to be empowered with real-time mobile Apps and web Apps to monitor the complaint resolution process and capability to intervene if necessary, to help them in decision making process to take needful corrective actions. The system shall automate enforcement of SLA policies and streamline and automate every process from initial citizen request to resolution more efficiently and cost effectively.
6	The system shall be capable of communicating with citizens and officers alike about the status and tracking of the complaints via SMS and email including unique tracking numbers.
7	The complaint redressal system shall enable configuration of AITL's respective geographical and administrative jurisdictions including service delivery essential information. The highest office in government pertaining to AITL management should have access capability to aggregated data and analytics from all the wards within the system.
8	The system shall have the ability to maintain different types of grievances caused to the citizens, department or section that needs to address the grievance, number of days within which the grievance needs to be addressed and nature of grievance whether it is financial or non-financial.
9	It shall have the ability to maintain the statuses of the grievances registered in AURIC. Also, the ability to maintain the details of work/application that has not been addressed within the prescribed time, number of days of delay and compensation paid per day in case of delay in SLA of the grievances registered in AITL.
10	The system must maintain the details of officers designated to redress grievances mapped to the department-section and the compensation details from the officer responsible and payment details to the citizens if the applications are not processed within the prescribed time. (Breach of SLA).
11	On sending the grievance & suggestion the department officials are bound to respond to the grievance & suggestion as per the specified time frame. All grievances & suggestion would be allotted a unique number, which would be the base for further correspondence. There would be automatic escalation plus provision for AITL staff to post confirmation of a 'before' and 'after' of the complaint. Following reports shall be generated by the applications: · All grievances registered during a given period · Pending grievance registered during a given period · Disposed grievance during a given period

	· Duration of grievances registered during the period · Repeated grievances registered during the period.
12	All these reports can be generated departmental wise, grievance wise, department & grievance wise. On the basis of these reports analysis can be made and decisions shall be taken by government officials.
13	AITL will provide various citizen and public services due to which, it might receive number of complaints/suggestions/feedback pertaining to its services. To address all these complaints, it is necessary to have an efficient and effective grievance redressal mechanism. It helps in making the administration more accountable, responsive and user friendly. The objective of public grievance monitoring system is to provide multiple channels of grievance recording, in order to make it more citizens friendly and to provide linkages to different sections for increased transparency, citizen participation and performance accountability.
14	**Modes of complaint registration**
15	· Through Citizen Facilitation Centre · Online through web portal · Through E-Mail · Through SMS · Mobile App · Through Calls · Multi-Service Digital Kiosks · Through IVR · Based on Recorded details · Call Back · Other existing complaint systems
16	The system should be capable of converging information management and delivery system, which enables calls, collected through different communication channels to be converged on to the common distribution system and hence brings in commonality in allocation and response mechanism.
17	**Complaint Registration**

18	· Through Call Centre (Phone, e-Mail & SMS): A citizen calls designated telephone number. Call centre operator registers the single or multiple complaints with required details. Complaints through e-Mail / SMS shall be received at call centre. Complainant shall be communicated the complaint tracking number(s) generated by the system and acknowledgement SMS send to the registered mobile number. · At Citizen Facilitation Centre: Citizen visits the CFC location in person to get his / her complaint registered. Complaint shall be registered in the system with all due details and a printed acknowledgement receipt shall be given to the citizen. · Through Website: Citizen shall be able to register his / her complaint on website and can print acknowledgement receipt. · Through Multi-Services Digital Kiosks: Citizen shall be able to register his / her complaints at multi-services digital kiosks which shall be located at all strategic locations around AURIC. Complainant shall be communicated complaint tracking number(s) generated by the system and acknowledgement SMS send to registered mobile number. · Through IVR: Citizen calls on the designated number. This feature shall be available when Call centre is not operational i.e. during non-working hours or when all lines at the call Centre are busy. In case all the activated extension numbers are engaged with other calls or operator not available to receive calls, the IVR system activates call waiting message for the caller with the option to either wait or option to dial 9 and give missed call for call back to caller or register call via voice recording. IVR system shall record the complaint details provided by the citizen during the call. Call centre operator registers the complaint based on the details provided in recording or calls back the citizen to register the complaint. Citizen is given a complaint registration number via SMS.
20	Once a complaint is registered with the system, it automatically is assigned to a concerned area officer dealing with the problem based on the scientific algorithm engine built in to the system and allocation matrix defined. The system should automatically send an SMS and email to officer alerting him / her on the complaint. Application should offer following definable Allocation methods: · Workload based allocation · Round robin allocation based on SLA hours · Sequential allocation of complaint to each member of the team If the complaint is not resolved and closed within the specified period, the same should get escalated to higher authorities. The allocation and escalation process should be fully automated and not require any human intervention; however, system should provide a feature to switch to manual allocation, if needed.
21	**Field Call Report in case of citizen area visit**

22	The AITL officer updates the details of the work done along with the status of the complaint (Pending / closed) in the system against each complaint. The system shall maintain the history of the work done.
23	**Complaint Closure**
24	The officer needs to resolve a complaint within a specified SLA period. Once a complaint is resolved, the officer fills a field call report and submits to a superior, who in turn calls the complainant to seek his / her satisfaction on the measures undertaken to solve the problem. If the complaint is not redressed within a fixed number of hours, the system shoots off SMS and email to higher officials in hierarchy based on the escalation matrix defined.
25	**Complaint Re-Open Process**
26	The Citizen has option to re-open his / her complaint if not satisfied with the services rendered. The Citizen can request to re-open the complaint via Email or Phone or SMS. Any complaint can be re-opened only if it is within the SLA or re-open hours set for that complaint. All re-opened complaints shall be escalated to concerned senior officials.
27	**Complaint Status**
28	The Citizen should be able to know the status of his / her complaint online from web site, application or through phone / SMS.
29	**Citizen Feedback**
30	Citizen should have an option on the website to voluntarily provide their feedback on the complaint redressal process and also to comment on the satisfaction/dissatisfaction received by them while using the system.
31	**Problem Category, Problem Category, SLA**
32	The various problems, for which the complaints are raised, could be part of a particular Department. These problems are categorized as Drainage Maintenance, Footpath, Roads etc could be part of Engineering department & Traffic signal/Central Verge plantation site, Tree cutting/trimming related problems could be part of Garden department. Application Administrator should be able to define standard SLA hours, problem category and problems. The application administrator shall be: · Able to add/edit/delete standard SLA · Able to add/edit/delete different type of problem category · Able to add/edit/delete problems under problem category · Able to attach standard SLA hours and department to each problem · Admin shall be able to change status of problem category in active/inactive state
33	**Holiday, Department, Designation, Employee**
34	The application administrator should be able to manage AITL's holiday calendar, department, designation and employee details in the system.
35	**Allocation & Escalation Matrix**

36	The application administrator should be able to maintain allocation matrix for the AITL's employees in resolving the various categories of problems for the area for which he / she is responsible to look at. This setup helps the Automatic Complaint allocation to the employees. Set the priority based on which the selected employee will receive the complaints for the selected department's problem category of his/her area. The application administrator should be able to set up the escalation matrix for each department at the various levels and to define what should be the mode of escalation communication for each of these levels and define their frequency. The system automatically escalates the complaints based on SLA, escalation matrix and the frequency defined.
37	**Area Mapping, Area Transfer, Employee Transfer**
38	Complaint allocation process should be tightly integrated with AITL's area, employees and complaints. Based on the problem location, the complaint should get allocated to the AITL official. Each area of a city is mapped with the AITL's operational area and each employee is mapped with location & department. The application administrator can transfer area from one operational area to another as well as an employee from one location to another. The transfer process shall be designed in such a way that all pending complaints shall be automatically be detached from the employee being transferred and the same shall be either automatically attached to the peer or higher official in hierarchy.
39	**Complaint Transfer**
40	AITL Official can transfer his / her pending complaints to another official from the same or different area / location.
41	**Dashboard**
42	Real-time processed information immensely aid senior officials in taking immediate corrective and preventive measures. Analytical reports help administration in identification of areas of concern and root-causes. The Grievances System shall provide a real-time dashboard.
43	**Mobile App for Citizen**
44	Comprehensive Complaint Redressal System shall be one of the modules in AITL Portal and Mobile Application for easier registration of grievance. The grievance redressal module in AITL Portal and mobile application shall have: · Device Registration & profile creation · Complaint registration · Complaint Status · Upload geo location tagged pictures · Know your Location · Share App · Update Profile · Citizen Opinion
45	**Mobile App for Complaint Closure**

46	Grievance Redressal module in the AITL Portal and mobile app shall have a front- end Complaint Closure module for field. Below are the features of the Complaint Closure Module: · Easy-to-use authentication process via registered mobile number during initial application set up on the respective mobile devices. · Facility to view the list of complaints allocated to the respective field officer along with the easy access to detailed information on each registered complaint. · Visibility to problem location's image captured and submitted by the citizen, thereby facilitating field officer with ease of locating the problem area. · Real-time monitoring of problem based SLA compared to the defined SLA for each registered complaint allocated to the field officer, thereby allowing better complaint management. · The complaint is color-coded based on their defined SLA status and problem category – Red for complaints that crossed SLA period for resolution and Green for those complaints that are within SLA. · Facility to change complaint status from 'Open' to 'On Hold' or 'WIP' or 'Close'.
47	**Decision Support System through Mobile App**
48	By virtue of their duty, officials in AITL are expected to move around. They demand a reliable and accurate system for taking necessary decisions in real-time mode. Through AITL portal and mobile app, senior officers shall have a capability which provides real-time dashboard of operational parameters and highlights areas of concern. It also provides contact book of entire team, that immensely help senior officer in reaching out to the right officer instantly for taking appropriate and timely decisions.
49	**Online Services**
50	Grievance Registration.
51	Grievance Search.
52	Grievance acknowledgement.
53	Grievance resolution intimation.
54	**Masters & Initial Setup**
55	Complaint Type, Sub-types, Capture of Mobile No. of citizen.
56	Mapping of Designation / Roles to Complaint Sub-type.
57	Integration of Complaint Type / Sub-type with Departmental Modules.
58	Citizen Charter for each Complaint Type (Define duration of complaint redressal & escalation path in case of no redressal).
59	**Complaint Acceptance**
60	Complaint Acceptance through Citizen Facilitation Centres / Internet / Kiosks.

61	Facility to make Resident ID compulsory for certain complaints. Facility to check dues for allowing certain complaints.
62	SMS alert to concerned employee.
63	Facility to mention the action on complaint.
64	Automatic escalation of Complaints (beyond stipulated time frame).
65	SMS alert to citizen upon Action Taken Report.
66	Facility to accept citizen feedback on the Administration Action.
67	Facility to mark a complaint as fake / invalid (for not considering it in the normal reports or report for Project System).
68	**MIS**
69	Exhaustive reports shall be generated by the system for officers at various levels for effective decision making and period review of operations. Some of the MIS reports generated from the system will be as follows: · Department Wise AITL Location wise SLA Summary (Within SLA v/s Beyond SLA) · Registration Mode wise Complaint Summary · Department wise AURIC Location wise Average TAT Report · AURIC Location wise TAT · Detailed Complaint Report with FCR · Detailed Complaint Report without FCR · SLA Wise Ageing Details · Complaint Status Summary · Complaint Transfer Summary · Department wise weekly status report – Registered, Closed, Within SLA / Beyond SLA · Reopen Complaint as on Date with complaint status · Registered v/s Closed Complaints · Missed call Detail · AITL Employee Reporting Hierarchy · List of on hold complaints · Operator wise Login-Logout Report · List of mobile numbers from which complaints registered · List of complaints Transferred · AITL Standard SLA v/s Actual TAT report · Real-time statistical reports for AITL locations/departments is made available to senior officers on web based as well as on based mobile applications.
70	Pendency reports (complaint-wise / Dept.-wise).
71	Top Performers / Least Performers.
72	Analysis of Grievances.

5.10 Sensors

Smart environment sensors will gather data about pollution, ambient conditions (temperature and humidity), levels of gases in the city (pollution) and any other events on an hourly and subsequently daily basis. It is for information of citizens and administration to further take appropriate actions during the daily course / cause of any event.

a. The environment sensors should be have the following capabilities:
   - They should be ruggedized enough to be deployed in open air areas, on streets and parks
   - They should be able to read and report at least the following parameters: Temperature, Humidity, Ambient Light, Sound, Pressure, CO, NO2, O3, SO2 and compulsorily PM 2.5 and PM 10.

b. Smart environment sensors will inform and enable citizens and administrators to keep a check on their endeavors which impact environment and enable the city to take remedial action if required.

c. These environmental sensors can also be connected via 3G or 4G wireless network or WiFi networks. It is not mandatory to connect all sensors via MPLS fiber network.

d. The data should be collected in a software platform that allows third party software applications to read that data. Various environment sensors shall sense the prevailing environment conditions and send the data to the integrated control system where real time data resides and the same shall be made available to various other departments and applications for decision making. It is preferred if the platform also includes intelligent analytical engines that makes information meaningful to all stakeholders and helps ease decision-making.

e. Successful bidder can also make use of the ***Nearby Variable Messaging Displays*** wherever possible (need to be finalized post detailed survey of locations).

f. The sensor management platform should allow the configuration of the sensor to the network and also location details etc.

g. The sensors should be able to be managed remotely. This includes sensors being updated with calibration parameters, software upgrades. Sensors must also provide updates and detect faults with self-diagnosis functionality.

h. Apart from information provision, the sensors must ensure data is transmitted securely and have security measures from sensors to the software platform. It must also ensure tamper alerts are provided in cases of vandalism, security breaches, etc.

5.11 Camera Type 1- Panoramic with IP66 Outdoor enclosure

Table 14: 4.23Camera Type 1- Panoramic with IP66 Outdoor enclosure

S.No.	Camera Characteristics	Desciption
1	General Requirements	Multi-view layouts: 360° surround views and multi region client dewarped views, with Digital PTZ functionality.
2	General Requirements	The camera should be based upon standard components and proven technology using open and published protocols. Device functionality can be extended by installing and running applications directly on the camera, for example SIP client, video analytics, audio analytics, etc.

S.No.	Camera Characteristics	Desciption
3	Image Sensor	1/2.5″ Progressive, Sensor 5 MP
4	Lens Specs	Focal length: 1.5mm, Maximum aperture: F2.8
5	Resolution	Active Pixels 1920(w) x 1920(h)
6	Minimum illumination	Color mode: 0.6 lux Black/White mode: 0.01 lux, 0 lux with illuminator active, The infrared illuminator should light an area up to 33 feet (min 10 meters) away
9	Day/Night	Automatic, Manual, Scheduled
10	Image Compression	H.264 and Motion JPEG
11	Frame Rate	25fps for PAL mode
12	Local Storage support	32GB
13	Streaming	The camera shall be able to setup and stream out two (2) stream profiles.
14	White Balance	Auto / Manual
15	Wide dynamic range	70dB
16	Shutter Speed	1/5 second to 1/32,000 second
17	Ethernet	10/100/ Base-T (RJ45)
18	Field of view	180° horizontal, 180° vertical, 180° diagonal
19	Protocols	TCP/IP, DHCP, HTTP, HTTPS, NTP, RTP, RTSP, SMTP, SSL/TLS, SRTP, CDP, Bonjour, SNMP, and SSH
20	Power Supply	Max 23W consumed with a PoE+ (802.3at-compliant) source
21	Security	Security Password protection, IP address filtering
22	Miscellaneous	Housing IK10 and IP66-rated
23		Detection of camera tampering and Detection of Motion should be possible using camera
24		Should support edge based audio analytics.
25		ONVIF 2.X' or 'S' compliant. Certifications: UL, EN, FCC, CE

S.No.	Camera Characteristics	Desciption
26	Certifications Safety	UL60950-1 second edition CSA22.2-No.60950-1 IEC/EN60950-1 second edition
27	Certifications EMC-Requirements	CISPR22 Class B ICES-003 EN50121-4 EN50155 EN50130-4 EN55022 EN55024 EN61000-3-2/-3-3 VCCI Class B KN22 Class B KN24 CISPR 24 AS/NZS CISPR 22 FCC CFR Title 47 Part 15 Subpart B

5.12 Camera Type 2 - Surveillance Cameras - Outdoor, HD Fixed Camera with IR

Table 15: 4.24Camera Type 2 - Surveillance Cameras - Outdoor, HD Fixed Camera with IR

S.NO.	Camera Characteristics	Description
1	Requirement Overview	High-definition Bullet outdoor IP Camera, integrated infrared illuminator
2	Sensor Type	1/2.7" Progressive Scan CMOS
3	Max Resolution	1920x1080 @ 30fps
4	Dynamic Range	Should support
5	IR	Yes, Infrared illuminator with illumination capabilities up to 30 Mtrs
6	Lens/Iris	3.6 to 9 mm or better with Motorized Zoom Lens
7	Field of View	37.5°-95.98° Horizontal
8		21.6°-53.8° Vertical
9		42.6°-109.46° Diagonal
10	Audio I/O	The camera supports full-duplex audio and options for half-duplex operation, Camera should allows the connection of an optional Y cable or mini cable with BNC connector. Camera should allow connecting a video monitor to the mini cable with BNC connector. Camera should have option to connect an external microphone. Camera should have Focus assist button, which will use in conjunction with an analog display to fine-tune the IP camera focus at local site. Audio in x 1

S.NO.	Camera Characteristics	Description
11	Digital I/O	(3.5-mm miniature jack)
12		Audio out x 1
13		(3.5-mm miniature jack)
14		DI x 1
15		DO x 1
16	Max Illumination	Color: 0.5 lux
17		B/W: 0 lux w/Illuminator Active
18	Day/Night	Automatic, manual, scheduled
19	Local Storage	Should support MicroSD -min 32 GB
20	Video Compression & Video Streaming	● Single-stream H.264 or MJPEG up to 1080p (1920 x 1080) at 30 fps ● Dual-stream H.264 and MJPEG ◦ Primary stream programmable up to 1280 x 720 at 30 fps ◦ Secondary stream programmable up to 960 x 544 at 15 fps
21	ONVIF	Should support for ONVIF 2.0 allows for standards based interoperability
22	POE and External Power	12V DC, 24V Ac and PoE- 802.3af compliant (Class 3)
23	Power Consumption (in watts)	Max 10 Watt at DC
24	Supported Protocol	Dynamic Host Control Protocol (DHCP), Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS), Network Time Protocol (NTP), Real-Time Transport Protocol (RTP), Real-Time Streaming Protocol (RTSP), Simple Mail Transfer Protocol (SMTP), Secure Sockets Layer/Transport Layer Security (SSL/TLS), TCP/IP, Secure Real-Time Transport Protocol (SRTP), Bonjour, Simple Network Management Protocol (SNMP), and Secure Shell (SSH) Protocol. Differentiated-services-code-point (DSCP) marking and class-of-service (CoS) marking
25	Environmental Certification	IIP67- and IK10-rated housing, Camera should have sun shield, wall mount bracket and waterproof Ethernet Cable form same OEM
26	Operating Temperature	40° to 122°F (-40° to 50°C)

S.NO.	Camera Characteristics	Description
27	Certifications Safety	UL60950-1 2nd edition CSA22.2-No.60950-1 IEC/EN60950-1 2nd edition IEC/EN60825
28	Certifications EMC-Requirements	CISPR22 Class B ICES-003 EN55022 EN55024 EN61000-3-2/-3-3 Class A VCCI Class B KN22 Class B KN24
29	Light sensor	Senses the level of ambient light to determine when to switch day/night mode.
30	Auto Detection & Configuration	The camera should be automatically discovered and configured when connected to VMS or Network Switch, to set the right network parameters for the video stream on the network.

