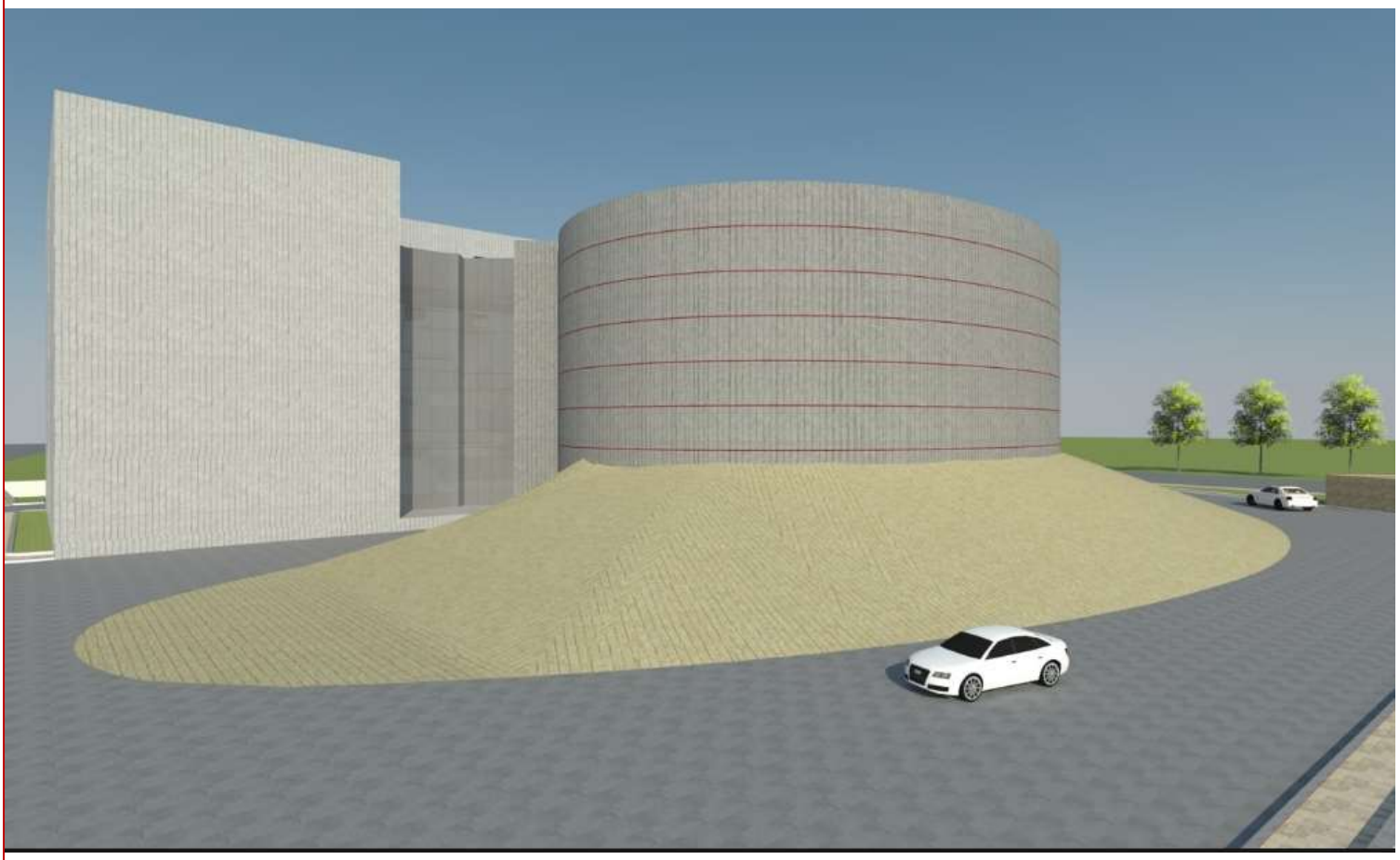
REQUEST FOR PROPOSAL FOR SELECTION OF IMPLEMENTATION AGENCY FOR INTEGRATED COMMAND AND CONTROL CENTER (ICCC) IN SURAT CITY



RFP No.: SSCDL-ICCC-RFP-01-2019

Last date for Price Bid Submission: 08.04.2019

Invited by
Surat Smart City Development Limited
115, Smart City Cell, Surat Municipal Corporation,
Muglisara, Main Road, Surat - 395003, Gujarat.