5.13 Camera Type 3 -Fixed Box Cameras

Table 16: 4.25Camera Type 3 -Fixed Box Cameras

S.NO.	Camera Characteristics	Description
1	Requirement Overview	High-definition IP Box Camera for outdoor
2	Sensor Type	1/2.7" Progressive Scan CMOS with additional digital signal processor (DSP) to support complex applications such as real-time video analytics
3	Max Resolution	1920x1080 @ 30fps
4	Dynamic Range	Should support
5	Lens/Iris	3.1-8mm- P-Iris
6	Audio I/O	The camera supports full-duplex audio and options for half-duplex operation. Should support Audio compression G.711 A, Law, G.711 U, Law, G.726, Audio in x 1
7	Digital I/O	(3.5-mm miniature jack)
8		Audio out x 1
9		(3.5-mm miniature jack)
10		DI x 1

11		DO x 1
12	Max Illumination	Color: 0.3 lux
13		B/W: 0.05 lux
14	Day/Night	Automatic, manual, scheduled
15	Local Storage	Should support MicroSD -min 32 GB
16	Video Compression & Video Streaming	● Single stream H.264 or MJPEG up to 1080p (1920 x 1080) @ 30 fps ● Dual stream H.264 and MJPEG ◦ Primary stream programmable up to 1280 x 720 @ 30 fps ◦ Secondary stream programmable up to 960 x 544 @15 fps
17	ONVIF	Should support for ONVIF 2.0 allows for standards based interoperability
18	POE and External Power	12V DC, 24V Ac and PoE- 802.3af compliant (Class 3)
19	Power Consumption (in watts)	Max 10 Watt at DC
20	Supported Protocol	Dynamic Host Control Protocol (DHCP), Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS), Network Time Protocol (NTP), Real-Time Transport Protocol (RTP), Real-Time Streaming Protocol (RTSP), Simple Mail Transfer Protocol (SMTP), Secure Sockets Layer/Transport Layer Security (SSL/TLS), TCP/IP, Secure Real-Time Transport Protocol (SRTP), Bonjour, Simple Network Management Protocol (SNMP),and Secure Shell (SSH) Protocol. Differentiated-services-code-point (DSCP) marking and class-of-service (CoS) marking
21	Operating Temperature	14° to 122°F (-10° to 50°C)
22	Certifications Safety	UL60950-1 2nd edition CSA22.2-No.60950-1 IEC/EN60950-1 2nd edition IEC/EN60825
23	Certifications EMC-Requirements	CISPR22 Class B ICES-003 EN55022 EN55024 EN61000-3-2/-3-3 Class A VCCI Class B KN22 Class B KN24

24	Camera Tamper	The camera should support tamper feature when any of the following events occur and persist for a designated period: • The IP camera view is changed • The IP camera view is blocked • The IP camera view is substantially out of focus

5.14 UPS (60 minutes backup)

Table 17: UPS Specifications

S.No.	Parameter	Minimum-Specifications
1.	Capacity	Adequate capacity to cover all above IT Components at respective location
2.	Output Wave Form	Pure Sinewave
3.	Input Power Factor at Full Load	>0.90
5.	Input Voltage Range	305-475VA Cat Full Load
6.	Input Frequency	50Hz+/-3 Hz
7.	Output Voltage	400 VAC, Three Phase for over 5KVA UPS
8.	Output Frequency	50Hz+/-0.5%(Free running);+/-3%(Sync. Mode)
9.	Inverter efficiency	>90%
10.	Over All AC-AC Efficiency	>85%
11.	UPS shutdown	UPS should shut down with an alarm and indication on following conditions 1) Output over voltage 2) Output under voltage 3) Battery low 4) Inverter over load 5) Over temperature 6) Output short
12.	Battery Backup	60 minutes in full load
13.	Battery	VRLA (Valve Regulated Lead Acid) SMF (Sealed Maintenance Free) Battery

S.No.	Parameter	Minimum-Specifications
16.	Cabinet	Rack/Tower type
17.	Operating Temp	0 to 40 degrees centigrade

5.15 Data Center DR/Solution requirement

The system integrator will provide the architectural design and interior design for Command & Control Centre (CCC) and Data Centre for the space allocated by Department. Department will approve the design of the CCC & Data center. Based on the approved design the system integrator has to do the civil (flooring, false ceiling, wall paneling, creation of viewing gallery, space for video wall), electrical works, cabling.

Supply, installation and commissioning of necessary hardware, software items for setting up of CCC & DC as per scope define in the RFP.

As a part this RFP, the following IT and Non-IT equipment to be provisioned and maintained by the MSI at the Data Center site which will be given by department. The proposed Local on premises Data Center should ensure High Availability of 99.95 % up time. Redundancy has to be considered at the core / data center components level.

Bidder need to provide Backup solution for Data recovery site, Data recovery site provide by department.

5.16 Functional Requirement of City Command Center Software

The SI has to provide, deploy and configured an integrated operations and dashboard application that integrated various Smart City use cases on this platform.

Proposed Solution architecture should have combination of data normalization and City operation center software with below capabilities, data normalization software should support on-prim and cloud technology, however bidder should provide on-prim solution for this project;

The SI has to provide, deploy and configured an integrated operations and dashboard application that integrated various Smart City use cases on this platform.

Table 18: Data Center DR/Solution requirement

S.NO.	Functionality	Description
1.	Data Normalization capabilities	It is envisaged that the city will implement multiple Smart City use cases over a period of time. The potential example Smart City use cases are- • Smart Outdoor Lighting • Smart Parking

S.NO.	Functionality	Description
		• Smart Traffic Management • Smart Energy Metering • Smart Water Metering • Public Safety and Safe City Operations • Connected Public Transport • Public Wi-Fi and Urban Service Delivery over Public Wi-Fi • Kiosks for Citizen Information • Citizen Interactive Kiosks for Urban Service Delivery • Environmental Monitoring • Smart Waste Management
2.		The platform should be able to integrate with any type of sensor platform being used for the urban services irrespective of the technology used.
3.		The platform should also allow the manufacturers of the sensors to develop integrations themselves using SDKs without affecting the northbound applications and existing integration
4.		The platform should be able to normalize the data coming from different devices of same type (i.e. Different lighting sensor from different OEMs, different energy meters from different OEMs etc.) and provide secure access to that data using data API(s) to application developers.
5.		The platform should support distributed deployment of functions (workflows & policies) across city's network and compute infrastructure with centralized management and control
6.	Device Abstraction method	The platform should normalize individual device data into Things Query Language—the underlying language used to communicate among devices.
7.	GIS Map Support	System should support Esri, map box, Open street etc.

S.NO.	Functionality	Description
8.	Location engine	a) Map services and geospatial coordinates: provides the geographical coordinates of specific facilities, roads, and city infrastructure assets, as well as unmapped facilities b) Geospatial calculation: calculates distance between two, or more, locations on the map c) Location-based tracking: locates and traces devices on the map
9.	Device engine	a) Aggregation and abstraction of sensors: provides aggregation of sensors from diverse sensor cloud b) Normalization of sensor data: organizes sensor data and assigns attributes based on relations; raw data removed and passed to data engine
10.	Data and Analytics engine	a) Data archive and logging: stores data feeds from the device engine and external data sources b) Analytics: provides time-shifted or offline analytics on the archived data c) Reporting: delivers reports based on events triggered by device engine data and external notifications
11.	Service management	a) Data brokerage, ID Management: Performs service management
12.	Developer Program tools	Sensor platform OEM should provide online Developer Program tools that help City to produce new applications, and/or use solution APIs to enhance or manage existing solution free of cost. OEM should have technology labs via an online public facing web interface. These labs should be available 24X7.
13.	Authentication, Authorization	System should support standard Authentication, Authorization Performs
14.	Data plan Functionalities	Live data and visual feed from diverse sensors connected to the platform
15.	API Repository / API Guide	Normalized APIs should be available for the listed domains (Parking, Outdoor Lighting, Traffic, Environment, Urban mobility etc.) to monitor, control sensor and/or actuators functionality to enable app developers to develop apps on the platform. For example Lighting APIs: Vendor agnostic APIs to control Lighting functionality.

S.NO.	Functionality	Description
16.		Platform OEM should have published the normalized APIs in their website for the listed domains ((Parking, Outdoor Lighting, Traffic, Environment, Urban mobility etc.) to allow sensor vendors and app developers to develop their connectors / adaptors to the platform
17.		Cross collaboration APIs: Enabling contextual information and correlation across domains and verticals (Multiple vendor and Multi-sensor in future)
18.	Platform upgrade and maintenance	The OEM should be able to securely access the platform remotely for platform updates / upgrades and maintenance for the given duration
19.		Platform should be able to be deployed on a public cloud for disaster recovery
20.	Platform functionality	API management and gateway: Provides secure API lifecycle, monitoring mechanism for available APIs
21.		User and subscription management: Provides different tier of user categorization, authentication, authorization, and services based on the subscriptions
22.		Application management: Provides role-based access view to applications
23.		Enabling analytics: Time shifted and real-time data available for big data and analytics
24.		The platform should also be able to bring in other e-governance data (SCADA sytems) as i-frames in the command and control centre dashboard
25.		All of these data should be rendered / visualized on the command and control centre dashboard.
26.	Integration capabilities	This platform is expected to integrate various urban services devices at the street layer so that urban services applications can be developed on top of this platform independent of the technology that is used in the devices.
27.		Integrate devices using their APIs in to this platform. For example, if the City wants to deploy Smart Parking solution, this platform should have the ability and provision to write adaptors which interface with the parking sensors or management software of the parking sensors to collect parking events, data and alerts and notifications from the devices and their software managers.

S.NO.	Functionality	Description
28.		The platform should be able to integrate any type of parking sensor irrespective of the technology used. For example, some parking sensors might use RF technology like LoRa or ZigBee to communicate the data and events, some might use GPRS or some might use Wi-Fi. Some parking sensors might use infra-red based detection, some might use magnetic field based detection or combination of the both where as some might use a video camera to detect parking occupancy. Irrespective of the technology, the platform should be able to integrate with these devices and their software managers and provide the data from such devices in a normalized and standard based data models.
29.		The same logic and requirement applies to various other urban services devices like LED control nodes, water meters, energy meters, environmental sensors, waste bin sensors, device embedded in connected vehicles etc.
30.		Enables the City and its partners to define a standard data model for each of the urban services domains (i.e. Parking, lighting, kiosks etc.…)
31.		Enables City and/or its partners to write software adaptors based on the API(s) provided by device vendors and have the ability to control, monitor and collect the data from these street devices
32.		Provides urban services API(s) to develop operation applications for each of the Urban Services domains. For example, the lighting operator of the City should be able to develop a City Lighting management application based on the API(s) provided by the platform. This lighting application should also have the ability to access data from other domains like environment based on the access control configured in the system.
33.	Trending Service	System should provide trends in graphical representation from data sources over a period of time. Trends should allow to monitor and analyze device performance over time.
34.	Policies and Events	System should allow policy creation to set of rules that control the behavior of infrastructure items. Each policy should a set of conditions that activate the behavior it provides. System should allow Default, Time-based, Event-based and Manual override polices creation. For example, an operator might enforce a "no parking zone" policy manually to facilitate road repairs.

S.NO.	Functionality	Description
35.		System should provision to defines a set of conditions that can be used to trigger an event-based policy
36.	Notifications, Alerts and Alarms	System should generate Notification, Alert and Alarm messages that should be visible within the Dashboard and the Enforcement Officer Mobile App if required.
37.		All system messages (notifications, alerts and alarms) should always visible from the Notifications view, which provides controls that operator can use to sort and filter the messages that it displays.
38.		Systems should deliver message to a set of subscribers. The Notification service should support min two types of notification methods – Email notification and Short Messaging Service (SMS) notification.
39.	Users and roles	Users access for various tasks, such as adding new locations, configuring new devices, managing adapters, and so on. However, not all users can perform all tasks. Each user should be associated with one or more roles and each role is assigned a certain set of permissions.
40.		These roles and permissions define the tasks that a user can perform. Additionally, system should assign one or more locations to each role so that the user can perform tasks at the assigned locations only.
41.		Roles and permissions define the tasks that a user can perform, such as adding users, viewing location details, exporting devices, generating reports, and so on. Each user should be associated with one or more roles and each role has an assigned set of permissions.
42.		The platform should allow different roles to be created and assign those roles to different access control policies.
43.		Since this platform is being used for managing Cities, the platform should also allow association of users and locations. For example, the platform should allow creation of locations in the system which correspond to various physical locations in the city and allow the admin to associate different users to different locations with the intent that each user can control only services for a location for which has been given access.
44.		System should support LDAP to be used as an additional data store for user management and authentication.

S.NO.	Functionality	Description
45.	Service Catalog Management	The Service catalog management module should allow to categorize the externalized and non-externalized services into logical groups by creating the service catalogs. In addition, system should allow manage the service catalogs by adding, modifying, or deleting the catalog details.
46.	Reports	The platform should have capability to provide access to real time data and historical data from various connected devices for reporting and analytics.
47.		System should allow dashboard to generate reports and have provision to add reports in favorites list
48.	Data Security	The access to data should be highly secure and efficient.
49.		Access to the platform API(s) should be secured using API keys.
50.		Software should support security standards: OAuth 2.0, HTTPS over SSL, and key management help protect the data across all domains.
51.		Should support security features built for many of its components by using HTTPS, TLS for all its public facing API implementations. For deployment where CCC Software API(s) exposed to application eco system, API Management, API security features and API Key management functions are required.
52.	Global Market Presence	Smart city suppliers should be adaptable to the emerging needs of cities. Suppliers should develop offerings that meet the growing interest in urban Internet of Things (IoT) applications, big data solutions, and the transformation in city approaches to energy policy, urban mobility, and city resilience.
53.		The Smart City supplier should belong Top 5 quadrant of the "Navigant Research Leaderboard Report For Smart City Supplier".
54.	Standard Operating Procedure	Command & Control Center should provide for authoring and invoking un-limited number of configurable and customizable standard operating procedures through graphical, easy to use tooling interface.
55.		Standard Operating Procedures should be established, approved sets of actions considered to be the best practices for responding to a situation or carrying out an operation.

S.NO.	Functionality	Description
56.		The users should be able to edit the SOP, including adding, editing, or deleting the activities.
57.		The users should be able to also add comments to or stop the SOP (prior to completion).
58.		There should be provision for automatically logging the actions, changes, and commentary for the SOP and its activities, so that an electronic record is available for after-action review.
59.		The CCC platform should have the capability to bring in multiple stake holders automatically into a common collaboration platform like persistent chat rooms and virtual meeting rooms in response to a SOP defined to handle a particular event.
60.		The CCC platform should provide an ability to bring multiple stake holders on to a common voice conference call as a standard operating procedure in response configured events
61.		The stake holders can be on various types of devices like computer, smart phones, tablets or normal phones
62.		The operator should also have ability create these collaboration spaces like virtual meeting rooms or chat groups manually.
63.		The SOP Tool should have capability to define the following activity types:
64.		Manual Activity - An activity that is done manually by the owner and provide details in the description field.
65.		Automation Activity - An activity that initiates and tracks a particular work order and select a predefined work order from the list.
66.		If-Then-Else Activity - A conditional activity that allows branching based on specific criteria. Either enter or select values for Then and Else.
67.		Notification Activity - An activity that displays a notification window that contains an email template for the activity owner to complete, and then sends an email notification.
68.		SOP Activity - An activity that launches another standard operating procedure.

S.NO.	Functionality	Description
69.	Enterprise resource planning (ERP) integration	System should allow integration of business process in ERP workflows like property tax collection etc.
70.		System should allow ERP data visualization at city dashboard
71.		The platform should have the capability to retrieve data directly from ERP systems. The APIs should be RESTful and return the data in JSON format.
72.		The platform should also have the capability to read data directly from a set of databases (HBase, MongoDB, Oracle, Cassandra, MySQL, Impala). To connect to any of the databases information on how to connect should be provided.
73.		System should be able to read data from flat CSV files.
74.	Separation of Developmental & Production environment	Platform should have development, QA (test), and production environments and MUST be physically (and or logically) separated to reduce the risks of unauthorized or unintentional access to production data or assets
75.		Platform should support on the fly deployment of Sensors. Platform shall have the ability to add / remove sensors including new vendor types without a need for shutdown.
76.	Analytics Engine	Analytics Engine should be an artificial intelligence-based smart city analytics platform module to maximize business value through advanced machine learning capabilities. The machine learning capabilities aid in automating policies that result in better asset and infrastructure management.
77.		The solution should be flexible to integrate with other city and government software applications.
78.		Analytics Engine module should have below intelligence capabilities; a) Advanced Predictive Analytics should be part of the solution. b) The solution should be flexible to integrate with other city and government software applications c) The solution should be able to predict insights consuming data from city infrastructure viz., Traffic, Parking, Lighting etc.

S.NO.	Functionality	Description
		d) The solution should have predictions with measurable accuracy of at least > 70% e) The solution should be able to predict and integrate with Smart City solutions helping in driving operational policies creation. f) The solution should be robust, secure and scalable. g) The solution should have a visualization platform to view historic analytics
79.		The application should enable the customers to discover, compare, and correlate data across heterogeneous data sources to unravel the patterns that are previously hidden. At a broader level, when you work with the application, system do the following tasks: a) Connect to a variety of data sources b) Analyze the result set c) Visualize the results d) Predict outcomes
80.		Analytics Engine should support multiple Data Sources. Min below standard data sources should be supported from day 1 – CSV, TSV, MS Excel , NoSQL, RDBMS
81.		Analytics Engine should provide analysis of data from a selected data source(s). Analysis enables to define arithmetic and aggregation operations that result in the desired output. Analytics engine should provide capability to check analysis with multiple predictive algorithms
82.	Analytics Engine Visualizations	Analytics Engine should provide visualizations dashboard. In the visualization workspace it should allow to change visual attributes of a graph. User should not be allowed to alter the graph/visualization definition. In the visualizations workspace, user should able to do the following operations:

S.NO.	Functionality	Description
		a) Change the graph/visualization type b) Print the graph c) Export the graph d) Narrow down on the value ranges e) Toggle the axis labels f) Integrate with other 3rd party applications seamlessly
83.	Export Formats	System should allow export the analysis into min following formats: g) XML/JSON h) Excel i) PDF j) CSV
84.	Infrastructure as a Service support	System should provider should support following security features I. User encrypted storage volumes. II. Restrict inbound access from public network only on secure ports via DMZ proxy instances III. SSH access is restricted with secure keypair and from designated jumphosts alone. IV. User management and authentication is tied to Corporate SSO. V. Platform should have appropriate technical controls in place to prevent attacks that target virtual infrastructure VI. Platform should have appropriate controls in place to detect source code security defects, functionalities for any outsourced software development activities from suppliers, open source libraries
85.	Scaling, Capacity Provisioning parameters	I. Platform should be scalable and should support capacity provisioning additional CPU, RAM to existing VM, Cloud infrastructure

S.NO.	Functionality	Description
		II. Platform should have tools to monitors the healithiness of the individual tenants and status of CPU, Memory performance III. The platform shall send alerts to the user once it exceeds certain limits in terms of CPU and Memory performance
86.	Field Responder Mobile Apps	Provide integrated Mobile Application for Android and Windows for capturing real-time information from the field response team using Mobile- Standard Operating Procedure.

S.NO.	Functionality	Description
87.	Data Normalization capabilities	It is envisaged that the city will implement multiple Smart City use cases over a period of time. The potential example Smart City use cases are- • Smart Outdoor Lighting • Smart Parking • Smart Traffic Management • Smart Energy Metering • Smart Water Metering • Public Safety and Safe City Operations • Connected Public Transport • Public Wi-Fi and Urban Service Delivery over Public Wi-Fi • Kiosks for Citizen Information • Citizen Interactive Kiosks for Urban Service Delivery • Environmental Monitoring • Smart Waste Management
88.		The platform should be able to integrate with any type of sensor platform being used for the urban services irrespective of the technology used.

S.NO.	Functionality	Description
89.		The platform should also allow the manufacturers of the sensors to develop integrations themselves using SDKs without affecting the northbound applications and existing integration
90.		The platform should be able to normalize the data coming from different devices of same type (i.e. Different lighting sensor from different OEMs, different energy meters from different OEMs etc.) and provide secure access to that data using data API(s) to application developers.
91.		The platform should support distributed deployment of functions (workflows & policies) across city's network and compute infrastructure with centralized management and control
92.	GIS Map Support	System should support Esri, map box, Open street etc.
93.	Location engine	d) Map services and geospatial coordinates: provides the geographical coordinates of specific facilities, roads, and city infrastructure assets, as well as unmapped facilities e) Geospatial calculation: calculates distance between two, or more, locations on the map f) Location-based tracking: locates and traces devices on the map
94.	Device engine	c) Aggregation and abstraction of sensors: provides aggregation of sensors from diverse sensor cloud d) Normalization of sensor data: organizes sensor data and assigns attributes based on relations; raw data removed and passed to data engine
95.	Data and Analytics engine	d) Data archive and logging: stores data feeds from the device engine and external data sources e) Analytics: provides time-shifted or offline analytics on the archived data f) Reporting: delivers reports based on events triggered by device engine data and external notifications
96.	Service management	b) Data brokerage, ID Management: Performs service management
97.	Developer Program tools	Sensor platform OEM should provide online Developer Program tools that help City to produce new applications, and/or use solution APIs to enhance or manage existing solution free of cost. OEM should have technology labs via an online public facing web interface. These labs should be available 24X7.

S.NO.	Functionality	Description
98.	Authentication, Authorization	System should support standard Authentication, Authorization Performs
99.	Data plan Functionalities	Live data and visual feed from diverse sensors connected to the platform
100.	API Repository / API Guide	Normalized APIs should be available for the listed domains (Parking, Outdoor Lighting, Traffic, Environment, Urban mobility etc.) to monitor, control sensor and/or actuators functionality to enable app developers to develop apps on the platform. For example Lighting APIs: Vendor agnostic APIs to control Lighting functionality.
101.		Platform OEM should have published the normalized APIs in their website for the listed domains ((Parking, Outdoor Lighting, Traffic, Environment, Urban mobility etc.) to allow sensor vendors and app developers to develop their connectors / adaptors to the platform
102.		Cross collaboration APIs: Enabling contextual information and correlation across domains and verticals (Multiple vendor and Multi-sensor in future)
103.	Platform upgrade and maintenance	The OEM should be able to securely access the platform remotely for platform updates / upgrades and maintenance for the given duration
104.		Platform should be able to be deployed on a public cloud for disaster recovery
105.	Platform functionality	API management and gateway: Provides secure API lifecycle, monitoring mechanism for available APIs
106.		User and subscription management: Provides different tier of user categorization, authentication, authorization, and services based on the subscriptions
107.		Application management: Provides role-based access view to applications
108.		Enabling analytics: Time shifted and real-time data available for big data and analytics
109.		The platform should also be able to bring in other e-governance data (SCADA systems) as i-frames in the command and control centre dashboard
110.		All of these data should be rendered / visualized on the command and control centre dashboard.

S.NO.	Functionality	Description
111.	Integration capabilities	This platform is expected to integrate various urban services devices at the street layer so that urban services applications can be developed on top of this platform independent of the technology that is used in the devices.
112.		Integrate devices using their APIs in to this platform. For example, if the City wants to deploy Smart Parking solution, this platform should have the ability and provision to write adaptors which interface with the parking sensors or management software of the parking sensors to collect parking events, data and alerts and notifications from the devices and their software managers.
113.		The platform should be able to integrate any type of parking sensor irrespective of the technology used. For example, some parking sensors might use RF technology like LoRa or ZigBee to communicate the data and events, some might use GPRS or some might use Wi-Fi. Some parking sensors might use infra-red based detection, some might use magnetic field based detection or combination of the both where as some might use a video camera to detect parking occupancy. Irrespective of the technology, the platform should be able to integrate with these devices and their software managers and provide the data from such devices in a normalized and standard based data models.
114.		The same logic and requirement applies to various other urban services devices like LED control nodes, water meters, energy meters, environmental sensors, waste bin sensors, device embedded in connected vehicles etc.
115.		Enables the City and its partners to define a standard data model for each of the urban services domains (i.e. Parking, lighting, kiosks etc.…)
116.		Enables City and/or its partners to write software adaptors based on the API(s) provided by device vendors and have the ability to control, monitor and collect the data from these street devices
117.		Provides urban services API(s) to develop operation applications for each of the Urban Services domains. For example, the lighting operator of the City should be able to develop a City Lighting management application based on the API(s) provided by the platform. This lighting application should also have the ability to access data from other domains like environment based on the access control configured in the system.

S.NO.	Functionality	Description
118.	Trending Service	System should provide trends in graphical representation from data sources over a period of time. Trends should allow to monitor and analyze device performance over time.
119.	Policies and Events	System should allow policy creation to set of rules that control the behavior of infrastructure items. Each policy should a set of conditions that activate the behavior it provides. System should allow Default, Time-based, Event-based and Manual override polices creation. For example, an operator might enforce a "no parking zone" policy manually to facilitate road repairs.
120.		System should provision to defines a set of conditions that can be used to trigger an event-based policy
121.	Notifications, Alerts and Alarms	System should generate Notification, Alert and Alarm messages that should be visible within the Dashboard and the Enforcement Officer Mobile App if required.
122.		All system messages (notifications, alerts and alarms) should always visible from the Notifications view, which provides controls that operator can use to sort and filter the messages that it displays.
123.		Systems should deliver message to a set of subscribers. The Notification service should support min two types of notification methods – Email notification and Short Messaging Service (SMS) notification.
124.	Users and roles	Users access the perform various tasks, such as adding new locations, configuring new devices, managing adapters, and so on. However, not all users can perform all tasks. Each user should be associated with one or more roles and each role is assigned a certain set of permissions.
125.		These roles and permissions define the tasks that a user can perform. Additionally, system should assign one or more locations to each role so that the user can perform tasks at the assigned locations only.
126.		Roles and permissions define the tasks that a user can perform, such as adding users, viewing location details, exporting devices, generating reports, and so on. Each user should be associated with one or more roles and each role has an assigned set of permissions.
127.		The platform should allow different roles to be created and assign those roles to different access control policies.

S.NO.	Functionality	Description
128.		Since this platform is being used for managing Cities, the platform should also allow association of users and locations. For example, the platform should allow creation of locations in the system which correspond to various physical locations in the city and allow the admin to associate different users to different locations with the intent that each user can control only services for a location for which has been given access.
129.		System should support LDAP to be used as an additional data store for user management and authentication.
130.	Service Catalog Management	The Service catalog management module should allow to categorize the externalized and non-externalized services into logical groups by creating the service catalogs. In addition, system should allow manage the service catalogs by adding, modifying, or deleting the catalog details.
131.	Reports	The platform should have capability to provide access to real time data and historical data from various connected devices for reporting and analytics.
132.		System should allow dashboard to generate reports and have provision to add reports in favorites list
133.	Data Security	The access to data should be highly secure and efficient.
134.		Access to the platform API(s) should be secured using API keys.
135.		Software should support security standards: OAuth 2.0, HTTPS over SSL, and key management help protect the data across all domains.
136.	Global Market Presence	Smart city suppliers should be adaptable to the emerging needs of cities. Suppliers should develop offerings that meet the growing interest in urban Internet of Things (IoT) applications, big data solutions, and the transformation in city approaches to energy policy, urban mobility, and city resilience.
137.		The Smart City supplier should be industry leader and belong to leader quadrant of the "Navigant Research Leaderboard Report For Smart City Supplier".
138.	Standard Operating Procedure	Command & Control Center should provide for authoring and invoking un-limited number of configurable and customizable standard operating procedures through graphical, easy to use tooling interface.

S.NO.	Functionality	Description
139.		Standard Operating Procedures should be established, approved sets of actions considered to be the best practices for responding to a situation or carrying out an operation.
140.		The users should be able to edit the SOP, including adding, editing, or deleting the activities.
141.		The users should be able to also add comments to or stop the SOP (prior to completion).
142.		There should be provision for automatically logging the actions, changes, and commentary for the SOP and its activities, so that an electronic record is available for after-action review.
143.		The CCC platform should have the capability to bring in multiple stake holders automatically into a common collaboration platform like persistent chat rooms and virtual meeting rooms in response to a SOP defined to handle a particular event.
144.		The CCC platform should provide an ability to bring multiple stake holders on to a common voice conference call as a standard operating procedure in response configured events
145.		The stake holders can be on various types of devices like computer, smart phones, tablets or normal phones
146.		The operator should also have ability create these collaboration spaces like virtual meeting rooms or chat groups manually.
147.		The SOP Tool should have capability to define the following activity types:
148.		Manual Activity - An activity that is done manually by the owner and provide details in the description field.
149.		Automation Activity - An activity that initiates and tracks a particular work order and select a predefined work order from the list.
150.		If-Then-Else Activity - A conditional activity that allows branching based on specific criteria. Either enter or select values for Then and Else.
151.		Notification Activity - An activity that displays a notification window that contains an email template for the activity owner to complete, and then sends an email notification.
152.		SOP Activity - An activity that launches another standard operating procedure.

S.NO.	Functionality	Description
153.	Enterprise resource planning (ERP) integration	System should allow integration of business process in ERP workflows like property tax collection etc.
154.		System should allow ERP data visualization at city dashboard
155.		The platform should have the capability to retrieve data directly from ERP systems. The APIs should be RESTful and return the data in JSON format.
156.		The platform should also have the capability to read data directly from a set of databases (HBase, MongoDB, Oracle, Cassandra, MySQL, Impala). To connect to any of the databases information on how to connect should be provided.
157.		System should be able to read data from flat CSV files.
158.	Analytics Engine	Analytics Engine should be an artificial intelligence-based smart city analytics platform module to maximize business value through advanced machine learning capabilities. The machine learning capabilities aid in automating policies that result in better asset and infrastructure management.
159.		The solution should be flexible to integrate with other city and government software applications.
160.		Analytics Engine module should have below intelligence capabilities; h) Advanced Predictive Analytics should be part of the solution. i) The solution should be flexible to integrate with other city and government software applications j) The solution should be able to predict insights consuming data from city infrastructure viz., Traffic, Parking, Lighting etc. k) The solution should have predictions with measurable accuracy of at least > 70% l) The solution should be able to predict and integrate with Smart City solutions helping in driving operational policies creation. m) The solution should be robust, secure and scalable. n) The solution should have a visualization platform to view historic analytics

S.NO.	Functionality	Description
161.		The application should enable the customers to discover, compare, and correlate data across heterogeneous data sources to unravel the patterns that are previously hidden. At a broader level, when you work with the application, system do the following tasks: e) Connect to a variety of data sources f) Analyze the result set g) Visualize the results h) Predict outcomes
162.		Analytics Engine should support multiple Data Sources. Min below standard data sources should be supported from day 1 – CSV, TSV, MS Excel , NoSQL, RDBMS
163.		Analytics Engine should provide analysis of data from a selected data source(s). Analysis enables to define arithmetic and aggregation operations that result in the desired output. Analytics engine should provide capability to check analysis with multiple predictive algorithms
164.	Analytics Engine Visualizations	Analytics Engine should provide visualizations dashboard. In the visualization workspace it should allow to change visual attributes of a graph. User should not be allowed to alter the graph/visualization definition. In the visualizations workspace, user should able to do the following operations: k) Change the graph/visualization type l) Print the graph m) Export the graph n) Narrow down on the value ranges o) Toggle the axis labels p) Integrate with other 3rd party applications seamlessly
165.	Export Formats	System should allow export the analysis into min following formats:

S.NO.	Functionality	Description
		q) XML/JSON r) Excel s) PDF t) CSV
166.	Field Responder Mobile Apps	Provide integrated Mobile Application for Android and Windows for capturing real-time information from the field response team using Mobile- Standard Operating Procedure.
167.	Integration Services for Current Phase	Integration Services with WiFi Hotspots for croud Monitoring (Day 1) Integration Services with e-Governance Solution (Day 1) Integration Services with Environmental Monitoring (Day 1) Integration Services with Public Safety and Safe City Operations (Day 1)

5.17 Integration Scope with Command Control Centre

Table 19: Integration Scope with Command Control Centre

S.No.	Solution	Minimum Integration Scope
		a) CCC Solution Exposes device control and data using a standardized API for third-party application developer ecosystem in a vendor-agnostic way. b) Consolidates all city infrastructure assets onto a single operations platform. c) Collects, stores, and provides access to data generated from "Connected" city infrastructure (through the digital platform) assets using common data models. d) The extensible platform allows Customer to start small scale and then add solutions as needed. e) Offers rapid, reliable flexible deployment f) Offers greater trust and security with security standards. g) Reporting (Data presentation)- Data can be reported for city modules, functionalities, and major performance indicators. h) Integration with biometric attendance. Example reports include: • Parking occupancy, violations, and revenue • Lighting-energy consumption and intensity • Urban mobility (sizes of crowds, dwell time, traffic density, and speed) • Trends in the air quality index (AQI) and environmental pollutants such as carbon dioxide, carbon monoxide, and nitric oxide and nitrogen dioxide

S.No.	Solution	Minimum Integration Scope
1)	Smart LED Street Lights	i) The CCC should aggregate various data feeds from light sensors and systems further process information out of these data feeds to provide interface /dashboards for generating alert and notifications in real time. j) Provide single dashboard of various brand of lighting solution. k) CCC should support lighting control like diming, switch on/off, group control etc. l) CCC should provide reports of various brand of lighting solution. m) Integration with GIS map n) Existing ~ 34,000 Smart Lights project is in process of deployment in city, which will be controlled by 250 (approx.) lighting gateway. Bidder need to integrate with available feature set on/off, dimming etc. Existing vendor will provide required API for integration.
2)	RTS- Right to services	Bidder need to integrate with RTS system, which will have 15 services module like Property Tax module, Birth, Death services etc. should be integrated into CCC via web services (REST or SOAP) a) The data exchange format should be JSON/XML b) CCC uses an Adapter(WSO2) for consuming the web services from Property Tax application c) CCC Integration Engine stores authentication and other historic data for generating reports d) CCC initially makes call to get the authentication tokens for calling web services
3)	CCTV	a) Integrates with new cameras. Should support multiple video sources from multiple locations. Platform should have no limitation in displaying the number of CCTV video sources b) Integrate and assess inputs from different sources such as CCTV, Video Analytics, and sensors further to assist with actionable intelligence. c) Should use dynamic channel coverage specifically for video stream function for efficient bandwidth usage for multiple Remote Control center d) Display module should have capability to control multi-screened display wall in sync with operator console e) Should support Fixed type and PTZ camera. Control PTZ function from the screen to control the camera But with changing tile configuration each camera should be viewed with much lower resolution. f) The system should dynamically reduce the bit rate and bandwidth for each stream based on the viewing resolution at the remote location. g) Integration with GIS map

S.No.	Solution	Minimum Integration Scope
4)	Public Wi-Fi	a) CCC should integrate with Wi-Fi solution and project real time user information on city dashboard b) Integration with GIS map
5)	Citizen Interactive Kiosks for Urban Service Delivery	a) Interface with Citizen Interactive Kiosks for multi-services Urban Service. b) Provide APIs for integration of citizen services c) Integration with GIS map
6)	Environmental Monitoring (sensor based)	a) Monitor key inputs from city environmental sensors like Temperature, Humidity, CO, CO_2, NO_2, SO_2, PM_{10}, $PM_{2.5}$, b) Create awareness within the city based on dynamic inputs received from sensors and display output to various interfaces including city application, multi-services c) Integration with GIS map
7)	Command Centre Platform sensor integration support	Command Centre Platform should provide min activation license along with integration services for 100,000 sensors from day1.
8)	GIS Map	Bidder need to integrate with existing GIS map for GIS services.

5.18 Video Management Software

Table 20:Video Management Software

S.NO.	Characteristics and Description
1	**General Video Management System requirement**
2	This organization requires an integrated security solution that includes a command and control style operator console; a Linux-based video management software system, standard and high definition IP-based cameras, and system should meet the following requirements.
3	The Video Surveillance System is intended to effectively monitor all the critical operational areas of the locations & fully cover all the access points. The broad objectives of the Video Management System are as follows:
4	a) Access points monitoring with Motion Detection Alarms
5	b) Enhancement of operational control by covering critical areas
6	c) Recording of camera outputs for analyzing critical events

S.NO.	Characteristics and Description
7	The Video Surveillance System is required to ensure effective Security & surveillance of an area as well as create a tamper proof record for post event analysis. The Surveillance System shall provide an on-line display of video images on monitors at local security control room & also at any other place as defined for large locations as per requirement.
8	It should facilitate viewing of live and recorded images and controlling of all cameras by authorized users.
9	**VMS shall include, as a minimum, the following features/ functions/ specifications;**
10	a) The surveillance system shall provide a scalable and reliable platform to enable customized, network-based surveillance applications.
11	b) The surveillance system shall be open standard supporting multiple vendor IP cameras and encoder manufacturers within the same system. The system shall support integration of ONVIF compliant cameras.
12	c) The system shall support digital pan-tilt-zoom on live video. PTZ cameras should allow operators to use PTZ controls to zoom to a specific region in the viewing pane. Operators should select part of the full image and perform the PTZ controls within that region.
13	d) The surveillance system viewing system should be in thick client for local viewing and thin client through http browser for remote viewing. Both thin and thick client shall provide the capability of viewing single or multiple live and archive cameras, control PTZ camera.
14	e) VMS Review Player should support stand-alone Windows utility that plays video archive clips without a browser. The Review Player should also support MP4 files into a tamper-proof MPX (tamper proof MP4 file formats) formats. MPX file should include a password that is entered when the file is created. Application should ask the password to open and view the video file.
15	f) VMS application should mobile application for Android & Apple devices such as the iPad and iPhone. App features should include recorded video playback, thumbnail video preview, and user profiles that allow multiple users to share a single device.
16	g) The proposed surveillance system can be supported by the existing network infrastructure
17	h) The System shall support the scalability of additional camera installation beyond the originally planned capacity. One single Video Management system shall be expandable to 10,000 cameras.
18	i) The proposed video management system shall support deploying the software on Virtual servers, thus minimizing the hardware foot print for the project.
19	j) The system shall have capability to stream video at remote sites by optimizing the bandwidth on WAN.

S.NO.	Characteristics and Description
20	k) The System should support automatic discovery and configuration, when any camera connect to network, the switch should recognizes the camera as a video endpoint, and then uses Smart Port macros to set the right network parameters for the video stream on the network.
21	l) The system should allow users to access video streams from remote locations that have limited outbound bandwidth. The video should be delivered to multiple users without placing additional load on the remote locations.
22	m) The System should support Maps integration in future with below features
23	i. Adding Image Layers to the location map.
24	ii. Define the location map for each location.
25	iii. Add cameras to the map images.
26	iv. Add image layers to the map.
27	v. Add a Maps Server
28	vi. System should support raster format images of jpeg/jpg and png file and Vector (shape files)
29	Video Surveillance Storage System – The video surveillance storage system should support multiple options to store video. Servers, Direct Attached, shall augment server internal storage. The video surveillance storage system shall store video in loops, one-time archives, or event clips triggered by alarm systems. It shall support for RAID 6 storage.
30	The system shall provide for integration with other software applications through an open and published Application Programming Interface (API). Such applications shall include, but not be limited to, access control, video analytics, and other alarm and sensor inputs.
31	The system should ensure that once recorded, the video cannot be altered; ensuring the audit trail is intact for evidential purposes.
32	All camera recordings shall have camera ID and location or area of recording and shall be programmable by the system administrator with user ID and password.
33	System shall support camera template to define the resolution, frame rate, recording duration, and then apply to a group of cameras. The modification of the template will be reflected to all the cameras under the template.
34	The system shall supports Bulk Action to allow to search and perform administration activities on multiple camera.
35	The system shall support Bulk import of cameras from file such as excel/.csv, or other standard file format. The files shall include camera name, IP address, server, template, location, camera username and password

S.NO.	Characteristics and Description
36	The System should support LDAP (Lightweight Directory Access Protocol) server
37	**VMS System**
38	VMS System should have below application/ Console;
39	***VMS Server Management Console***
40	VMS Server Management Console should use by system administrators to perform infrequent administration tasks on a single physical or virtual machine. For example, use the Management Console to complete the initial server Setup Wizard, monitor system logs and resources, troubleshoot hardware and system software issues, and gather information about the installed hardware and software components.
41	The VMS Server Management Console user interface should available for each instance of system software installed on either a physical server or as a virtual machine.
42	VMS Server Management systems should support network time protocol (NTP) on server, which automatically sets the server time and date.
43	VMS Server Management Console should support configurable in a high availability (HA) arrangement that should allows a primary server to be paired with additional Failover, Redundant, or Long Term Storage Media Server. These HA servers should support the primary server with hot standby, redundant stream storage and playback, and long term recording storage to help ensure that functionality and recordings are not lost if the primary server goes offline.
44	***VMS Operations Management Console***
45	The VMS Operations Management Console should have browser-based configuration and administration tool used to manage the devices, video streams, archives, and policies for Video Management System deployment.
46	The VMS Operations Management Console should have below features ;
47	Manage physical devices - Add, configure and monitor the cameras, servers, and encoders that provide live and recorded video.
48	Manage server services - Configure, enable or disable server services, such as the recording servers that manage video playback and recording.
49	Monitor video - View live and recorded video, save video clips, search thumbnail summaries of recorded video, use the camera, Pan, Tilt and Zoom (PTZ) controls, or configure pre-defined video Views and Video Walls.
50	Define recording and event policies - Create recording schedules, define event-triggered actions, configure motion detection, and other features.
51	Monitor system and device health - View a summary of system health for all devices, or device status, alerts and events.

S.NO.	Characteristics and Description
52	Backup and restore - Backup the system configuration, and optionally include historical data (such as alerts).
53	The VMS Operations Management Console should support (if required) configurable as a redundant pair for high availability (HA) and system should ensure uninterrupted system access for users and administrators.
54	***VMS Monitoring Console***
55	VMS monitoring Console application should allow VMS System users to monitor live and recorded video.
56	VMS monitoring Console should below viewing tool features;
57	**i. Desktop monitoring application**
58	Allows simultaneous viewing of up to 25 cameras per Workspace, and up to 48 cameras per workstation.
59	Create Video Matrix windows for display in separate monitors.
60	View Video Walls.
61	Create unattended workstations.
62	View and manage alerts.
63	View cameras, video, and alerts based on a graphical map should support (if required)
64	**ii. Web-based configuration and monitoring tool**
65	Allows simultaneous viewing of multiple video panes:
66	View up to 25 cameras with the 64-bit version of Internet Explorer.
67	Add the users, Views and Video Walls available in the desktop application.
68	Configure the camera, streams and recording schedules.
69	**iii. Desktop video clip player**
70	Simple player used to view video clip files.
71	**iv. Web-based server console**
72	Should provide basic viewing features for a single stream (Stream A) from a single camera.
73	c) VMS monitoring Console should have below features;
74	i. Client Application - A full-featured monitoring application should provide access to the cameras and video from a single screen should includes the following workspaces and features:

S.NO.	Characteristics and Description
75	Video workspace
76	Wall workspace
77	Alert workspace
78	Maps workspace support (if required)
79	Forensic Analysis Tools should support (if required)
80	ii. Video Player - monitoring application that includes the following monitoring workspaces:
81	Video workspace
82	Wall workspace
83	iii. Video Wall Application – This should launches a monitoring application for unattended workstations. Unattended mode allows video monitoring windows to display Video Walls without access to the monitoring console configuration interface. The unattended screens should remain open even is the keyboard and mouse are disconnected, and can (optionally) re-appear when the workstation is rebooted.
84	Iiv. Forensic Analysis Tools - VMS monitoring Console should support (if required) below features ;
85	Thumbnail Search—Use Thumbnail Search to quickly locate specific scenes or events in recorded video without fast-forwarding or rewinding. Thumbnail Search should display a range of video as thumbnail images, should allow to identify a portion of the recording to review.
86	Clip Management—Use Clip Management to view, download and delete MP4 clips. that are stored on the server.
87	Motion Analysis—Use Motion Analysis to view a summary of motion events for recorded video.
88	v. Camera Recording Management
89	a. System should have option to Merge Recorded primary & secondary streams. A camera's recordings from Stream A and Stream B should be played through a single timeline. For example, application should record continuous video throughout the night at a lower quality, but also record higher-quality video whenever an event occurs. The video should displayed in a single timeline.
90	b. System should support recording management to view the recordings available on a camera's local storage device (such as an SD card), and copy them to the server.