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1 Glossary

Terms	*Meaning*
AMC	Annual Maintenance Contract
AP	Access Points
BOM	Bill of Material
CEO	Chief Executive Officer
DC	Data Center
DD	Demand Draft
DR	Disaster Recovery
EMD	Earnest Money Deposit
FRS	Functional Requirement Specifications
GIS	Geographical Information System
GPS	Global Position System
ICCC	Integrated Command Control Center
ICT	Information and Communication Technology
INR	Indian Rupee
LoI	Letter of Intent
MFP	Multi-Functional Printer
OEM	Original Equipment Manufacture
O&M	Operations and Maintenance
PBG	Performance Bank Guarantee
POE	Power over Ethernet
PQ	Pre-Qualification
RFP	Request for Proposal
RO	Request Order
SAN	Storage Area Network
SI	System Integrator
SLA	Service Level Agreement
SMC	Surat Municipal Corporation
SOP	Standard Operating Procedures
SRS	Software Requirement Specifications
SSCDL	Surat Smart City Development Limited
TQ	Technical Qualification
UAT	User Acceptance Testing
VM	Virtual Machine

2 Notice Inviting Bid

	Surat Smart City Development Limited (SSCDL) 115, Smart City Cell, Surat Municipal Corporation - Head Quarter, Muglisara, Main Road, Surat - 395003, Gujarat. **Notice for Inviting RFP for** **"Selection of Implementing Agency for Integrated Command Control Center(ICCC) in Surat"** **[RFP No.: SSCDL-ICCC-RFP-01-2019]**	

Bid for Implementation of ICCC Project is invited online on https://smc.nprocure.com from the bidder meeting the basic eligibility criteria as stated in the bid document.

Bid Fee (Non-refundable)	• **Rs.20,160 [Rs. 18,000 + 12% GST]** by Demand Draft or Banker's Cheque
EMD Amount	• EMD of Rs. 25,00,000 whereby 50% amount shall be in the form of Demand Draft / Banker's Cheque in favour of "Surat Smart City Development Limited", from a list of approved banks as per the format given in this Bid Document, in favour of Surat Smart City Development Ltd. with validity of 180 days from the date of Bid opening.
Last date to submit the Pre Bid Queries	• By email to it@suratsmartcity.com on or before 25.03.2019, 16:00 hrs
Pre-bid Conference	• On 28.03.2019 at 12:00 noon • 2nd Floor, Room No. 88, Conference Hall, Muglisara, Surat
Online Price Bid End Date	• Till 08.04.2019 up to 18:00 hrs.
Technical Bid Submission (in Hard Copy) along with EMD & Bid fee	• In sealed envelope strictly by RPAD/Postal Speed Post On or before 12.04.2019 up to 18:00 hrs. To the Chief Accounts, Surat Municipal Corporation, Muglisara, Surat – 395003, Gujarat by RPAD or Speed Post Only.
RFP Document Availability	• https://smc.nprocure.com, http://suratsmartcity.com/Tenders,

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

CEO
Surat Smart City Development Ltd

3 Introduction and Background

3.1 About Surat

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

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

3.2 About Surat Municipal Corporation

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

Utilization of Information Technology (e-Governance)

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

1. Express IT Award 2015 (Bronze) For SMC Mobile App
2. Vodafone – Mobile for Good Award 2014 to Citizen's Connect – SMC Mobile App
3. Skoch Order-of-Merit to Citizen's Connect – SMC Mobile App
4. mBillionth Award South Asia 2014 to Citizen's Connect – SMC Mobile App
5. HUDCO Award for Best Practices to Improve the Living Environment 2013-14 for Mobile App & Virtual Civic Center (Online Services)
6. Skoch Gold Award & Order-of-Merit for Use of e-Governance for Improved Service Delivery
7. The Janaagraha G2C Award 2012 for Best website under the category "Transparency and Accountability"
8. City Civic Centre won the National Award for e-Governance 2007-08 (Bronze) for Outstanding Performance in Citizen Centric Service Delivery
9. Golden Jubilee Memorial Trust Awards 2007-08 for Outstanding Utilisation of Communication & Information Technology from Southern Gujarat Chamber of Commerce
10. The Grievance Redressal System awarded the Best Practice Award by CMAG & FIRE[D]
11. Certificate of Merit by NIUA – FIRE(D) for the best website in the year 2001

3.3 About Surat Smart City Development Limited (SSCDL)

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

3.4 Project Background

The key objective of this project is to build IT infrastructure for Command & Control Centre and aggregate IT asset which is being utilized at different location across Surat city to monitor different services of Surat Municipal Corporation at central location. The infrastructure shall be robust & scalable to integrate new services to be monitored in future as & when required.