5.19 Video Analytics

The Video Analytics Solution should support proposed VMS system. The required software and licenses need to be provided by the bidder as part of this project. Video Analytics Platform transforms video surveillance systems into pro-active and intelligent tools, unifying privacy, security and operational efficiency.

5.20 Type 1 – Object Detection

Table 21: Camera Type 1 - Object Detection

S.NO.	Characteristics and Description
1.	Detect any new object in the scene by comparing the current image to a background model
2.	System should provide grid-based analysis (using cues at multiple scales for analytics)
3.	Ability to do foreground detection based on edge detection rather than color
4.	System should support detection zone and perspective (near & far object size) to be configured on screen
5.	System should support an unlimited number of detection areas (each with its own zone and settings)
6.	System should monitor object size: little fluctuations should be ignored. The alarm conditions should be defined by relative object size (min and max) and minimum dwell time
7.	System should provide option to enable privacy feature.(Privacy feature should be certified).
8.	Visualization should be provided as an MPEG4 RTSP stream
9.	System should support most security management systems via API – using metadata in XML or JSON format
10.	System should support internal SSL in order to prevent tapping or any other kind of IP-based manipulation
11.	System should support built-in video recording and encryption options a. Certificate with asymmetric encryption: 3DES (+ 1024 bit RSA) b. Decryption with chip cards in combination with PIN codes (four-eye-principle) or by entering transaction codes

5.21 Type 2- Object Counter

Vehicle Counter automatically counts vehicles on the road. As soon as a vehicle has passed a freely definable area on a traffic lane, it will automatically be counted and classified. Gained results can be statistically evaluated and exported.

Table 22: Camera Type 2- Object Counter

1.	Automatically counts vehicles (passenger cars, trucks, motorbikes) in up to 4 lanes at a time
2.	Simultaneously counts vehicles moving in two different directions
3.	Superimposes count results on video using three specified time spans in minutes, hours, days and weeks
4.	Counts in traffic congestion stop-and-go situations
5.	Exports statistics to .csv
6.	Lanes can be configured using a point-and-click interface
7.	Uses feature-based tracking algorithms to detect and analyze motion
8.	No calculation on the camera necessary, completely server-based
9.	Independent of camera manufacturer due to open interfaces
10.	Visualization can be provided as an MPEG4 RTSP stream to be integrated into any VMS just like any other camera
11.	System should support most security management systems via API – using metadata in XML or JSON format
12.	System should support most security management systems via API – using metadata in XML or JSON format
13.	System should support internal SSL in order to prevent tapping or any other kind of IP-based manipulation
14.	System should support built-in video recording and encryption options a. Certificate with asymmetric encryption: 3DES (+ 1024 bit RSA) b. Decryption with chip cards in combination with PIN codes (four-eye-principle) or by entering transaction codes
15.	System should support video formats in any resolution (from CIF to Full HD and more): H.265 / H.264 / MPEG-4 / MxPEG / H.263+ / M-JPEG / JPEG 2000
16.	System should support automatic check of hard disk and server status as well as connections to cameras and triggers events by email if any problem is detected
17.	System should support self-contained analytics modules. Support any particular stream to be processed by several modules

5.22 Location for CCTV Cameras, Environmental Sensors and WiFi Hotspots

Table 23: Location for CCTV Cameras, Environmental Sensors and WiFi Hotspots

S.No.	Location Name	CCTV Cameras			Environmental Sensors	Wifi Hotspots
		Type 1 Panoramic	Type 2 Surveillance	Type 3 Fixed		
1	Rang Bhawan Chowk	2	4	2+2*	1	1
2	Dufreen Chowk	2	2	2+2*	-	-
3	Saraswati Chowk	2	2	2	1	-
4	Tilak Chowk	2	2	2	-	-
5	Gandhi Chowk (Station Road)	2	2	2	1	-
6	Madhla Maruti chowk	2	2	2	1	1
7	Kumbhar Ves	2	2	2	1	
8	Chirag Ali	2	2	2		
9	Saat Rasta	2	4	2	1	1
10	Old Employment Chowk	2	2	2	-	-
11	Siddheshwar Temple	1	4	-	1	1
12	Hom Ground	1	2	-	-	1
13	Bhuikort Fort Premises	1	2	-	-	1
14	S.T. Stand	1	2	-	1	1
15	Navi Peth	1	2	-	1	1
16	Dr. Kotnis Memorial	1	2	-	-	1
17	Hutatma Smruti Mandir	1	2	-	1	1

***4 cameras for number plate detection is proposed**

VIDEO ANALYTICS AND MANAGEMENT /DATABASE SERVER

5.23 Blade Chassis & Management

Table 24: Blade Chassis & Management

S.no.	Parameter	Description
1	Blade Chassis	Blade chassis shall be 19" Electronic Industries Alliance Standard Width rack mountable and provide appropriate rack mount kit.
2	Power	The enclosure should be populated fully with power supplies of the highest capacity & energy efficiency of a minimum of 90%.
3		The power subsystem should support N + N power redundancy (where N is at least equal to 2) for a fully populated chassis with all servers configured with the highest CPU configuration, maximum memory and IO configuration possible
4	Cooling	Each blade enclosure should have a cooling subsystem consisting of redundant hot pluggable fans or blowers enabled with technologies for improved power consumption and acoustics
5	Chassis connectivity	The chassis should support redundant modules for connectivity - Ethernet and Fiber Channel /Infiniband modules OR converged fabric modules in lieu thereof
6	Ethernet Module	Chassis should have sufficient number of redundant 10gb based ethernet modules to provide a minimum of 20 Gbps per blade server and 10 Gbps sustained per blade server (with 1 module failure)for a fully populated chassis for LAN Traffic.
7	FC Module	Chassis should have sufficient number of redundant 8gb based FC modules to provide a minimum of 16 Gbps per blade server and 8 Gbps sustained per blade server (with 1 module failure)for a fully populated chassis for FC Traffic.
8	Converged Module	In lieu of above mentioned Ethernet and FC module, Chassis can also be provision to have sufficient number of redundant 10gb based converged modules to provide a minimum of 40 Gbps per blade server and 20Gbps sustained per blade server (with 1 module failure)for a fully populated chassis for LAN & SAN Traffic. It should also provide minimum 40Gbps FCOE downlink bandwidth from each module /switch to each x86 server
9	Management	Must be able to show the actual power usage and actual thermal measurement data of the servers across chassis

S.no.	Parameter	Description
10		Administrators should have the ability to set a cap on the maximum power that the chassis / physical server can draw in order to limit power consumption for non critical applications
11		Redundancy should be built in the management subsystem so that if one management module fails other should be able to take over automatically. Management solution should be provided so that management upto 10 blade blade chassis can be done from single console.
12		Role Based Access Control and remote management capabilities including remote KVM should be included
13		Should support a environment where server identity including - server BIOS version, MAC ID, NIC firmware version, WWPN , FC-HBA firmware version , Management module firmware version, Server Boot Policies, KVM IP etc can be created
14		Movement of server identity from one slot to another in the event of server failure within chassis as well as across chassis.
15	Licensing	Should include all necessary licenses for management for a fully loaded chassis.

5.24 Blade Servers for applications

Bidder need to provide min 6 blade servers, however as per current project requirement bidder can propose more servers.

Table 25: Blade Servers for applications

S.no.	Parameter	Description
1	Processor	Each blade server should be configured with a minimum of two (2) 2.60 GHz E5-2690 v3/ v4 porcessors or higher available in latest series. Proposed processor should be available in the market for atleast last 6 months.
2	Memory	Should have at least 24 DIMM slots and should be populated with minimum 128 GB of memory Day1.
3	HDD	The server should support a minimum of 2 hot plug SAS, SATA and SSD hard disk drives and should be populated with minimum 2 x 600 GB SAS drives of memory Day1

S.no.	Parameter	Description
4	Interface ports	The Blade server should support Ethernet and fiber channel connectivity OR Converged Network Adapters in lieu of the same. The Converged Network Adapters should aggregate both the Ethernet and FC connectivity on a single fabric
5		The server should be configured to provide for port and card level redundancy
6	IO bandwidth	The server should provide a minimum of 36Gb aggregate bandwidth per server (2 x 10Gb for Ethernet and 2 x 8 Gb for FC OR 4X10Gb for Converged Network adapter). Server should support the scalability to 80gb of LAN & SAN traffic.
7		The server bandwidth should be expandable to 80Gb per server
8	Management	It should support remote/virtual KVM capability from an external keyboard, video monitor and mouse to all blades installed in the chassis through the management controllers and should also support virtual media for dvd access.

5.25 Storage Specification for Video application

Bidder needs to provide 30 Days storage at 15FPS and 2 MP for all the cameras,

Table 26: Storage Specification for Video application

S.NO.	Item	Feature description
1.	Architecture	Vendor may propose external SAN/NAS or Local Compute Disk Storage to store Video.
2.	Server Nodes	Should provide Minimum 56 drives or Higher
3.	Processors	Controller shall have a minimum of 12 cores with dual Intel E5 based CPUs.
4.	Memory	Controller node should provide 128 GB or more memory.
5.	Upgradability	Server/Controller nodes should be upgradeable to future CPU and memory releases without having to change the entire chassis
6.	Storage	Should support JBOD, RAID 0, 1, 5, 6, 10 , 50 and 60 raid Levels. Should configure for minimum double disk failure and one hot-spare with each storage node.

S.NO.	Item	Feature description
7.		In case of failure , individual drives can be replaced without impacting any other drives
8.		Should use 4 TB or less capacity SAS/NL-SAS 7.2K RPM drives.
9.		Support on-board Flash Backed Write Cache of up to 4 GB
10.	Network	Provide Minimum 2*10GBps per controller/server node.

Bidder to propose for external storage for any other application as per the requirement.

5.26 Firewall with URL Filtering and IPS Security Solution

Table 27: Firewall with URL Filtering and IPS Security Solution

SR. No	Specifications
1	**Industry Certifications and Evaluations**
	The Firewall solution offered OEM must be rated as ‘leaders’ or 'Challengers' in the latest Magic Quadrant for Firewall published by Gartner.
2	**Hardware Architecture**
	The appliance based security platform should be capable of providing firewall, application visibility, and IPS functionality in a single appliance
	The appliance should support atleast 8 * (1G / 10G) ports and 2 * 40 G ports from Day one and should be scalable to more 2 * 40G ports in future
	The appliance hardware should be a multicore CPU architecture with a hardened 64 bit operating system to support higher memory
	Proposed Firewall should not be proprietary ASIC based in nature & should be open architecture based on multi-core cpu's to protect & scale against dynamic latest security threats.
	Proposed firewall overall desing approach should be single pass architecture
3	**Performance & Scalability**
	Should support atleast 15 Gbps of production performance / multiprotocol combined firewall & IPS throughput
	Firewall should support atleast 15,000,000 concurrent sessions with application visibility
	Firewall should support atleast 120,000 connections per second

SR. No	Specifications
	Firewall should support atleast 1000 VLANs
4	**Firewall Features**
	Firewall should provide application detection for DNS, FTP, HTTP, SMTP,ESMTP, LDAP, MGCP, RTSP, SIP, SQLNET, TFTP, H.323, SNMP
	Firewall should support creating access-rules with IPv4 & IPv6 objects simultaneously
	Firewall should support operating in routed & transparent mode
	Should support Static, RIP, OSPF, OSPFv3 and BGP
	Firewall should support manual NAT and Auto-NAT, static nat, dynamic nat, dynamic pat
	Firewall should support Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4) & Nat46 (IPv4-to-IPv6) functionality
	Firewall should support Multicast protocols like IGMP, PIM, etc
	Should support security policies based on security group names in source or destination fields or both
	Should support capability to limit bandwidth on basis of apps / groups, Networks / Geo, Ports, etc
5	**High-Availability Features**
	Firewall should support Active/Standby failover
	Firewall should support etherchannel functionality for the failover control & date interfaces for provide additional level of redundancy
	Firewall should support redundant interfaces to provide interface level redundancy before device failover
	Firewall should support 802.3ad Etherchannel functionality to increase the bandwidth for a segment.
	Firewall should have integrated redundant power supply
	Firewall should have redundant hot-swappable FANs
7	**Next Generation IPS**
	Should have the capability of passively gathering information about virtual machine traffic, network hosts and their activities, such as operating system, services, open ports, client applications, and vulnerabilities, to assist with multiple activities, such as intrusion event data correlation, elimination of false positives, and policy compliance.

SR. No	Specifications
	Should be capable of dynamically tuning IDS/IPS sensors (e.g., selecting rules, configuring policies, updating policies, etc.) with minimal human intervention.
	Should be capable of automatically providing the appropriate inspections and protections for traffic sent over non-standard communications ports.
	Should be able to link Active Directory and/or LDAP usernames to IP addresses related to suspected security events.
	Should be capable of detecting and blocking IPv6 attacks.
	Should support the capability to quarantine end point
	Solution should support full-featured NBA capability to detect threats emerging from inside the network. This includes the ability to establish “normal” traffic baselines through flow analysis techniques (e.g., NetFlow) and the ability to detect deviations from normal baselines.
	The solution must provide IP reputation feed that comprised of several regularly updated collections of poor repuration of IP addresses determined by the proposed security vendor
	Solution must support IP reputation intelligence feeds from third party and custom lists of IP addresses including a global blacklist.
	Should must support URL and DNS threat intelligence feeds to protect against threats
	Should support Reputation- and category-based URL filtering offering comprehensive alerting and control over suspect web traffic and enforces policies on more than 280 million of URLs in more than 80 categories.
	Should support safe search for YouTube EDU enforcement
	Solution must be capable of passively gathering details unique to mobile devices traffic to identify a wide variety of mobile operating systems, mobile applications and associated mobile device hardware.
	Should support more than 4000 application layer and risk-based controls that can invoke tailored intrusion prevention system (IPS) threat detection policies to optimize security effectiveness.
	Must be capable of providing network-based detection of malware by checking the disposition of known files in the cloud using the SHA-256 file-hash as they transit the network and capability to do dynamic analysis on-premise (if required in future) on purpose built-appliance
	The Appliance OEM must have its own threat intelligence analysis center and should use the global footprint of security deployments for more comprehensive network protection.

SR. No	Specifications
	The detection engine should support capability of detecting and preventing a wide variety of threats (e.g., malware, network probes/reconnaissance, VoIP attacks, buffer overflows, P2P attacks, etc.).
	Should be able to identify attacks based on Geo-location and define policy to block on the basis of Geo-location
	The detection engine should support the capability of detecting variants of known threats, as well as new threats
	The detection engine must incorporate multiple approaches for detecting threats, including at a minimum exploit-based signatures, vulnerability-based rules, protocol anomaly detection, and behavioral anomaly detection techniques. Identify and explain each type of detection mechanism supported.
	Should support Open based Applicaion ID for access to community resources and ability to easily customize security to address new and specific threats and applications quickly
8	**Management**
	The management platform must be accessible via a web-based interface and ideally with no need for additional client software
	The management platform must provide a highly customizable dashboard.
	The management platform must be capable of integrating third party vulnerability information into threat policy adjustment routines and automated tuning workflows
	The management platform must be capable of role-based administration, enabling different sets of views and configuration capabilities for different administrators subsequent to their authentication.
	Should support REST API for monitoring and config programmability
	The management platform must provide multiple report output types or formats, such as PDF, HTML, and CSV.
	The management platform must support multiple mechanisms for issuing alerts (e.g., SNMP, e-mail, SYSLOG).
	The management platform must provide robust reporting capabilities, including a selection of pre-defined reports and the ability for complete customization and generation of new reports.
	The management platform must risk reports like advanced malware, attacks and network

SR. No	Specifications
	The management platform must include an integration mechanism, preferably in the form of open APIs and/or standard interfaces, to enable events and log data to be shared with external network and security management applications, such as Security Information and Event Managers (SIEMs), and log management tools.

5.27 Data Center Core switches

Table 28: Data Center Core switches

S. No.	Features	Specifications
1	Hardware features	· Proposed network device must be 19'' rack mountable & Maximum 2 RU in size.
		· It is desirable that the network infrastructure is based on delivering front to back airflow.
		· Must have Redundancy Power Supply Units (PSUs), Hot-swappable, field-replaceable power supplies, 1:1 power redundancy and Must have N:1 fan module redundancy.
		· All components (including elements such as I/O cards, Expansion Module, power supplies and fans) must be hot swappable with zero disruption to traffic forwarding (Unicast or multicast).
		· Must have minimum 48 x 1/10 G SFP+ and 6 X 40 G QSFP port, SI to choose required transceivers as per their solution. Core/ Spine to TOR/ Leaf switch connectivity should be at multiple of 40G links.
		· Transceivers to be supplied as per minimum BOQ given in RFP.
		· Must be field upgradeable / license upgradeable to Layer 3 for investment protection.
		· Must have Line-rate traffic throughput on all ports at Layer 2.
		· Must have Line-rate traffic throughput on all ports at Layer 3
		· Must support Bridge Extension Protocol (IEEE 802.1BR) or equivalent - to scale Gigabit & 10 Gigabit Ethernet ports

S. No.	Features	Specifications
		· Must allow building very large L2 domain using Multi-Path Ethernet technologies.
		· Must support port channeling across multi chassis.
2	**Switch Features**	Physical standards for Network Device
		· Must support I IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, IEEE 802.1q, IEEE 802.1ab, IEEE 802.3ad, IEEE 802.1p
		Routing protocol support when upgraded with Layer3 License
		· Must support Static IP routing, OSPF, BGPv4,
		· Must support Protocol Independent Multicast Version 2 (PIMv2) sparse mode, Source Specific Multicast (SSM), Multicast Source Discovery Protocol (MSDP), and Internet Group Management Protocol Versions 2, and 3 (IGMP v2, and v3)
		· Support for up to 8K multicast routes
		Must support In-Service Software Upgrade (ISSU) for Layer 2
		Must have Modular QoS classification compliance
		It is preferred that switch must support VXLAN (Bridging and Routing) as well as NVGRE orverlay encapsulation protocol in hardware to support multiple hypervisor deployment in the Data Center
		· Must support Remote Authentication Dial-In User Service (RADIUS) and/or Terminal Access Controller Access Control System Plus (TACACS+)
		· Must support AAA using RADIUS (RFC 2138 & 2139) and/or TACACS+, enabling centralized control of the device and the ability to restrict unauthorized users from altering the configuration
		Must have following Access Control features
		· Must support Ingress ACLs (Standard & Extended or equivalent) on Ethernet and virtual Ethernet ports

S. No.	Features	Specifications
		· Must have Egress strict-priority queuing or equivalent
		· Must support Egress port-based scheduling: Weighted Round-Robin (WRR) or equivalent
		· Must have ACL-based QoS classification (Layers 2, 3, and 4)

5.28 Data Center Core/Internet Routers

Table 29: Data Center Core/Internet Routers

Sr. No	Specifications
1	Router should be chassis based and modular architecture with multicore processor for scalability
2	Router should have minimum of 8 nos. of SFP based ports and 4x10G SFP+ based ports
3	Router should have DES, 3DES and AES Standards through dedicated encryption module/processor. Should support IPSec with IKEv2
4	Router shall have hot swappable 1:1 redundant internal power supply
5	Router should have a minimum throughput of 60 Gbps. The Router should have minimum forwarding rate of 18 Mpps with concurrent services like ACL, QoS, and URPF
6	Router should have a minimum IPSec throughput of 15 Gbps
7	Router should support static Routes, OSPFv2, OSPFv3, BGP4, MBGP, BFD, Policy based routing, IPv4 and IPv6 tunnelling
8	Router should support IGMP v1/v2/v3 and PIM multicast routing
9	Should support other IP Services like GRE tunnel, IPv4 tunnel, IPv6 tunnel, Virtual Router Redundancy Protocol (VRRP), Network Address Translation (NAT), Access Control Lists (ACLs)
10	Shall have 802.1p class of service, IP differentiated service code point (DSCP) and IP precedence

11	Routers should support marking, classification, policing and shaping
12	Router should support SSHv2, SNMPv2c, SNMPv3 and NTP
13	Routers should support AAA using RADIUS and TACACS+
14	Routers should support configuration rollback
15	Router should support software upgrades
16	Support for accounting of traffic flows for network planning and security purposes.
17	Should support extensive support for IP SLA and best path selection for metrics like delay, latency, jitter, packet loss to assure business-critical IP applications.
18	Router should support monitoring of network traffic with application level insight with deep packet visibility into web traffic, RTP-Based VoIP traffic and cRTP
19	Router shall have traffic load balancing capability on dual WAN Links based on based on advanced criteria, such as reachability, delay, loss, jitter and bandwidth utilization.
20	Router shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.
21	Router shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.
22	Router / Router's Operating System should be tested and certified for EAL 2 or above or NDPP certified

5.29 Access Switch

Table 30: Access Switch

Sr. No.	Specifications
1	Switch should have 24 number of 10/100/1000Base-TX auto-sensing ports and 4 1G SFP Uplink ports
2	switch should support stacking using dedicated stacking ports separate from uplink ports with minimum stack bandwidth of 56 Gbps.

Sr. No.	Specifications
3	Switch should support link aggregation across multiple switches in a stack.
5	Switch should have non-blocking wire-speed architecture.
6	Switch should support IPv4 and IPv6 from day One
	24/48 port switch should support external/internal redundant power supply
7	56 Gbps switching fabric with 45 Mpps of forwarding rate
8	IEEE 802.1Q VLAN tagging.
9	802. 1Q VLAN on all ports with support for minimum 255 active VLANs and 4k VLAN ids
10	Support for minimum 16k MAC addresses
11	Spanning Tree Protocol as per IEEE 802.1d
12	Multiple Spanning-Tree Protocol as per IEEE 802.1s
13	Rapid Spanning-Tree Protocol as per IEEE 802.1w
14	Self learning of unicast & multicast MAC addresses and associated VLANs
15	Link Aggregation Control Protocol (LACP) as per IEEE 802.3ad.
16	Switch should support IGMP v1/v2/v3 as well as IGMP v1/v2/v3 snooping.
17	Switch should support classification and scheduling as per IEEE 802.1P on all ports.
18	Switch should support 8 queues per port.
19	Switch should support QoS configuration on per switch port basis.
20	Switch should support classification and marking based on IP Type of Service (TOS) and DSCP.
21	Switch should provide traffic shaping and rate limiting features (for egress as well as ingress traffic) for specified Host, network, Applications etc.
22	Strict priority queuing guarantees that the highest-priority packets are serviced ahead of all other traffic.
23	IP Route Filtering, ARP spoofing, DHCP snooping etc.
24	Should support a mechanism to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.

Sr. No.	Specifications
25	Switch should support static ARP, Proxy ARP, UDP forwarding and IP sourceguard.
26	Switch should Support Ipv6 First hop Security with the following functions: IPv6 snooping, IPv6 DHCP guard, IPv6 router advertisement (RA) guard etc
27	Switch should be SNMP manageable with support for SNMP Version 1, 2 and 3.
28	Switch should support TELNET and SSH Version-2 for Command Line Management.
29	Switch should have comprehensive debugging features required for software & hardware fault diagnosis.
30	Should support Layer 2 trace route or equivalent for the easy troubleshooting by identifying the physical path that a packet takes from source to destination.
31	Should support a mechanism to detect connectivity issues with both fiber and copper cabling.
32	Switch should support FTP/ TFTP
33	Switch should be EAL3 or NDPP & IPv6 ready logo certified from day one

5.30 Load Balancer

Table 31: Load Balancer

S. No.	Specifications
1	Should be appliance based solution with high performance purpose built hardware.
2	The appliance should have minimum 8 GB RAM for support for multiple load balancing features and functions.
3	The appliance should have sufficient number of ports/interfaces and provision for scalability to meet present and future requirement of the CFMS solution for the entire period of the project envisaged in the RFP.
4	The appliance should have minimum 10 Gbps of throughput from day one and provision for scalability to meet present and future requirement of the CFMS solution for the entire period of the project envisaged in the RFP.
5	Should have minimum 10M concurrent connections
Load balancing Features	
1	The appliance should support layer 2 to layer 7 load balancing

S. No.	Specifications
2	Extensible policies (e policies) scripts to implement business logic on network without changes in application code.
3	e-policy scripting should support deep packet inspection of protocol including HTTP, SOAP, Weblogic etc.
4	The appliance should support server load balancing algorithms i.e. round robin, weighted round robin, least connection, Persistent IP, Hash IP, Hash Cookie, consistent hash IP, shortest response, proximity, snmp, SIP session ID, hash header etc.
5	Should maintain server persistency based on source ip and destination ip, http header, URL, cookie and SSL ID
6	The appliance should support multi-port, scripted and custom health check with content verification
7	Should provide application & server health checks for well-known protocols i.e. ARP, ICMP, TCP, DNS, RADIUS, HTTP/HTTPS, RTSP etc..
8	The appliance should have and/or relationship to check various dependencies for the application delivery
9	should support layer4 and layer 7 load balancing for HTTP/HTTPS, FTP/FTPS, SIP, RTSP , RDP, TCP, TCPS and UDP protocols
10	The appliance should support GSLB across 4 or more data centers of all theabove mentioned specifications
1	Should provide comprehensive and reliable support for high availability and N+1 clustering.
2	Stateful session failover with Active-active & active standby unit redundancy mode.
4	Support for multiple communication links for realtime configuration synchronizations including HA group, gateway health check, decision rules, SSF sessions etc.. and heartbeat information
5	Should support floating MAC address to avoid MAC table updates on the upstream routers/switches and to speed up the failover
6	Should support for secondary communication link for backup purpose
8	should support built in failover decision/health check conditions including, CPU overheated, system memory, process health check, unit failover, group failover and reboot
9	should also have option to define customized rules for gateway health check - the administrator should able to define a rule to inspect the status of the link between the unit and a gateway

S. No.	Specifications
10	Configuration synchronization at boot time and during run time to keep consistence configuration on both units.
11	Should support advance Access Control List-ACL's to protect against network based flooding attacks. Administrator should able to define ACL's rules based on connections per second (CPS) and concurrent connections (CC), cookie value.
12	TCP optimization option configuration should be defined on per virtual service basis not globally.
13	Should provide selective compression for Text, HTML, XML, DOC, Java Scripts, CSS, PDF, PPT, and XLS Mime types
14	should provide Advanced high performance memory/packet based Web cache; fully integrated with HTTP/HTTPS
15	should provide detailed cache access statistics based on ip or http hosts
16	The appliance should support transparent, layer 7 proxy and triangular mode support
17	The appliance should support L7 rule based application firewall to protect the internal applications within base license
18	Appliance should have security features like reverse proxy firewall, Syn-flood and DDOS attack protection features from the day of installation.
19	The appliance should have extensive report and logging with inbuilt tcpdump like tool and log collecting functionality
20	The appliance should have SSH CLI, Direct Console, SNMP, Single Console per Cluster with inbuilt reporting.
21	The appliance should provide detailed logs for real time and time based statistics
22	Appliance must support multiple configuration files with 2 bootable partitions for better availability and easy upgrade / fallback.
23	The system should support led warning and system log alert for failure of any of the power and CPU issues
24	Should support role based access control with different privilege levels for configuration management and monitoring of individual appliance or multiple appliances
25	Single window management for load balancer, site failover appliances, IPv6 gateway with integrated master console to generate and execute configuration scripts on one or more devices.

S. No.	Specifications
26	Central repository for active and archived configuration files for rapid provisioning of new appliances or rollback, Email notifications and alerts to avoid downtime and facilitate rapid recovery from faults
27	IPv6 and SSL accelerator should be high performance dedicated appliance based solution (not integrated on load balancer). The proposed solution must integrate with application load balancing appliances for IPv6 migration and SSL acceleration of business applications.
28	Appliance should provide full ipv6 support.
29	IPv6 gateway should provide compressive support for IPv6 functions to help with ipv4-to-ipv6 transition without business disruption and must provide support for dual stack, DNS64, NAT 64, DNS 46, NAT 46, IPv6 NAT
30	Should support various deployment modes for seamless integration including reverse proxy (IPv6 to IPv4, IPv4 to IPv6) and IPv6 to IPv6 transparent and reverse proxy mode.
31	Should provide comprehensive and reliable support for high availability and IPv6 VIP switchover and support for various IPv6 functions such as compression, caching, SSL acceleration & clustering.
32	should provide Secure online application delivery using hardware-based high performance SSL acceleration with minimum of 3Gbps SSL throughput and 5,000 2048 bit SSL TPS (transaction per second) not connection per second (CPS).
33	The appliance should support Certificate format as OpenSSL/Apache, .PEM etc.
34	The appliance should have additional hardware card to perform the SSL offloading / acceleration for 1024 and 2048 bit certificates.
35	The appliance should support use of password protect Certificate/Private Key backup/restore to/from local disk or remote TFTP server
36	The appliance should support Self generates CSR (Certificate Signing Request), self-signed Certificate and private key for specified host.
37	Appliance should provide comprehensive and reliable support for high availability with Active-active & active standby unit redundancy mode. Should support both device level and VA level High availability
38	should support built in failover decision/health check conditions (both hardware and software based) including CPU overheated, SSL card, port health, CPU utilization, system memory, process health check and gateway health check to support the failover in complex application environment
39	Should support role based access control with different privilege levels for configuration management and monitoring.

S. No.	Specifications
40	The appliance should provide detailed logs and graphs for real time and time based statistics

5.31 Backup Software

Table 32: Backup Software

Sl. No.	Technical Specification
1	Backup software must support GUI with centralized management / Single interface for management of all backup activities.
2	The offered software must support Advanced sharing of different media across the environment (disk, tape and optical)
3	The offered software must support multiple level of backups including full, incremental, differential and synthetic full.
4	The offered software must support D2D2T & D2T mechanism. It should provide deduplication and compression technologies for backup efficiency.
5	The offered software must support following application and database backup without CLI and without the requirement of temporary disk space for PostgreSQL, 64-bit Active Directory, MS SQL, MS Exchange, Share-Point, Oracle, MySQL.
6	Proposed capacity license must include unlimited database license including MS SQL, MySQL, PostgreSQL, Oracle, SharePoint, AD, DB2, Sybase etc. In case any database is not covered in capacity license, bidder must include 20 licenses for each type to avoid any challenge.
7	The proposed software must have block level technology to store single copy collected from multiple electronic repository.
8	The software must be able to Compress and Encrypt data at the Client-side and this feature should be available even during de-duplication.
9	The offered software must have more than three Encryption algorithms (like 128 bit AES, 256 BIT AES etc) and it should not demand for additional license, any such license if needed should be quoted for the total backup capacity license.
10	The offered software must provide Backup master server in HA/ DR capability. License must be included in proposed solution.
11	The offered software must support backup of virtual environment including RHEV, Vmware, Hyper-v, and OVM through integration with their hypervisor managers.
12	Backup solution must support multi tenancy feature for creation of distinct data zones.

Sl. No.	Technical Specification
13	The offered software must be able to auto discover guest VMs with database instances and dynamically protect them with application consistent recovery for MS SQL and Oracle.
14	The software solution must provide full support for Global Filter lists.
15	The offered software solution must support IPV4 and IPV6 addressing system.
16	The offered software solution must have inbuilt capability to do trend analysis for capacity planning of backup environment.
17	The offered software must support heterogeneous media server agent failover.
18	The proposed solution must support data archival for inactive data based on age or quota with seamless access on multiplatform (Windlows, Linux and Unix).
19	The proposed solution must have inbuilt Ransomware detection capability for clients
20	Proposed backup solution must have inbuilt capability to protect the backedup volume from Ransomware.

5.32 Network Management System for LAN Switches

Table 33: Network Management System for LAN Switches

S.No.	Network Management System for LAN Switches
1	Management system should provide a single integrated solution for comprehensive lifecycle management of the wired and wireless LAN (of same OEM), and should support rich visibility into end-user connectivity and application performance assurance issues
2	The NMS should support an open database schema, configuration, administration, monitoring and troubleshooting of Switches, guided workflows based on best practices with built-in configuration templates, the capability to view the network topology, Layer 2 Services and Fault Management
3	The NMS should automatically discover IP devices, SNMP compliant network devices on the network
4	The NMS should support Inventory management of Network devices, should support Monitoring and troubleshooting of Devices, should support configuration management and reporting.
5	The NMS should support flexible reporting for inventory, user tracking, compliance, switch port usage and end-of-sale.
6	The NMS should provided on dedicated appliance/ installed as a virtual appliance/ Intel based severs/ AMD based server and should support installation on Windows/ Linux

S.No.	Network Management System for LAN Switches
7	Support for Wireless Management Features (Same functionality can be provided via separate Wireless management system but same should be able to integrate with Wired Management system to implement unified policies)
8	Must show location information of clients, infrastructure Access Points, Rogue Access Points, and RF tags in a map format.
9	Must support following features
10	Wireless LAN Planning and Design, Network Monitoring and Troubleshooting, Indoor location monitoring capability, Wireless IPS management, Centralized Software updates, Network mapping with floor plans for easier automated site survey
11	· Shall provide in-depth visibility of finding, classifying, correlating, and mitigating interference from Wi-Fi and non-Wi-Fi sources such as rogue access points, microwave ovens, Bluetooth devices, and cordless phones.
12	· Should provide deep integration with the authentication; authorization, posture & Profiler to further extend the visibility across security and policy-related problems, presenting a complete view of client issues with a clear path to solving them.
13	· Must support virtualization, whereby wireless resources (APs, controllers, geographical areas) can be divided into logical domains and administrator access limited to specific domains.
14	NMS has to be from the same OEM as of Switches

5.33 EMS solution

Table 34: EMS solution

S.No	Statement
1	Following functionalities should be there in NMS/EMS: 1. Network & Server Fault Monitoring & Performance for IP/SNMP enabled devices like router, switches, CCTV devices, Sensors, PA System, Emergency Call Boxes, etc 2. Application Performance Management 3. IT Helpdesk – ITIL v3 Aligned 4. Business Services Dashboard 5. Service Level Management 6. Capacity Management 7. IT Asset Inventory Management & License Management

S.No	Statement
2	Multiple entities under EMS should have single window visibility and monitoring
3	Proposed EMS solution should be independent system of vendor and it should be scalable to expand the functionalities. It should integrate with existing system and should work from day one.
4	The system information/function/performance can be extracted to external servers/systems.
5	The system information/function/performance can be push/pull with various 3rd party systems/devices/servers.
6	The system can be easily integrated with fault management over standard protocol.
7	Various reports like SLA, trending can be extracted by user over web interface.
8	EMS tool should be able to monitor availability, utility, memory and various performance of all the devices on network.
9	It should have a WEB Based user Interface through which Administrator can access all administrative tasks and operational status monitoring for Network Devices, Servers,Sensors, etc.
10	The tool should have integrated helpdesk system for incident reporting tool with automated/manual option along with viewing, updating, tracking and closing.
11	The system should have perpetual licenses for all the devices in network and should be scalable to have more devices in future.
12	EMS tool should have functionalities to allow integration of various service levels and performance management for infrastructure and operational services in real time.

COMMAND CENTER PHYSICAL INFRASTRUCTURE

5.34 Site Preparation and Minimum guideline for control room design

Table 35: Site Preparation and Minimum guideline for control room design

#	Parameters	Qty
1	Wall Size for Video Wall	Video-wall with Single Controller
2	Cube Size	70 Inch Each for each operator
3	Room Size for 15 Operators	15 Operators
4	Workstations	As per BOQ

General Requirements and Specifications For Console System

The following specifications detail the minimum requirements of the Console System. Bidders must respond on the enclosed chart. This allows for a point-by-point technical response stating compliance, taking exception or providing requested information. Bids submitted without this chart will be considered non-responsive.

Vendor shall supply the following to obtain project level approval

a) Copy of ISO 9001:2008 Certification & ISO 14001:2004
b) Copy of Green guard certifications for full console.
c) Copy of FSC certification (Forest Stewardship Council) for Wood Compnents. Certificate for compliance towards sustainable forest initiative ensuring wood used is from sustainable forest harvesting.

The console(s) design shall be proven in service.

1) The consoles shall be of modular design, facilitating future equipment retrofits and full reconfigurations without major modification to structure or exterior elements.

2) The consoles shall have rigid independent frames.

3) Mechanical fasteners shall connect adjacent modules to maintain perfect alignment.

4) Depending upon the evolution of needs and technology, the construction shall provide easy and fast removal and installation of all equipment items.

5) The console frame shall have the sit stand actuator mechanisms incorporated into the structural frame and these actuator mechanisms will not be free standing on the floor.

6) The console frame shall have provisions for leveler legs to be incorporated into the frame. In addition, the frame will be pre designed to install optional anti-vibration dampers (upon request) or anchoring brackets for applications where vibration is a factor or for applications located in seismic zones.

7) The console frame structure shall have fully integrated cable management. The base structure will have a minimum of 2 lateral raceways; the transition from the base to the work surface will have a minimum of 2 vertical raceways; and the work surface will have a lateral raceway location depending on the size of equipment being mounted in the console.

8) The cable raceways shall be continuous throughout the entire console layout thus allowing uninterrupted cable management.

9) The console design shall be acoustically acceptable and minimize noise reflection.

10) Consoles shall be properly finished to prevent glare and reflection.

11) No sharp edges shall be present that may lead to injury to the operators.

12) The color of the console shall be such that users can work for a long duration without eye strain or other stress.

13) The console finish shall be resistant to rubbing and liquids, impact-proof and easy to clean.

14) The surface of the work area shall be non-scratchable

15) The work surface should be smooth and level and take into consideration all accepted human factor criteria, including view, reach distances, keyboard height and knee well space. The work surface height shall be adjustable.

16) Full console sit to stand height adjustment shall be available via an electric actuator. The top section of the console raises both the upper viewable equipment and the work surface together.

17) Detailed CAD (PDF format) drawings of console and equipment layouts for coordination of site measurements, architectural, mechanical, and electrical project elements for each console type will be provided.

18) All Board Cladding (Laminates) must be 1MM & the Laminate supplier must be Green Guard Certified, Certificates of which must be provided on request

19) Renderings of consoles and room must be provided on request...

20) Pre-production review, to include a drawing submittal and component listing complete with samples of selected finish materials must be provided on request...

21) Samples of the following material components, which demonstrate workmanship, shall be provided upon request:
   a. Work surface sample.

   b. Sample panel construction and finish materials.

Modular Control Desk

Bidder should refer the control desk design for any clarification of items.

Structure

- Console System must be of modular design. The Console design shall address the functional, ergonomic and aesthetic requirements of the particular working environment while complying with accepted human factor design and ergonomic standards for viewing distance, angle, keyboard height, and knee space requirements.
- Standard top height of modular control desk shall be 750 mm in sitting position and have to go till 1100 mm for Standing Position. The Console Table Top / Working Surface should be made in 12mm mm Solid Acrylic Panel (ASS) Cladded on 25mm MDF Board. Drawing is enclosed.
- Size of modular control desk shall be as per drawing and it should have arrangement for placing of 2 workstations monitor for 2 Users on each control desk.
- The Basic Structure should consist of Extruded AL Profiles (6063T6 grade) binded by Top & Bottom (min 2mm) MS Frames formed in such a way as to provide maximum buckling and torsion resistance. The Front & Back Panels should be openable / removable (with Locks)

made of laminated MDF Board in min thickness of 18mm. The front Shutter will be of Toughed Glass (min. 4mm Thick) cladded on 18 mm MDF and Back shutter in 18 mm MDF Boards with Fan for Heat decapitation.

- The Side Panels should be fixed type, made in 26mm MDF Board Cladded on 18mm MDF Board. All panels must be attached to the frame with concealed fasteners. Console access panels (Front & Rear Panels) must be removable without the use of tools. The Front panel should be positioned in such a way that there should be sufficient leg space (min of 400mm from the front edge of the Table Top).
- All sheet metal / aluminum parts must be finished with electrostatic powder coating with average of min 80 microns over all surfaces.
- The console frame shall have provisions for leveller legs to be incorporated into the frame.

Work Surface

- The Console Table Top should be made of 12mm Solid Acrylic Panel (ASS) over 25mm MDF Board, with no sharp Edges. The work surface platform shall have smooth edges and transitions, thus avoiding sharp corners or potential rib catchers for operator safety.

Modular Rear Wall (Slat Wall)

- Wall should be of min 86 mm (Height) and approx 200-300 mm high from the Monitor Base.
- Modular walls shall be made of 2mm thick Extruded Aluminum (6063T6 aluminum alloy).
- It should have high Load bearing capacity. Minimum weight carrying capacity has to be 20 KGs per Meter.