The authority aims to develop the robust system whereby inputs from different functional departments such as transport, water, drainage, emergency, IT, Health etc. can be assimilated and analysed on a single platform which will result in aggregated city level information. Further this aggregate city level information can be converted to actionable intelligence, which would be propagated to relevant stakeholders and citizens for informed decisions. Following are the indicators that shall be achieved:

- Better management of utilities and quantification of services
- Disaster Management and Emergency Response System
- Efficient traffic management
- Enhanced safety and security
- Asset Management
- Civic Services Management
- Integration with existing control centres (SMAC Centre) in the city and other services (with provisions for future scalability)
    - CCTV System (Surat Safe City) and Control Room at Police HQ
    - Suman Eye Project
    - Water SCADA Project
    - ERP Project
    - GIS Project
    - ITCS Project
    - ITMS Project
    - AFCS Project
    - Public Wi-Fi and Smart Poles project
    - Solid Waste Management
    - Environmental Sensors
    - City wide Connectivity etc.

SSCDL intends to select a System Integrator (SI) by following competitive bidding process to design, develop, implement and maintain the Integrated Control and Command Centre (ICCC) for a period of 5 (five) years after Go Live. This document contains the following details:

- Scope of work that will be assigned to the SI as part of this project
- Other terms and conditions of the envisaged Smart City by SSCDL.

This document provides a high-level overview of the technology approach for ICCC and in-depth details of the functional roles of system components, and the interactions between roles, to achieve an end-to-end system design. The ICCC will be a central hub for city management. The ICCC will be helpful in managing the Surat Smart City Operations and emergency response. **The hosting of all applications and database will be done at in premise Data Centre proposed at ICCC. Integrated Building management system will be implemented separately through different tender in the ICCC building for managing and monitoring building utilities, access, security etc.**

3.5 Project Objective

The key objective for the project is defined as below:

- "Single source of truth" for all city's civic and transport functions
- Platform with the ability to receive, intelligently correlate & share information to better predict outcomes
- Act as City's emergency and disaster management platform
- Ability to integrate multiple text, voice, data, video and smart sensors communication interfaces
- Ability to integrate and correlate online and offline interactions
- Capabilities to support GIS based incidents visualization
- Intelligent and Intuitive work-flow management

The above objectives can be categorised under below four heads:

1. Enabled Integrated Operations
2. Informed Decision Making
3. Real time Data Analysis
4. Being more proactive and less reactive

4 Scope of Services for the Project

4.1 Components & Services Overview

The SI should ensure the successful implementation of the proposed "ICCC solution consisting of IT hardware and software infrastructure and ancillary work" as per the scope of services described below. The SI's scope of work shall include but will not be limited to the following broad areas. The SI will be required to provide services and scope of work as detailed in this RFP document and further detailed in Annexure I.

1. **Assessment, Scoping and Feasibility Study:** Conduct a detailed assessment, scoping study and develop a comprehensive project plan, including:
   - Conduct feasibility study for finalization of detailed technical architecture, gap analysis and project plan
   - Conduct site surveys to identify need for site preparation activities, if any
   - Obtain site Clearance obligations & other relevant permissions, if any

2. **Provisioning Hardware and Software Infrastructure:** SI shall be responsible for supply, installation, testing and commissioning of the the following systems and components:
   - Implementation and configuration of ICCC platform
   - Integration of various transit and non-transit civic services on different platform running at different location across Surat City on single platform
   - Provisioning of Command center infrastructure including operator video walls, workstations, controllers, etc.
   - Video Conferencing System
   - Design and civil site work for Data Center
   - Passive Infrastructure for Data Centre including additional IT hardware required to collocate the services and interoperability of systems.
   - Workstations, , printer etc. for operators & SMC/SSCDL staff
   - Call center solution
   - Internal LAN infrastructure within ICCC premises for data communication
   - Visual Display boards and interactive screens/kiosks inside ICCC premises
   - Support in migration of various existing Data Center and Control Center at ICCC
   - Provision of Manpower as per the RFP requirements
   - Facility Management System & establishment of IT help desk

3. **Forward and backward integration** (in terms of functions - components, applications, devices, geographical coverage and volume) with all smart city components across the layers defined in the overall solution architecture. Such forward or backward integration could take place at any of the layers defined in the over architecture viz. sensor and actuator layer, network layer, data centre layer, application layer, integration layer, service delivery layer, command centre layer, visualization layer and security layer.

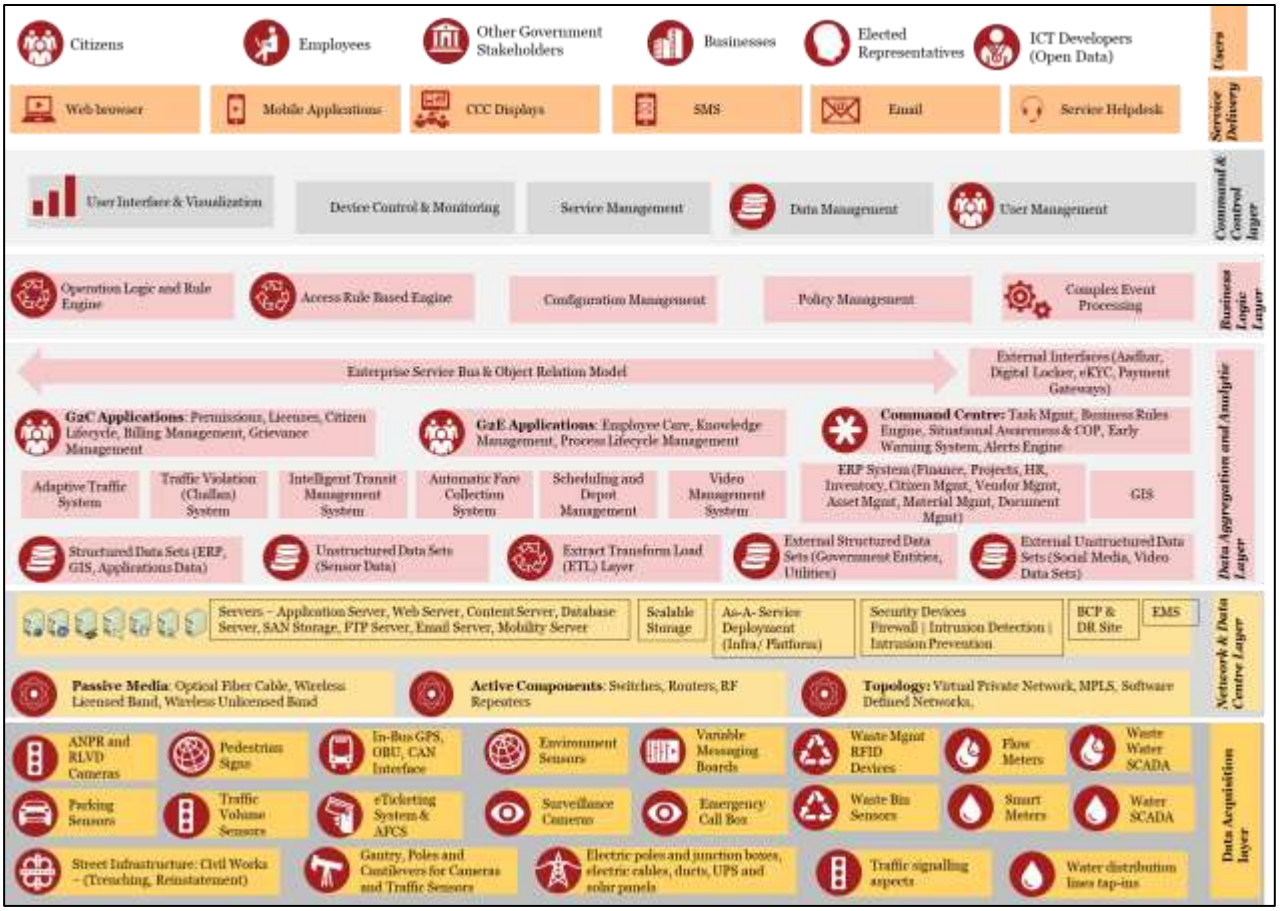
4. **Capacity Building** for SSCDL/SMC which includes preparation of operational manuals, training documents and capacity building support, including:
   - Training of the city authorities and operators on operationalization of the system
   - Support during execution of acceptance testing
   - Preparation and implementation of the information security policy, including policies on backup and redundancy plan
   - Preparation of revised KPIs for performance monitoring of various urban services monitored through the system envisaged to be implemented
   - Developing standard operating procedures for operations management and other services to be rendered by ICCC
   - Preparation of system documents, user manuals, performance manuals, etc.