Monitor Arms

- It shall be capable for mounting all type of existing LCD monitor with dimensions between 17” to 27” using suitable adopter/additional base plate, if required any.
- Vendor shall provide the suitable adopter/additional base plate for mounting the existing LCD monitors.
- It shall allow the rotate/ tilt/ raise/the monitors as well as fix their adjustment.
- The monitor arm should be Articulating monitor arm

Miscellaneous

- There shall be a closed cabinet (02 no in one Modular Control Desk) below the modular control desk for placing of CPU. Cabinet should have proper cooling system. CPU needs to be accessible from front as well as rear side of control desk for easy working and maintenance.
- The cabinet shutters shall be of Butt Hinged type with 18mm thick MDF.
- Rear shutters of each console should have provision of Airflow opening for cooling and heat dissipation effect.
- Rear panel shall have ventilation fans mounted on it.
- It shall have proper arrangement for flow of cables i.e. LAN Cable, Power cable, VGA cable, Mouse cable, Keyboard etc.
- Design of control desk shall allow cables from the floor cable channel.

- Control desk shall be equipped with individual power distribution unit (PDU) (06 no for one Modular Control Desk) and capable of being switched on/off individually. Power supply socket should be dual type i.e. Universal type.
- All bolts must be of SS material to avoid rust due to environment.

Prospective View Of Control Room

PROSPECTIVE VIEW OF CONTROL DESK

CHAIR:

HIGH BACK CHAIR

Structure: High back chair

Mechanism: Recline-Glide Motion MB Mechanism

Armrest: Adjustable Armrest

Base: Grey Epoxy Aluminium Base (VG)

Base: V Base for Mesh Series

BIFMA & GREEN GUARD certified

Seat Back Adustment, Height Adjustment, Button less chair

5.35 UPS for DC

Table 36: UPS for DC

S.N.	Parameter	Minimum Specifications
1.	Capacity	Adequate capacity to cover all above IT Components at respective location
2.	Output Wave Form	Pure Sine wave
3.	Input Power Factor at Full Load	>0.90
4.	Input	Three Phase 3 Wire for over 5 KVA
5.	Input Voltage Range	305-475VAC at Full Load
6.	Input Frequency	50Hz +/- 3 Hz
7.	Output Voltage	400V AC, Three Phase for over 5 KVA UPS
8.	Output Frequency	50Hz+/- 0.5% (Free running); +/- 3% (Sync. Mode)
9.	Inverter efficiency	>90%
10.	Over All AC-AC Efficiency	>85%
11.	UPS shutdown	UPS should shutdown with an alarm and indication on following conditions 1)Output over voltage 2)Output under voltage 3)Battery low 4)Inverter overload 5)Over temperature 6)Output Short

S.N.	Parameter	Minimum Specifications
12.	Battery Backup	As per BOQ
13.	Battery	VRLA (Valve Regulated Lead Acid) SMF (Sealed Maintenance Free) Battery
14.	Indicators & Metering	Indicators for AC Mains, Load on Battery, Fault, Load Level, Battery Low Warning, Inverter On, UPS on Bypass, Overload, etc. Metering for Input Voltage, Output Voltage and
15.	Audio Alarm	Battery low, Mains Failure, Over temperature, Inverter overload, Fault etc.
16.	Cabinet	Rack / Tower type
17.	Operating Temp	0 to 40 degrees centigrade

VIDEO WALL (ALONG WITH HARDWARE & SOFTWARE) SOLUTION

5.36 Video-wall Screen

Table 37: Video-wall Screen

S.NO.	Specification Item	Detailed Specification Description
1	**Configuration**	CUBES OF 70" DIAGONAL IN A 2 (C) X 2 (R) CONFIGURATION COMPLETE WITH COVERED BASE STAND
2	**Cube & Controller**	Cube & controller should be from the same manufacturer
3	**Reputed Company**	The OEM should be an established multinational in the field of video walls and should have installations around the world
4	**Chip Type**	1-chip Digital micro mirror device
5	**Resolution**	1920x 1080 native DMD chip resolution
6	**Light Source Type**	Laser light source
7	**Brightness**	Minimum 2200 lumens
8	**Brightness Uniformity**	≥ 90 %
9	**Dynamic Contrast**	1400000:1 or more

S.NO.	Specification Item	Detailed Specification Description
10	**Control**	IP based control to be provided
11	**Remote**	IR remote control should also be provided for quick access
12	**Screen to Screen Gap**	≤ 1.0 mm
13	**Screen Support**	Screen should have an anti-reflective glass backing to prevent bulging
14	**Control BD Input terminals**	Input: 1 x Digital DVI
15		Input: 1 x HDMI
16		Input: 1 x HD-BaseT
17		Input: 1 x Display Port
18		Output: 1 x Digital DVI
19	**Auto color adjust function**	Should provide auto color adjustment function
20		Should be sensor based
21	**Maintenance Access**	Front
22	**Cube Size**	Each cube should have a screen size of 1550 mm wide and 872 mm high (+-2%). Depth of cube shall be 560 mm or less.
23	**Cube control & Monitoring**	Videowall should be equipped with a cube control & monitoring system
24		Provide videowall status including Source , light source ,temperature, fan and power information
25		Should provide a virtual remote on the screen to control the videowall
26		Input sources can be scheduled in " daily", "periodically" or "sequentially" mode per user convenience
27		System should have a quick monitor area to access critical functions of the videowall
28		User should be able to add or delete critical functions from quick monitor area
29		Automatically launch alerts, warnings, error popup windows in case there is an error in the system

S.NO.	Specification Item	Detailed Specification Description
30		User should be able to define the error messages as informational, serious or warning messages
31		Automatically notify the error to the administrator or user through a pop up window and email
32		Status log file should be downloadable in CSV format as per user convenience

5.37.1 Video-wall Controller & Software

Table 38: Video-wall Controller & Software

S. No	Parameter	Indicative Specifications
1	Controller	Controller to control Video wall in a matrix as per requirement along with software's and must support 4x2 in the future
2	Chassis	19” Rack mount
3	Processor options	Single Quad Core Intel® Core™ i7 Quad Core 3.4 GHz processor) or better
4	OS	Supports 64-bit Operating System Windows 7
5	RAM Capacity	16 GB
6	HDD	500 GB
7	Networking	Dual-port Gigabit Ethernet
8	RAID	RAID 1, 5, 10 supports
9	Power Supply	(1+1) Redundant hot swappable
10	Cooling	Any Advanced Proven cooling mechanism
11	Input / Output support	DVI/HDMI/USB/ LAN/ VGA/SATA port
12	Accessories	DVD +RW, Keyboard and mouse
13	Voltage	100-240V @ 50Hz
14	Redundancy support	Power Supply, HDD, LAN port & Controller
15	Scalability	Display multiple source windows in any size, anywhere on the wall
16	Control functions	Brightness / contrast / saturation/ Hue/ Filtering/ Crop / rotate
17	Universal Inputs	Minimum 2
18	Formats	DVI /RGB/Component

19	Input Format	NTSC/ PAL/SECAM
20	Operating Temperature	10°C to 35°C , 80 % humidity
21	Cable & Connections	Vendor should provide all the necessary cables and connectors

Sl. No	Parameter	Minimum Specifications
1	Display & Scaling	Display multiple sources anywhere on display up to any size
2	Input Management	All input sources can be displayed on the video wall in freely resizable and movable windows
3	Scenarios management	Save and Load desktop layouts from Local or remote machines
4	Layout Management	Support all Layout from Video, RGB, DVI, Internet Explorer, Desktop and Remote Desktop Application
5	Multi View Option	Multiple view of portions or regions of Desktop, Multiple Application Can view from single desktop
6	Other features	SMTP support
7		Remote Control over LAN
8		Alarm management
9		Remote management
10		Multiple concurrent client
11		KVM support
12	Cube Management	Cube Health Monitoring
13		Pop-Up Alert Service
14		Graphical User Interface
15	Cube ,Controller & Wall Management Software	Cube , Controller and Wall management Software should be from the same manufacturer

5.37 Operators Client Workstations

Table 39: Operators Client Workstations

Sl. No	Parameter	Minimum Specifications
1	Operating System (OS)	Windows 7 Professional 64Bit, Ultimate or Enterprise, 64-bit

2	CPU/ Memory/HDD	Intel Xeon E5-1620v2 3.7 10M 1866 4C CPU, 32GB DDR3-1600 ECC (4x4GB) RAM, 500GB 7200RPM SATA 1st HDD,
4	Graphics Card	nVidia Geforce GTX760 2gb x 1ea or better
5	Network connection	Gigabit Ethernet (GigE) network connection required
6	Keyboard	Standard Keyboard, Mouse, KVM, Full HD Monitor min 19 inch

5.38 Bill of Quantity and Price Format

Table 40:Bill of Quantity and Price Format

S. No.	Product Description	Make/Model	Qty	Unit Price (INR)	Total (INR)
	WiFi Hotspots Solution				
1.	Wireless Controller with HA	Nos.	1		
2.	Outdoor Access Point	Nos.	50		
3.	Indore Access Point	Nos.	10		
4.	AAA Billing Solution	Nos.	1		
5.	Access Switch (Outdoor Use)	Nos.	25		
6.	Access Point Installation with monitoring accessories as per site requirement	Lot	As required		
7.	Supply & Laying of Cable and other passive components including PVC, HDPE Pipe, Power Cable, Network Cable with required accessories etc.	Lot	As required		
	e-Governance Solution				
8.	E governance modules - Property Tax collection; Integration of Solapur RTS, Payment of bills, Complaint Redressal	Nos.	1		
	Environmental-Solution				
9.	Environmental-Sensor	Nos.	10		
	Surveillance Solution				
10.	Camera Type 1- Panoramic with IP66 Outdoor enclosure	Nos.	30		
11.	Camera Type 2 - Surveillance Cameras - Outdoor, HD Fixed Camera with IR	Nos.	40		
12.	Camera Type 3 - Fixed Camera *4 cameras for number plate detection	Nos.	20+4*		
13.	IP Camera Installation with monitoring accessories as per site requirement	Nos.	As required		
14.	Filed location - Network switch	Nos.	13		
15.	Poles as specified dia > 6 INCH ,concrete filled ,with gi wire inside pole for camera cables. Height 12 meters above ground ,1 meter below ground . Material of pole :GI (For Panoramic Camera and Wifi Hotspot)	Nos.	30		

16.	Poles as specified dia > 6 INCH ,concrete filled ,with gi wire inside pole for camera cables. Height 8 meters above ground , 1 meter below ground . Material of pole :GI (For Fixed Camera and Wifi Hotspot)	Nos.	33		
17.	UPS (60 minutes backup)	Nos.	as required		
18.	Provisioning of Electrical Power	Lot	as required		
19.	Supply & Laying of Cable and other passive components including fibre, PVC, HDPE Pipe, Outdoor Enclosure, Network Rack with accessories etc.	Lot	as required		
20.	Cabling Digging and Restoration cost	Lot	as required		
	Data Center Solution + DR Solution				
21.	City Command Center Software	Lot	1		
22.	Integration Services with WiFi Hotspots for crowd Monitoring (Day 1)	Lot	1		
23.	Integration Services with e-Governance Solution (Day 1)	Lot	1		
24.	Integration Services with Environmental Monitoring (Day 1)	Lot	1		
25.	Integration Services with Public Safety and Safe City Operations (Day 1)	Nos.	1		
26.	City Mobile Apps Services for all use cases (Day 1)	Nos.	1		
27.	Video Management System- Software for Recording Solution	Lot	1		
28.	Video Analytics Type 1 – Object Detection	Nos.	10		
29.	Video Analytics Type 2 - Object Counter	Nos.	10		
30.	Server and Storage for Video Application	Nos.	1		
31.	Firewall with URL Filtering and IP Security Solution	Nos.	2		
32.	Data Center Core switches	Nos.	2		
33.	Data Center Core Routers	Nos.	2		
34.	Data Center Internet Routers	Nos.	2		
35.	Access Switch	Nos.	2		
36.	Load Balancer	Nos.	2		
37.	Networking Cost (Passive Components)	Lot	As required		

38.	Supply of Enterprise management system (EMS) as per technical specification- min 100 nodes	Nos.	1		
39.	Network Management System	Nos.	1		
40.	Backup Software for DC	Nos.	2		
41.	Backup Software and Solution for DR	Nos.	1		
42.	Data Center Site Preparation	Lot	1		
43.	Suitable rack solution for stacking Servers having complete electrical connections	Lot	1		
	Command Center Physical infrastructure				
44.	Site Preparation covering Cubicles, Partitioning, Enclosures, Earthing, Power Cabling etc for 15 Sitting capacity	Lot	1		
45.	Video Wall (along with hardware & software) Solution	Nos.	1		
46.	2 Screen –Operators Client Workstations for Command Control Center and Communication System	Nos.	4		
47.	2 Screen –Operators Client Workstations for Major Smart City Services	Nos.	2		
48.	2 Screen – Video Surveillance Operators	Nos.	2		
49.	Multi-Function Laser Printer	Nos.	1		
50.	UPS (120 minutes backup)	Nos.	1		
51.	Cubicles with Table and Chair for operators (As required) - for 15 operators	Lot	1		
52.	DG Set	Nos.	1		
	Project Management & Project Installation cost				
53.	Detailed systems/site wise survey study of above Systems	Lot	1		
54.	Installation, Configuration and Customization for complete project	Lot	1		
55.	Capacity Building and Administrative Expenses	Lot	as required		
56.	Operations & Maintenance for IT / Non-IT Infrastructure for 5 Years	Lot	as required		

57.	Professional Services - OEM Services for implementation	Lot	as required		
58.	Technical & Operational Manpower Cost after Installation	Lot	as required		
59.	Bandwidth provision as per project requirement	Lot	as required		
	Total				

APPENDIX I

Format 1 – Pre-Qualification Bid Letter

To,

CEO , SCDCL, Solapur City Development Corporation Limited, Near Doodh Diary, Saat Rasta, Solapur , Maharashtra 413003.

Sir/ Madam,

Sub: "**Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Solapur, Maharashtra"**

Reference: RFP No: **<Bid REFERENCE NUMBER>** Dated **<DD/MM/YYYY>**

We, the undersigned Bidder, having read and examined in detail the entire Bid documents do hereby propose to provide the services as specified in the above referred Bid document number along with the following:

1. **Earnest Money Deposit (EMD):** We have enclosed an EMD in the form of a Demand Draft/Bank Guarantee no. _____ dated xx/xxx/xxxx for Rs _____drwan on provison of this RFP.

2. **Contract Performance Bank Guarantee:** We hereby declare that in case the contract is awarded to us, we shall submit the contract performance bank guarantee in the form and General terms Conditions mentioned in this RFP and Contract document.

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

4. We understand that our bid is binding on us and that you are not bound to accept a bid you receive.

Thanking you,

Yours faithfully,

(Signature of the Bidder)

Format 2 – General Information about the Bidder

Details of the Bidder				
1	Name of the Bidder & Address of the Bidder			
2	Status of the Company (Public Ltd/ Pvt. Ltd)			
3	Details of Incorporation of the Company			Date: Ref. #
4	Details of Commencement of Business			Date: Ref. #
5	Company Identification Number (CIN)			
6	Registered Office of the Company:			
7	Composition of the Board of Directors of the Company. Please furnish Name, Designation and their DIN.			
8	Name of Company Secretary of the Company and his/her Membership No.			
9	Name and address of the Statutory Auditors of Company for the Financial years 2013-14, 2014-15 and 2015-16.			
10	Valid Value Added Tax Registration No. & Date			
11	Valid Service Tax Registration No. & Date			
12	Permanent Account Number (PAN)			
13	Name & Designation of the contact person to whom all references shall be made regarding this tender			
14	Telephone No. (with STD Code)			
15	E-Mail of the contact person:			
16	Fax No. (with STD Code)			
17	Website			
	Financial Details (as per audited Balance Sheets) (in Crore)			
	Year	**2013-2014**	**2014-2015**	**2015-2016**

Details of the Bidder				
18	Net Worth			
	Total Turnover			
	PAT			

FORMAT 3 – Compliance & Eligibility Criteria Check List

S/N	Specific Requirements	Documents Required	Compliance Yes/No	Supporting Documents Attached or Not
1				
2				

…….XXX…….

Format 4 – Declaration Letter regarding Black listing

To,

CEO, SCDCL

Solapur City Development Corporation Limited, Near Doodh Diary, Saat Rasta, Solapur

Maharashtra - 413003.

Sir/ Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document [No__] regarding "**Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Solapur, Maharashtra**" for a period of five years. I hereby declare that my company has not been blacklisted by any Ministry of Government of India or by Government of any State in India or by Government of Maharashtra or any of the Government PSUs.

I further certify that I am the Director/Company Secretary and am therefore, competent in my Company to make this declaration.

Name & Designation

Seal

DIN/Membership No. Date:

Business Address:

Yours faithfully,

(Signature of the Bidder)

Format 5 – Unconditional Acceptance of RFP terms and conditions

To,
CEO, SCDCL
Solapur City Development Corporation
Limited, Near Doodh Diary, Saat Rasta,
Solapur

Maharashtra - 413003.

Sir/ Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document [No__] regarding "**Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Solapur Smart City , Maharashtra**" for a period of five years. I declare that all the terms and conditions and provisions of this RFP Document including Scope of Work and SLAs are acceptable to my company.

I further certify that I am the Director/Company Secretary and am therefore, competent in my Company to make this declaration.

Name & Designation:
Seal DIN/Membership No.:
Date:
Business Address:

Yours faithfully,
(Signature of the Bidder)

Format 6 – Annual Sales Turnover Statement

(On Applicant's Statutory Auditor's letterhead)

Date: __/__/__

This is to certify that we M/s_____ are the statutory Auditors of M/s_____ and that the below mentioned calculations are true as per the Audited Financial Statements of M/s_____ for the below mentioned years.

S/N	Turnover	2013-2014	2014-2015	2015-2016
1	Annual Turnover as per Profit and Loss Account			
2	Net worth as per Audited Balance Sheet			
3	Turnover generated solely from Networking (setting up or O&M) and Data Centre (setting up or O&M)			
4	Net Profit as per Profit & Loss Account			

Note: Please upload the Copy of the audited Annual Accounts of the company for the last three years including Balance sheet, Profit & Loss A/c, Directors' Report and Statuary Auditor's Report.

--------xxx-------

Format 7 – Statement of Projects completed of Prescribed Nature & Size

Please fill one separate form for each project according to pre-qualification criteria/eligibility criteria:

S/N	Criteria	Project
1	Implementer Company	
2	Customer's Name	
3	Scope of the Project	Please provide scope of the project, highlight Key Result Areas expected and achieved
4	Value of Project	
5	Did the project involve implementation and/or maintenance of WAN or Data Centre	Yes/No
6	Total No. of nodes	
7	Completion certificate	Yes/No
9	Customer Contact Person's detail	
A	Name	
B	Designation	
C	Email	
D	Phone	
E	Fax	
F	Mailing address	

Note:

1. The Copies of work order and the client certificates for satisfactory completion of the project and showing the order value and cost.
2. Completion certificate of prescribed nature and size as mentioned to be uploaded

…….XXX……..

Format 8 – Technical Bid Letter

(Shall be submitted on Bidder's letterhead duly signed by Authorized signatory)

Date: __/__/__

To,

CEO, SCDCL

Solapur City Development Corporation Limited, Near Doodh Diary, Saat Rasta, Solapur

Maharashtra - 413003.

Sir/ Madam,

Sub: "**Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Solapur, Maharashtra"**

Reference: RFP No: <Bid REFERENCE NUMBER> Dated <DD/MM/YYYY>

We, the undersigned Bidder, having read and examined in detail the entire Bid documents do hereby propose to provide the services as specified in the above referred Bid document number along with the following:

1. We declare that all the services shall be performed strictly in accordance with the bid documents. Further we agree that additional conditions or assumptions, if any, found in the RFP documents shall not be given effect to.
2. We agree to abide by this bid for a period of 180 days from the date of financial bid opening or for any further period for which bid validity is extended and it shall remain binding upon us and Bid may be accepted at any time before the expiration of that period.
3. We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.
4. We understand that our bid is binding on us and that you are not bound to accept a bid you receive.

Thanking you,

Seal Date :

Yours faithfully,

Name &
Designation:

(Signature of the Bidder)

Business
Address:

FORMAT 9 – TECHNICAL COMPLIANCE SHEET

S/N	Name of Item	Make	Model	Supporting Documents
1				
2				
3				
4				

…..XXX…..

Format 10 – Relationship with OEM

Bidder needs to enclose the authorization on OEM's letterhead for direct OEM support for major critical equipment's like routers, switch network device etc. During the contract period, if OEM declares any equipment as end of support for any reasons, OEM has to replace that equipment with better or equivalent products without any cost to SCDCL. OEM has to also submit on their letter head, complete details on the support available for the equipment, their end of ssupport dates and replacement model if any. Format enclosed:

"Format for Certificate of Support from OEM"

To, Date :

CEO , SCDCL

Solapur City Development Corporation Limited, Near Doodh Diary, Saat Rasta, Solapur

Maharashtra - 413003.