5. **Warranty and Annual Maintenance** which includes periodic maintenance services for the software, hardware and other IT infrastructure installed as part of ICCC project for a period of 5 years i.e. 3 year warranty and 2 years of Comprehensive Annual Maintenance Contract (CAMC), and conducting periodic audits of the project from a third party, if required or instructed by SSCDL.

It is to be noted, any functionality not expressly stated in this document but required to meet the needs of the SSCDL to ensure successful operations of the system shall essentially be under the scope of the SI and for that no extra charges shall be admissible.

4.2 Envisaged Solution Architecture

It is envisaged that the proposed ICCC Solution will be based on the following solution architecture.



1. Data Acquisition Layer

The Data Acquisition Layer will consume real time data from sensors devices, data sources, static and real time data feeds from different applications, systems and databases etc. for air and water quality monitoring, ambient light sensors for street light management, metering devices, location based devices, surveillance and safety cameras, sensors for disaster detection, level sensors for solid waste management etc. The layer will collect data from sensors or process the same to generate information from the data collected and aggregated through its various components to generate alerts, or it can connect to COTS and bespoke applications so that alerts generated by the COTS/bespoke application/systems. This layer will enable other components of ICCC to aggregate, consume and process the data for deriving information. Various Sensors and IOTs devices have been already procured and currently functional through different projects.

2. Network & Data Center 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. The network layer will be scalable such that additional sensors, actuators, display devices can be seamlessly added in future. Provisioning of connectivity and bandwidth will not be under the scope of the bidder.

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. Similar to the network layer, it will be scalable to cater to the increasing computing and storage needs in future. SI is required to provision necessary IT infrastructure along with provisioning of passive and active equipments and preparation of Data Center within the ICCC. SI is also responsible to support in migration activity of data center housed at Maan Darwaja and Muglisara.

3. Data Aggregation and Analytics Layer

The Data Aggregation and Analytics Layer is responsible for deriving information and intelligence from data captured from various data sources through data acquisition layer. Data Aggregation and Analysis comprises of components for extraction and transformation of data from different systems, data sources and different data formats. For example Health records are captured from Hospital Management System, traffic information is captured from Adaptive Traffic Management System and Ambulance could be tracked using Vehicle Tracking system in different formats. ICCC Data aggregation and Analysis Layer is able to process the information and allows users to use information from different systems as per requirements.

Data Analytics components will be used to perform data churning to derive intelligence from different data sets across the domain. This intelligence can then be used for exception handling and visualization in different scenarios through various analysis using ICCC components or third party tools/applications:

a) Predictive Analytics
b) Diagnostic Analytics
c) Prescriptive Analytics
d) Sentiment Analytics
e) Video Analytics

This layer enables ICCC to derive intelligence from the information collected from Data Acquisition and Collection Layer.

4. Business Logic Application Layer

Business Logic Application Layer will be the core application engine of the ICCC platform which help end user to design and configure standard operating procedure, manage external and internal trigger, policy implementation, and handling complex events. Application layer will also help ICCC to handle events in real time complimenting it with intelligence and information from various systems. Application layer will also manage the response in different situations as per configured business logic.

It will help in configuring or automating the operations in different scenarios, for e.g.:

a) Defining and configuring Event
b) Defining and configuring External/ Internal Trigger
c) Defining and configuring Event Response
d) Defining and configuring responsibility matrix
e) Defining and configuring incidents and change requests
f) Defining and configuring user access and authorization
g) Defining and configuring access policy of field assets

Application layer at ICCC will allow to communicate with different systems. This layers will enable ICCC to handle the events to make real time decisions as per the configured protocol.

5. Command and Control layer

Command and Control layer of ICCC will be responsible for managing

a) Communication with Stakeholders
b) Device Control (asset, access and authorization)
c) User Interface and Visualization
d) Complex Real Time Event Handling
e) Service Management

The command and control layer will house the action oriented SOP's, incident response dispatches and management systems (rules engines, 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 flexible to accept inputs from various downstream applications and sensors as and when the system get introduced.

6. Security Layer

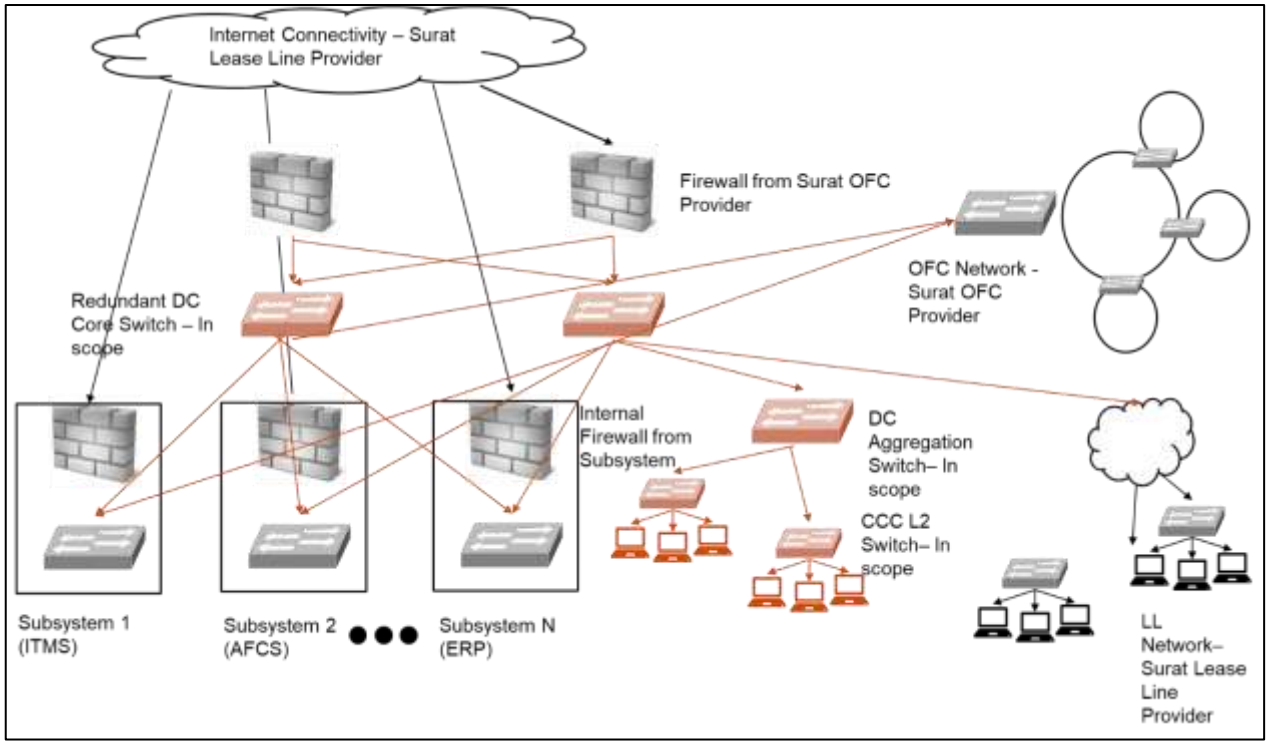
As ambient conditions, actuators and display devices will be connected through a network, security of the entire system becomes of paramount significance. This layer includes:

- Infrastructure security- including policies for identity and information security policies
- Identity and Access Management – including user authentication, authorization, SSL & Digital Signatures
- Application security- Adoption of Technical Standards for Interoperability Framework and other standards published by GoI for various eGovernance applications
- End device security, including physical security of all end devices at command center.

The ICCC shall have necessary provisions in place for the respective components to ensure security and avoid exploitation any vulnerability.