Subject: Support for "<Name of OEM>" Inventory installed and in use for" _____"

Reference: RFP No: <Bid Ref. NUMBER> Dated <DD/MM/YYYY>

Certified that the hardware / software proposed by M/s _, for which our company,

"Name of OEM" is the OEM, has been quoted for support in the bid.

Subject to existence of valid pre-purchased support contract with "<Name of OEM>" we undertake to provide the following:

1. TAC Support for operation, maintenance and upgrade of the quoted product on 24 x 7 basis up to _.
2. RMA replacement when required identified and approved by "Name of OEM" Technical Team (with an equivalent or upgrade model)

3. Full support towards migration to IPV6 for the network by studying planning , designing and recommending the migration path and methodology.

We also certify that the Bidder and “Name of OEM” have agreed to execute agreement in the above respect subject to the Bidder being selected for the Project and Bidder loading support order on “Name of OEM”, a copy of same shall be shared with you, with in 1 month of ordering of support by Bidder.

For Partner
For OEM

Authorized signatory of Bidder Authorized signatory of OEM

<<BILL OF MATERIAL>>

…..XXX…..

Format 11 – Proposed Technical Solution

1. The Bidder is required to describe the proposed Technical Solution in this section. Following should be captured in the explanation:

   - 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
   - Extent of compliance to functional and technical requirements specified in the scope of work
   - Technical Design and clear articulation of benefits to Govt. of various components of the solution vis-à-vis other options available.
   - 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.
   - Strength of the Bidder to provide services including examples or case-studies of similar solutions deployed for other clients
   - Integration approach with existing Infrastructure
   - Bidder shall provide a detailed project plan with timelines, handing over and taking over process, resource allocation, milestones etc. for setting up of required ICT infrastructure and its Operations & Maintenance.

2. The Bidder should provide detailed design and sizing calculation for the following listing all assumptions that have been considered:

   - Supply, Installation and commissioning of ICT Infrastructure
   - Operations & Maintenance
   - Help Desk Services
   - Escalation Plan
   - Training Content and Schedules
   - System Maintenance & Management
   - Network / Security Administration

3. 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.

4. Make & Model of all IT as well as non IT components along with datasheets highlighting the Technical Specification parameters in each datasheet for compliances

5. CVs of the Key Manpower proposed

…..XXX…..

Format 12 – Project Management Plan

The Bidder shall give detailed description of Project management Plan it plans to implement as a part of the Project " "

Any best practices that it would use could also be mentioned .Typical questions that would need to be answered include:

1. What kind of hierarchy for Project Management does the Bidder propose?
2. What issues generally arise with regard to Project management of WAN and Data Centre Projects?
3. How the Bidder plans to mitigate any risks with regard to project management?
4. How Bidder proposes to deploy manpower for Up-gradation and O&M Operations?
5. Take Over Plan

…..XXX…..

Format 13 – Core Project Team

Bidder shall provide a detailed description of the proposed Core Project Team to be deployed for the O&M of the project " '". The description should include details about the Project Team hierarchy and detailed explanation of the role to be played by each individual that would be part of the O&M team

…..XXX…..

Format 14

Format of Earnest Money Deposit in the form of Bank Guarantee

Ref **:** **Bank Guarantee No. :**

Date:

To,

CEO, SCDCL
Solapur City Development
Corporation Limited, Near Doodh
Diary, Saat Rasta, Solapur

Maharashtra -

413003.

Whereas ---------- (here in after called "the Bidder") has submitted its bid dated ---------- in response to" **RFP for Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Solapur, Maharashtra**" the KNOW ALL MEN by these presents that WE ---------- having our registered office at ---------- (hereinafter called "the Bank") are bound unto the Solapur Municipal Corporation in the sum of ---------- for which payment well and truly to be made to Solapur Municipal Corporation, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this ----------day of ---------- 2016

THE CONDITIONS of this obligation are:

1. The E.M.D. may be forfeited:
    a. if a Bidder withdraws its bid during the period of bid validity
    b. Does not accept the correction of errors made in the tender document;
    c. In case of a successful Bidder, if the Bidder fails:
        i. To sign the Contract as mentioned above within the time limit stipulated by purchaser or
        ii. To furnish performance bank guarantee as mentioned above or
        iii. If the bidder is found to be involved in fraudulent practices.
        iv. If the bidder fails to submit the copy of purchase order & acceptance thereof.

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without SCDCL/ Purchaser having to substantiate its demand, provided that in its demand SCDCL will specify that the amount claimed by it is due to it owing

to the occurrence of any of the abovementioned conditions, specifying the occurred condition or conditions. This guarantee will remain valid up to 9 months from the last date of bid submission. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the OWNER/PURCHASER and further agrees that the guarantee herein contained shall continue to be enforceable till the OWNER/PURCHASER discharges this guarantee.

The Bank shall not be released of its obligations under these presents by any exercise by the OWNER/PURCHAER of its liability with reference to the matters aforesaid or any of them or by reason or any other acts of omission or commission on the part of the OWNER/PURCHASER or any other indulgence shown by the OWNER/PURCHASE or by any other matter or things.

The Bank also agree that the OWNER/PUCHASER at its option shall be entitled to enforce this Guarantee against the Bank as a Principal Debtor, in the first instance without proceeding against the SELLER and not withstanding any security or other guarantee that the OWNER/PURCHASER may have in relation to the SELLER's liabilities.

Dated at_____on this_____day of _2017.

_____

Signed and delivered by

_____

For & on Behalf of

Name of the Bank & Branch & Its official Address

Approved Bank: Any Nationalized Bank operating in India having branch at Solapur.

Format 15: Format for Performance Bank Guarantee

Ref : Bank Guarantee No. :

Date :

To

CEO , SCDCL
Solapur City Development
Corporation Limited, Near Doodh
Diary, Saat Rasta, Solapur

Maharashtra - 413003.

Dear Sir,

WHEREAS..... (Name of Bidder) hereinafter called "the Bidder" has undertaken, in pursuance of Agreement dated, (hereinafter referred to as "the Agreement for "**RFP for Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Solapur, Maharashtra**

", for the M/s Smart City Solapur Development Limited ("SCDCL")

AND WHEREAS it has been stipulated in the said Agreement that the Bidder shall furnish a Bank Guarantee ("the Guarantee") from a scheduled bank for the sum specified therein as security for implementing PROJECT.

1. WHEREAS we _____ ("the Bank", which expression shall be deemed to include it successors and permitted as Signs) have agreed to give the Maharashtra ISP Services Limited ("GISL") the Guarantee: THEREFORE the Bank hereby agrees and affirms as follows:

   The Bank hereby irrevocably and unconditionally guarantees the payment of all sums due and payable by the Bidder to SCDCL under the terms of their Agreement dated _____. Provided, however, that the maximum liability of the Bank towards SCDCL under this Guarantee shall not, under any circumstances, exceed _____ in aggregate.

2. In pursuance of this Guarantee, the Bank shall, immediately upon the receipt of a written notice from SCDCL in that behalf and without delay/demur or set off, pay to SCDCL any and all sums demanded by SCDCL under the said demand notice, subject to the maximum limits specified in Clause 1 above. A notice from SCDCL to the Bank shall be sent by Registered Post (Acknowledgement Due) at the following address:

   Attention Mr. _____.

3. This Guarantee shall come into effect immediately upon execution and shall remain in force for a period of _months from the date of its execution. The Bank shall extend the Guarantee for a further period which may mutually decided by the bidder and SCDCL.

The liability of the Bank under the terms of this Guarantee shall not, in any manner whatsoever, be modified, discharged, or otherwise affected by:

- Any change or amendment to the terms and conditions of the Contract or the execution of any further Agreements.

- Any breach or non-compliance by the Bidder with any of the terms and conditions of any

Agreements/credit arrangement, present or Future, between Bidder and the Bank.

4. The BANK also agrees that SCDCL at its option shall be entitled to enforce this Guarantee against the Bank as a Principal Debtor, in the first instance without proceeding against the BIDDER and not withstanding any security or other guarantee that SCDCL may have in relation to the Bidder's liabilities.

5. The BANK shall not be released of its obligations under these presents by reason of any act of omission or commission on the part of SCDCL or any other indulgence shown by SCDCL or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the BANK.

6. This Guarantee shall be governed by the laws of India and the courts of Solapur shall have jurisdiction in the adjudication of any dispute which may arise hereunder.

Dated this ……. Day of ……..,2017

Witness

(Signature)
(Signature)

(Name) Bank
Rubber Stamp

(Name)

(Official Address) Designation with Bank Stamp Plus Attorney as per Power of Attorney No.

Dated:

Format 16: Pending Litigation

Pending Litigation: All pending litigation shall in total not represent more than **20%** of the Applicant's net worth and shall be treated as resolved against the Applicant.

1. Pending Litigation

Pending Litigation				
☐ No pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.2. ☐ Pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.2 as indicated below.				
Year of dispute	**Amount in dispute**	**Outcome as Percentage of Net Worth**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and USD equivalent)**
[insert year]	*[insert amount]*	*[insert percentage]*	Contract Identification: *[indicate complete contract name, number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Matter in dispute: *[indicate main issues in dispute]* Status of dispute: *[Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]*	*[insert amount]*

2. Litigation History

Litigation History		
☐ No court/arbitral award decisions against the Applicant since 1st January *[insert year],* in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.3. ☐ Court/ arbitral award decisions against the Applicant since 1st January *[insert year],* in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.3 as indicated below.		
Year of award	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and USD equivalent)**
[insert year]	Contract Identification: *[indicate complete contract name, number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Matter in dispute: *[indicate main issues in dispute]* Party who initiated the dispute: *[indicate "Employer" or "Contractor"]* Status of dispute: *[indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]*	*[insert amount]*

APPENDIX-II

QUALIFICATION PROPOSAL

Form-1

Letter of Proposal

(On Bidder's letter head)

(Date and Reference)

To,

_____

_____

_____

Sub: Request for proposal for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1)

Dear Sir,

With reference to your RFP Document dated....., I/we, having examined all relevant documents and understood their contents, hereby submit our Proposal for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1). The proposal is unconditional and unqualified.

1. All information provided in the Proposal and in the Appendices is true and correct and all documents accompanying such Proposal are true copies of their respective originals.
2. This statement is made for the express purpose of appointment as the SI for the aforesaid Project.
3. I/We shall make available to the SCDCL any additional information it may deem necessary or require for supplementing or authenticating the Proposal.
4. I/We acknowledge the right of the SCDCL to reject our proposal without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.
5. I/We certify that in the last three years, we or any of our Associates have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder, nor been expelled from any project or contract by any public authority nor have had any contract terminated by any public authority for breach on our part.
6. I/We declare that:
   a) I/We have examined and have no reservations to the RFP Documents, including any Addendum issued by the SCDCL;

b) I/We do not have any conflict of interest in accordance with Clause **Error! Reference source not found.** of the RFP Document;

c) I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in Clause **Error! Reference source not found.** of the RFP document, in respect of any tender or request for proposal issued by or any agreement entered into with the SCDCL or any other public sector enterprise or any government, Central or State; and

d) I/We hereby certify that we have taken steps to ensure that in conformity with the provisions of Section 4 of the RFP, no person acting for us or on our behalf will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice.

7. I/We understand that you may cancel the Selection Process at any time and that you are neither bound to accept any Proposal that you may receive nor to select the SI, without incurring any liability to the Bidders in accordance with Clause **Error! Reference source not found.** of the RFP document.

8. I/We certify that in regard to matters other than security and integrity of the country, we or any of our Associates have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which would cast a doubt on our ability to undertake the Consultancy for the Project or which relates to a grave offence that outrages the moral sense of the community.

9. I/We further certify that in regard to matters relating to security and integrity of the country, we have not been charge-sheeted by any agency of the Government or convicted by a Court of Law for any offence committed by us or by any of our Associates.

10. I/We further certify that no investigation by a regulatory authority is pending either against us or against our Associates or against our CEO or any of our Directors/Managers/ employees.

11. I/We hereby irrevocably waive any right or remedy which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by the SCDCL [and/ or the Government of India] in connection with the selection of SI or in connection with the Selection Process itself in respect of the above mentioned Project.

12. The Bid Security of Rs. ***** (Rupees *****) in the form of a Demand Draft is attached, in accordance with the RFP document.

13. I/We agree and understand that the proposal is subject to the provisions of the RFP document. In no case, shall I/we have any claim or right of whatsoever nature if the Implementation for the Project is not awarded to me/us or our proposal is not opened or rejected.

14. I/We agree to keep this offer valid for 180 (one hundred and eighty) days from the Proposal Due Date specified in the RFP.

15. A Power of Attorney in favor of the authorized signatory to sign and submit this Proposal and documents is attached herewith in Form 4.

16. In the event of my/our firm being selected as the SI, I/we agree to enter into an Agreement in accordance with the format Schedule-2 of the RFP. We agree not to seek any changes in the aforesaid form and agree to abide by the same.
17. I/We have studied RFP and all other documents carefully and also surveyed the Project site. We understand that except to the extent as expressly set forth in the Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by the SCDCL or in respect of any matter arising out of or concerning or relating to the Selection Process including the award of Consultancy.
18. The Financial Proposal is being submitted in a separate cover. This Qualification Document, the Technical Proposal and the Financial Proposal shall constitute the Proposal which shall be binding on us.
19. I/We agree and undertake to abide by all the terms and conditions of the RFP Document. In witness thereof, I/we submit this Proposal under and in accordance with the terms of the RFP Document.

Yours faithfully,

(Signature, name and designation of the authorized signatory)

(Name and seal of the Bidder)

Form-2

Statement of Legal Capacity

(To be forwarded on the letter head of the Bidder)

Ref. Date:

To,

_____,

_____

_____

Dear Sir,

Sub: Request for proposal for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1)

I/We hereby confirm that we, the Bidder, satisfy the terms and conditions laid down in the RFP document.

I/We have agreed that (insert individual's name) will act as our Authorized Representative on our behalf and has been duly authorized to submit our Proposal. Further, the authorized signatory is vested with requisite powers to furnish such proposal and all other documents, information or communication and authenticate the same.

Yours faithfully,

(Signature, name and designation of the authorized signatory)

For and on behalf of ……

Please strike out whichever is not applicable

Form-3

Power of Attorney

Know all men by these presents, we, (name of Firm and address of the registered office) do hereby constitute, nominate, appoint and authorize Mr. / MS son/daughter/wife and presently residing at , who is presently employed with us and holding the position of as our true and lawful attorney (hereinafter referred to as the "Authorized Representative") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our Request for proposal for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1), proposed to be developed by the Solapur City Development Corporation Limited (the "SCDCL") including but not limited to signing and submission of all applications, proposals and other documents and writings, participating in pre-bid and other conferences and providing information/ responses to the SCDCL, representing us in all matters before the SCDCL, signing and execution of all contracts and undertakings consequent to acceptance of our proposal and generally dealing with the SCDCL in all matters in connection with or relating to or arising out of our Proposal for the said Project and/or upon award thereof to us till the entering into of the Agreement with the SCDCL.

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

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

20**

For ……

(Signature, name, designation and address)

Witnesses:

1.

2.

Notarized Accepted

……..

(Signature, name, designation and address of the Attorney)

Notes:

The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure. The Power of Attorney should be executed on a non-judicial stamp paper of Rs. 100 (one hundred) and duly notarized by a notary public.

Wherever required, the Bidder should submit for verification the extract of the charter documents and other documents such as a resolution/power of attorney in favor of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.

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

Form-4

FORMAT FOR POWER OF ATTORNEY FOR LEAD MEMBER OF CONSORTIUM

(On Non – Judicial stamp paper of Rs 100/- or such equivalent amount and Document duly attested by notary public)

Power of Attorney

Whereas Solapur City Development Corporation Limited has invited applications from interested parties for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1) in Solapur City of Maharashtra.

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

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

NOW THIS POWER OF ATTORNEY WITNESSTHAT;

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

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

Dated this the ……Day of …….2017

…… (Executants)

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

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

Form-5

FORMAT FOR MEMORANDUM OF UNDERSTANDING (MOU) FOR JOINT BIDDING

(On Non – judicial stamp paper of Rs 100/- or of appropriate value
and Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of 2017 at _____ among _____ and _____ and _____ having its registered office at, _____ (hereinafter referred as"_____", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part and_____ and _____ having its registered office at _____, (hereinafter referred as"_____", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part _____ and _____

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

WHEREAS Request for proposal for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1) in Solapur City of Maharashtra ("Project") as per the terms contained in the RFP Document.

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

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

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:
2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with the terms of the Contract Agreement to be executed on award of such Projects.
3. That this MoU shall be governed in accordance with the laws of Land(India) and courts in Solapur shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

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

First Party

Second Party

Party Witness:

1.-------

2.--------

APPENDIX-III

Form-1

Financial Capacity of the Bidder

S. No.	Financial Year	Annual Revenue (Rs. crore)
1.	Financial Year 2011-12	
2.	Financial Year 2012-13	
3.	Financial Year 2013-14	
4.	Financial Year 2014-15	
5.	Financial Year 2015-16	

I, on behalf of Bidder [insert company name], hereby certify that ……..……..…… (Name of the Bidder) has received the payments shown above against the respective years on account of professional fees.

Name of the Power of Attorney holder:

Seal of the firm

Date:

(Signature, name and designation of the authorized signatory)

APPENDIX-III

Form-2

Particulars of Key Personnel

S. No.	Designation of Key Personnel	Name	Educational Qualification	Length of Professional Experience	Present Employment		No. of Eligible Assignments*
					Name of Firm	Employed Since	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. 2. 3. 4. 5. 6.							

APPENDIX-III

Form-4

Abstract of Eligible Assignments of the Bidder#

S. No	Name of Project	Name of Client	Estimated capital cost of Project (in Rs. Crore / US$ million)	Payment of professional fees received by the Bidder (in Rs. Lakh)
(1)	(2)	(3)	(4)	(5)
1				
2				
3				
4				

The Bidder should provide details of only those projects that have been undertaken by it under its own name.

Exchange rate should be taken as Rs. 67 per US $ for conversion to Rupees.

* The names and chronology of Eligible Projects included here should conform to the project- wise details submitted in Form-6 of Appendix-II.

Certificate from the Statutory Auditor[$]

This is to certify that the information contained in Column 5 above is correct as per the accounts of the Applicant and/ or the clients.

Name of audit firm:

Seal of the audit firm:

Date:

(Signature, name and designation of the authorized signatory)

$ In case the Applicant does not have a statutory auditor, it shall provide the certificate from its chartered accountant that ordinarily audits the annual accounts of the Applicant.

Note:

1. *The Bidder may attach separate sheets to provide brief particulars of other relevant experience of the Bidder.*
2. *Completion certificate and Work Order from respective Authority covering Scope, Cost and project duration shall be enclosed for all Assignments being submitted for evaluation.*

APPENDIX-III

Form-5

Abstract of Eligible Assignments of Key Personnel®

*(Refer Clause **Error! Reference source not found.** and **Error! Reference source not found.**)*

Name of Key Personnel: Designation:

S. No	Name of Project*	Name of Client	Estimated capital cost of project (in Rs crore / US$ million)	Name of firm for which the Key Personnel worked while executing the mandate	Designation of the Key Personnel on the assignment	Date of completion of the assignment	Mandays spent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

@ Use separate Form for each Key Personnel.

* The names and chronology of projects included here should conform to the project-wise details submitted in Form-7 of Appendix-II.

Note: The Bidder may attach separate sheets to provide brief particulars of other relevant experience of the Key Personnel.

APPENDIX-III

Form-6

Eligible Assignments of Bidder

*(Refer Clause **Error! Reference source not found.** and **Error! Reference source not found.**)*

Name of Bidder:	
Name of the Project:	
Description of services performed by the Bidder	
Name of client and Address:(Indicate whether public or private entity)	
Name, telephone no. and fax no. of client's representative:	
Quantum of Municipal Solid Waste handled under the Project (in tons per day)	
Status of Project	(Completed / On-going) Please delete as applicable
Professional fees received for the assignment	
Whether completed in 5 (five) years preceding PDD	(Yes / No) Please delete as applicable
Start date and finish date of the services (month/ year):	Start Date (month/ year): End Date (month/ year):
Brief description of the Project:	

Notes:

1. Use separate sheet for each Eligible Project.
2. The Bidder may attach separate sheets to provide brief particulars of other relevant experience of the Bidder.
3. Exchange rate should be taken as Rs. 67 per US $ for conversion to Rupees.

APPENDIX-III

Form-7

Eligible Assignments of Key Personnel

Name of Key Personnel:	
Designation of Key Personnel in executing the respective Project:	
Name of the Project:	
Name of Firm where employed:	
Description of services performed by the Key Personnel	
Name of client and Address: (indicate whether public or private)	
Name, telephone no. and fax no. of client's representative:	
Estimated capital cost of the Project (in Rs. crore or US$ million):	
Start date and finish date of the services (month/ year):	Start Date (month/ year): End Date (month/ year):
Brief description of the Project:	
It is certified that the aforesaid information is true and correct to the best of my knowledge and belief. (Signature and name of Key Personnel)	

Notes:

1. Use separate sheet for each Eligible Project.
2. The Bidder may attach separate sheets to provide brief particulars of other relevant experience of the Key Personnel.

APPENDIX-III

Form-8

Curriculum Vitae (CV) of Key Personnel

(The relevant assignments should be reflective of the requirements as mentioned in clause 2.1.3)

1.	**Proposed Position**	:				
2.	**Name of Firm**	:				
3.	**Name of Staff**	:				
4.	**Date of Birth**	:		**Nationality :**		
5.	**Education**	:				
6.	**Membership of Professional Associations**	:				
7.	**Years of Experience**	:				
8.	**Countries of Work Experience**	:				
9.	**Languages**			**Speak**	**Read**	**Write**
10.	**Employment Record**	:				
	From: Employer: Position Held :		**TO:**			
11.	**Detailed Tasks Assigned**		**12. Work Undertaken That Best Illustrates Capability To Handle The Tasks Assigned**			
			Name of assignment or project: **Year**: **Location:** **Client:** **Main project features:** **Positions held:** **Activities performed:**			

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

I also certify that I am willing to work on the Project and I will be available for entire duration of the Project assignment as required.

_____ Date: _____

[Signature of staff member and authorized representative of the Firm] Day/Month/Year

Full name of staff member: _____

Full name of authorized representative: _____

Notes:

1. Use separate form for each Key Personnel
2. The names and chronology of assignments included here should conform to the project-wise details submitted in Form-5 of Appendix-II.
3. Each page of the CV shall be signed in ink by both the Personnel concerned and by the Authorized Representative of the Bidder firm along with the seal of the firm. Photocopies will not be considered for evaluation.

APPENDIX-III

Form-9

Proposed Methodology and Work Plan

The proposed methodology and work plan shall be described as follows:

1. Understanding of Scope (not more than two pages)

   The Bidder shall clearly state its understanding of the scope and also highlight its important aspects. The Bidder may supplement various requirements of the scope and also make precise suggestions if it considers this would bring more clarity and assist in achieving the Objectives laid down in the RFP.

2. Methodology and Work Plan (not more than three pages)

   The Bidder will submit its methodology for carrying out this assignment, outlining its approach toward achieving the Objectives laid down in the RFP. The Bidder will submit a brief write up on its proposed team and organization of personnel explaining how different areas of expertise needed for this assignment have been fully covered by its proposal. The Bidder should specify the sequence and locations of important activities, and provide a quality assurance plan for carrying out the Services.

Note: Marks will be deducted for writing lengthy and out of context responses.

APPENDIX-IV

FINANCIAL PROPOSAL

Form-1

Covering Letter

(On Bidder's letter head)

(Date and Reference)

To,

_____,

_____

_____

Dear Sir,

Subject: Request for proposal for Selection of System Integrator for Implementation of Command and Control Center for Solapur under Smart Cities Mission.(Phase 1)

I/We, (Bidder's name) herewith enclose the Financial Proposal for selection of my/our firm as SI for above.

I/We agree that this offer shall remain valid for a period of 180 (one hundred and eighty) days from the Proposal Due Date or such further period as may be mutually agreed upon.

Yours faithfully,

(Signature, name and designation of the authorized signatory)

Note: The Financial Proposal is to be submitted strictly as per forms given in the RFP.

Form-2

Financial Proposal

S. No.	Product Description	Make/Model	Qty	Unit Price (INR)	Total (INR)
	WiFi Hotspots Solution				
1.	Wireless Controller with HA	Nos.	1		
2.	Outdoor Access Point	Nos.	50		
3.	Indore Access Point	Nos.	10		
4.	AAA Billing Solution	Nos.	1		
5.	Access Switch (Outdoor Use)	Nos.	25		
6.	Access Point Installation with monitoring accessories as per site requirement	Lot	As required		
7.	Supply & Laying of Cable and other passive components including PVC, HDPE Pipe, Power Cable, Network Cable with required accessories etc.	Lot	As required		
	e-Governance Solution				
8.	E governance modules - Property Tax collection; Integration of Solapur RTS, Payment of bills, Complaint Redressal	Nos.	1		
	Environmental-Solution				
9.	Environmental-Sensor	Nos.	10		
	Surveillance Solution				
10.	Camera Type 1- Panoramic with IP66 Outdoor enclosure	Nos.	30		
11.	Camera Type 2 - Surveillance Cameras - Outdoor, HD Fixed Camera with IR	Nos.	40		
12.	Camera Type 3 - Fixed Camera *4 cameras for number plate detection	Nos.	20+4*		
13.	IP Camera Installation with monitoring accessories as per site requirement	Nos.	As required		
14.	Filed location - Network switch	Nos.	13		
15.	Poles as specified dia > 6 INCH ,concrete filled ,with gi wire inside pole for camera cables. Height 12 meters above ground ,1 meter below ground .	Nos.	30		

S. No.	Product Description	Make/Model	Qty	Unit Price (INR)	Total (INR)
	Material of pole :GI (For Panoramic Camera and Wifi Hotspot)				
16.	Poles as specified dia > 6 INCH ,concrete filled ,with gi wire inside pole for camera cables. Height 8 meters above ground , 1 meter below ground . Material of pole :GI (For Fixed Camera and Wifi Hotspot)	Nos.	33		
17.	UPS (60 minutes backup)	Nos.	as required		
18.	Provisioning of Electrical Power	Lot	as required		
19.	Supply & Laying of Cable and other passive components including fibre, PVC, HDPE Pipe, Outdoor Enclosure, Network Rack with accessories etc.	Lot	as required		
20.	Cabling Digging and Restoration cost	Lot	as required		
	Data Center Solution + DR Solution				
21.	City Command Center Software	Lot	1		
22.	Integration Services with WiFi Hotspots for crowd Monitoring (Day 1)	Lot	1		
23.	Integration Services with e-Governance Solution (Day 1)	Lot	1		
24.	Integration Services with Environmental Monitoring (Day 1)	Lot	1		
25.	Integration Services with Public Safety and Safe City Operations (Day 1)	Nos.	1		
26.	City Mobile Apps Services for all use cases (Day 1)	Nos.	1		
27.	Video Management System- Software for Recording Solution	Lot	1		
28.	Video Analytics Type 1 – Object Detection	Nos.	10		
29.	Video Analytics Type 2 - Object Counter	Nos.	10		
30.	Server and Storage for Video Application	Nos.	1		
31.	Firewall with URL Filtering and IP Security Solution	Nos.	2		

S. No.	Product Description	Make/Model	Qty	Unit Price (INR)	Total (INR)
32.	Data Center Core switches	Nos.	2		
33.	Data Center Core Routers	Nos.	2		
34.	Data Center Internet Routers	Nos.	2		
35.	Access Switch	Nos.	2		
36.	Load Balancer	Nos.	2		
37.	Networking Cost (Passive Components)	Lot	As required		
38.	Supply of Enterprise management system (EMS) as per technical specification- min 100 nodes	Nos.	1		
39.	Network Management System	Nos.	1		
40.	Backup Software for DC	Nos.	2		
41.	Backup Software and Solution for DR	Nos.	1		
42.	Data Center Site Preparation	Lot	1		
43.	Suitable rack solution for stacking Servers having complete electrical connections	Lot	1		
	Command Center Physical infrastructure				
44.	Site Preparation covering Cubicles, Partitioning, Enclosures, Earthing, Power Cabling etc for 15 Sitting capacity	Lot	1		
45.	Video Wall (along with hardware & software) Solution	Nos.	1		
46.	2 Screen –Operators Client Workstations for Command Control Center and Communication System	Nos.	4		
47.	2 Screen –Operators Client Workstations for Major Smart City Services	Nos.	2		
48.	2 Screen – Video Surveillance Operators	Nos.	2		
49.	Multi-Function Laser Printer	Nos.	1		
50.	UPS (120 minutes backup)	Nos.	1		

S. No.	Product Description	Make/Model	Qty	Unit Price (INR)	Total (INR)
51.	Cubicles with Table and Chair for operators (As required) - for 15 operators	Lot	1		
52.	DG Set	Nos.	1		
	Project Management & Project Installation cost				
53.	Detailed systems/site wise survey study of above Systems	Lot	1		
54.	Installation, Configuration and Customization for complete project	Lot	1		
55.	Capacity Building and Administrative Expenses	Lot	as required		
56.	Operations & Maintenance for IT / Non-IT Infrastructure for 5 Years	Lot	as required		
57.	Professional Services - OEM Services for implementation	Lot	as required		
58.	Technical & Operational Manpower Cost after Installation	Lot	as required		
59.	Bandwidth provision as per project requirement	Lot	as required		
A	**Total**				
B	**All Applicable Local Taxes (including Service Tax)**				
	Total (including taxes) (A+B) (in Rs.) In Indian Rupees in figures in words				

Note:

1. The financial evaluation shall be based on the above Financial Proposal
2. Bidder to include the cost of required facilities (such as office space, furniture etc.) in the above quote.
3. No escalation on any account will be payable on the above amounts.
4. All payments shall be made in Indian Rupees and shall be subject to applicable Indian laws withholding taxes if any.

SECTION 5

Service Level Agreement (SLA's)

&

Penalties

5. Service Level Agreement

SLA defines the terms of the successful bidder's responsibility in ensuring the performance of the network based on the agreed performance indicators as detailed in the agreement. Successful bidder has to co-ordinate with ISP and get the complaint closed and also has to produce documentary evidence regarding failure of Bandwidth by ISP & not by Network equipment's.

- The table below summarizes the performance indicators for the services to be offered by the bidder-

S/N	SLA Terms	Description
1	Network Backbone	'Network Backbone' refers to Internet Protocol (IP) based routing infrastructure at which, successful bidder has installed network devices for city Wide Area Network.
2	Uptime	'Uptime' refers to network backbone availability across various segments of City wide area network i.e. between Zonal office and ward offices and ward offices and junction/locations. "%Uptime" means ratio of 'up time' (in minutes) in a month to Total time (in minutes) in the month
3	Latency	'Latency' refers to the average time required for round-trip packet transfers between Selected Junctions/locations on the selected portions of the network Backbone during a calendar month.
4	Packet Loss	'Packet Loss' refers to the average percentage of IP packets transmitted between Selected Junctions/locations during a calendar month that are
5	Planned Network Outage	'Planned Network Outage' refers to unavailability of network services due to infrastructure maintenance activities such as configuration changes, up gradation or changes to any supporting infrastructure. Details related to such planned outage shall be approved by the SCDCL or authorized authority and shall be notified to all the concerned stakeholder in advance (at least five working days). It is desirable that such outage shall be taken on Sundays or other Government holidays to the extent possible.
6	Unplanned Network Outage	'Unplanned Network Outage' refers to an instance in which no traffic can pass in or out through which users are connects to the network Backbone
7	Not-keeping CCC up to date	If Successful Bidder has to keep proper cooling, electrification, cabling, cleanliness, hygiene and safety requirements and other required infrastructure of CCC in working condition and up to date as per the scope of the RFP.

8	Not keeping man-power	If successful bidder does not deploy the required specified quantity & quality of manpower as per RFP or a person deployed is not reporting to the duty, there would be a penalty per person per day as defined in below table and will be deducted from the quarterly payment
9	Accuracy of ANPR System	a) Number plate in Standard format: 80% or higher b) Number plate in non-standard format: Marathi or Hindi 75% or higher

<table>
<tr><th>S/</th><th>SLA Terms</th><th>Description</th></tr>
<tr><td>10</td><td>Incidence Resolution (Network)</td><td>The network outage, security or performance related issues impacting the network

availability/performance and leading to unavailability of the services. Resolution of incidence as per below priority Levels:

▯ L1 Level Severity: Impacting DC or Command & Control Center.
▯ L2 Level Severity: impacting one or more Zones.
▯ L3 Level Severity: Impacting one or Junctions/ Endpoints/ Offices
▯ L4 Level Severity: Impacting one or more end devices/utilities
<table>
<tr><th>#</th><th>Severity</th><th>Initial Response Time</th><th>Issue Resolution Time</th></tr>
<tr><td>1</td><td>Level 1</td><td>45 Mins</td><td>1 Hour</td></tr>
<tr><td>2</td><td>Level 2</td><td>90 Mins</td><td>2 Hours</td></tr>
<tr><td>3</td><td>Level 3</td><td>120Mins</td><td>4Hours</td></tr>
<tr><td>4</td><td>Level 4</td><td>240 Mins</td><td>24 Hours</td></tr>
</table>
</td></tr>
<tr><td>11</td><td>Incidence Resolution (DC)</td><td>▯ Priority Level 1 Incident - Within 1 hr.
▯ Priority Level 2 Incident - Within 12 hr.
▯ Priority Level 3 Incident - Within 24 hr.
▯ Note: Incidents will be logged in the Helpdesk and the O&M Agency will have to resolve the incident and provide necessary updates through the Help Desk Portal and co-ordinate with the stakeholders. Root Cause should be identified for all incidents; if root cause is not identified then additional penalties will be levied.</td></tr>
</table>

12	Security Breach	▯ Detection of security Breach - within 60 minutes ▯ Mitigation of Security Breach - within 1.5 hr. from the time of Breach ▯ **Note:** The security breach will include but not limited to successful penetration of any Virus, trojan, malwares, zero-day attacks, intrusion, Denial of Service Attacks, etc., up to the server level. In case of any compromise of data due to the Security Breach then double penalty will be levied (this will not be counted within the maximum penalty cap limit).
13	Request Resolution (DC)	▯ Priority Level 1 Incident - Within 4 hr. ▯ Priority Level 2 Incident - Within 24 hr. ▯ Priority Level 3 Incident - Within 36 hr. ▯ **Note:** Requests (like password reset, firewall port opening, hardening, etc.) will be logged in the Helpdesk and the successful bidder will have to resolve the request and provide necessary updates through the Help Desk Portal and co-ordinate with the stakeholders.

- Successful Bidder shall be paid Quarterly Payment (QP) as per the services provided to SCDCL. The overall penalty would be generally capped at 10% of QP amount. If the cap of overall penalty is reached in two consecutive quarters, the penalty cap for the third quarter onwards, for each quarter will increase by 5% over the penalty cap for the preceding quarter till it reaches 20% of the QP. In addition to the applicable penalty and the provisions pertaining to closure/termination of contract, the SCDCL shall be within its rights to undertake termination of contract if or anytime the penalty increases by 15% of the QP. Once the penalty cap has increased beyond 10%, if the bidder through better performance delivery for any quarter, brings the leviable penalty below 10% then the computation of the 1st of the 2 consecutive quarters as referred above will reset and will begin afresh. Availability will be calculated on a quarterly basis.
- Appropriate Penalties will be recovered from the quarterly payment if successful bidder is not able to achieve required Service levels as mentioned below:

S / N	SLA	Target	Penalties
1	Delay in Delivery of Hardware	T+60 days	0.5% of Contract value of undelivered/delayed hardware (as per Schedule-I of Price BID) per week or part thereof for delay in delivery Delay beyond T+90days SCDCL may terminate the contract and Forfeit the PBG.

2	Delay in Implementation	T+120 days	0.75% of Contract value of delayed part (as per Schedule-I of Price BID) per week or part thereof for delay in implementation Delay Beyond T+150 days SCDCL may terminate the contract and Forfeit the PBG)
3	Delay in FAT	T + 180 days	0.10% of Contract value (as per Schedule-I of Price
4	Network availability between Zonal and Junctions/locations	99.00%	99.00% or Better= NIL 98.00% to 99.00%=0.25% of QP 95.00 to 98.00% = 0.50% of QP less than 95.00% = 0.75% of QP
5	Availability/Uptime of End Points like CCTV camera/ Wi-Fi APs/ Sensors etc.	99.00%	99.00% or Better= NIL 98.00% to 99.00%=0.50% of QP 95.00 to 98.00% = 1.00% of QP less than 95.00% = 1.50% of QP
6	Latency (Device only)	Less than 60 ms	Rs. 1000 per hour, per instance or part thereof. Successful bidder has to analyze, report,
7	Packet Loss (Device only)	<=0.5%	Rs. 1000 per hour, per instance or part thereof. Successful bidder has to analyze report,
8	Not-keeping Command & control Centre up-to- date	>=1 day	Rs. 1,00,000/- per month will be levied
9	Not keeping required Manpower	As per head office requirement	**Management level staffs like PM/ Manager:** 5000/- per day per person for un-sanctioned/ non-reporting **All other staffs other than computer operator:** 1000/- per day per person for un-sanctioned/ non-reporting **Computer operator**: Rs. 500/- per day per person for un-sanctioned/ non- reporting

10	Accuracy of ANPR system	As per SLA	Rs. 1000/- per wrongly identified regd. Number plate below the prescribed limit of SLA Rs. 500/- per wrongly identified regd. Number plate below the prescribed limit of SLA

S. No	SLA	Target	Penalties
11	Delay in resolution of support/incidents for the devices installed by the bidder	As per SLA	Level 1: 0.25% of QP for every 2 Hours Delay in resolution. Level 2: 0.25% of QP for every 6 Hours delay in resolution; Level 3: 0.25% of QP for every 10 Hours delay in resolution Level 4: 0.25% of QP for every 12 Hours delay in resolution
12	Time Line for Retrieval from the Storage	Maximum 4 Hours for per request is allowed	0.50 % of the QP for every instance of delay beyond 4- hours Note: Data Retrieval Request Through a Request Log Mechanism
13	Uptime of all IT components & services under scope	99.00% (at each individual component level)	For each component 97.00 - 99.00% - 1.0% of QP; 95.00% - 97.00% - 2.0% of QP And so on If the uptime goes below 94.50%, additional penalty of 1% will be charged on QP for each slab

14	Uptime of all non-IT Components & services under scope	99.741% (at each individual component level)	99.249-99.749 - 0.5% of QP; 98.749-99.249 - 1.0% of QP And so on If the uptime goes below 96.749%, additional penalty of 0.5% will be charged on
15	Security Breach	As per SLA	5% Of QP for every 30 Minutes delay in detection and additional 1% for every 1 hr. delay in the mitigation of security breach
16	Request Resolution (DC)	As per SLA	**level 1** Incident 0.25% of QP for every 2 hr. delay in resolution; **Level 2** Incident 0.25% of QP for every 12 Hr delay in resolution; **Level 3** Incident 0.25% of QP for every 18 hrs. delay in resolution
17	Incident Resolution (DC)	As per SLA	**level 1** Incident 0.25% of QP for every 2 hr. delay in resolution; **Level 2** Incident 0.25% of QP for every 6 Hr delay in resolution; **Level 3** Incident 0.25% of QP for every 12 hrs delay in resolution

T= Kick off Date

Note: The above clause for penalties due to delay in FAT shall only be applicable for the delay attributed solely to the successful bidder as per his roles and responsibilities, delay due to other reasons shall not be considered.

The bidder quoting for the overall solution should be responsible for maintaining an uptime of 99% on the device availability for a period of five years. The bidder is expected to achieve the high uptime using the below mentioned O&M criteria:

1. Next business day support from the OEM on the faulty device replacement
2. 24*7 TAC facility from the OEM as well as from the bidder using a toll free number
3. 3% of the total equipment quoted should be maintained as spares at 6 of the most critical locations for immediate equipment replacement
4. Total manpower dedicated for the O&M of the project should be 40 in number. The manpower should be dedicated towards maintaining the overall uptime of the toll plaza locations and should be spread evenly across the country
5. Manpower provisioned should have basic active device certification
6. Dedicated team of 6 people at the central command and control center for coordinating and monitoring the overall network
7. Liasoning with the bandwidth service provider should be the responsibility of the bidder
8. Basic training to the toll staff on the upkeep of the IT equipment for maintaining the health of the deployed equipment
9. Bidder will assess the availability of proper earthing at the remote toll plaza location and wherever need be he will do the earthing.

Bidder need to provide basic SLA management software.

5.39 Implementation SLAs:

These SLAs shall be used to evaluate the timelines for completion of deliverables that are listed in the deliverable. These SLAs will be applicable for commissioning of the project (upto GO-LIVE). For delay of every week in completion & submission of the deliverable mentioned in the proposal, the Concessionaire would be charged with penalty at 0.2% of 50% of contract value. Reports with respect to SLA parameters needs to be provided by SI and the same needs to be validated and approved by designated Project Manager/State Officials. The reports submitted by SI should be either system generated or manual reports with proofs/justifications. It is responsibility of System Integrator to get the reports validated/approved before submitting the invoices/bills.

5.40 Pre-deployment live set-up

After the award of the contractor issue of LOI, the bidder needs to deliver all use cases of smart city services by **20th June 2017** for a period of 15 days. These services can be hosted in the OEM/Bidder cloud, which eventually need to be deployed on-prem as per the requirements of the RFP. This is required for the go-live of command center by afore-mentioned timelines.