4.3 Surat Network Schematic Diagram

The below diagram illustrate the network diagram for ICCC. All items including interconnects in **orange colour** are under scope of selected bidder under this RFP, the selected bidder will have to co-ordinate and integrate with all item in **black colour**. Selected bidder will be solely responsible for successful integration of all components.



4.4 Responsibility Matrix

#	Key Activities	Successful Bidder	SMC/ SSCDL	Existing ICT Vendors at SMC/ SSCDL
Project Inception Phase				
1	Project Kick Off	R/A	C	I
2	Deployment of manpower	R/A	C	I
Requirement Phase				
3	Assess the requirement of IT Infrastructure and Non IT Infrastructure	R/A	C	C
4	Assess the connectivity requirement in ICCC Building	R/A	C	C/I
5	Assessment the Network laying requirement (Internal LAN)	R/A	C	C
Design Phase				
6	Creation of Detail Drawing	R/A	C	I
7	Development of test cases (Unit, System Integration and User Acceptance)	R/A	C	I

#	Key Activities	Successful Bidder	SMC/ SSCDL	Existing ICT Vendors at SMC/ SSCDL
8	Preparation of final bill of quantity and material	R/A	C	I
Development Phase				
9	Helpdesk setup	R/A	C	C/I
10	Physical Infrastructure setup	R/A	C	I
11	IT and Non IT Infrastructure Installation	R/A	C	I
12	Development, Testing and Production environment setup	R/A	C	I
13	Integration with Third party services/application (if any)	R/A	C	I
14	Unit and User Acceptance Testing	R/A	C	I
15	Implementation of Solutions	R/A	C	I
16	Preparation of User Manuals, training curriculum and training materials	R/A	C	I
17	Role based training(s) on the Command Center Software	R/A	C	I
18	Migration of exiting IT/Non IT infrastructure at ICCC	R	C	R/A
Go-Live				
19	Go Live	R/A	C	I
Operation and Maintenance				
20	Operation and Maintenance of IT, Non IT infrastructure and Applications as mentioned in this RFP	R/A	C	I
21	SLA and Performance Monitoring for scope mentioned in this RFP	R/A	C	I
22	Logging, tracking and resolution of issues.	R/A	C	I
23	Patch & Version Updates	R/A	C	I
24	Helpdesk services for all services	R/A	C	I

R: Responsible; A: Accountable; C: Consulted; I: Informed

5 Pre-Qualification Criteria

5.1 Bidder's Eligibility Criteria

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

The Pre-Qualification Criteria for the selection of the vendor or consortium are given below. In case of Consortium, please refer the section 6.6

Note: For evaluation following definition is considered

- The total Project value shall be considered as Capex Cost + Opex Cost
- OEM experience will not be considered for Pre-Qualification Criteria and Technical Evaluation.
- **Integrated Command & Control Centre (ICCC): ICCC Project is defined as those project where in CCC components like** Command Centre Application, Management (Video wall) room, Contact center/helpdesk, etc. are implemented. ICCC Application at such installation should not only be a viewing platform but should be used for SOP creation and triggering for specific event/incident.
- In case of Consortium only 2 partners are allowed including Prime Bidder. For more details on Consortium please refer to the section 6.6

#	Eligibility Criteria	Proof Document Required	Applicable to Sole Bidder	Applicable to Consortium
1.	The Prime Bidder / Sole Bidder should be registered under the Companies Act 1956 and should be in operation in India for a period of at least 5 years as on publication of bid. In case of Consortium, the Consortium Partner should be registered under the Companies Act 1956 Or a partnership firm registered under LLP Act, 2008 or partnership firm registered	Copy of certification of incorporation issued by competent authority/ Registration Certificate	Yes	Yes

#	Eligibility Criteria	Proof Document Required	Applicable to Sole Bidder	Applicable to Consortium
	under Indian Partnership Act 1932			
2.	Bidder/ Primer Bidder should have a minimum average annual turnover of **Rs. 100 crore** from ICT based business for last three financial years i.e. FY 2017-18,FY 2016-17, 2015-16 In case of Consortium, Consortium Partner should have a minimum average annual turnover of **Rs. 25 crore** from ICT business for last three financial years i.e. FY 2017-18,FY 2016-17, 2015-16 The copies of Audited Annual Accounts for last three years to be submitted along with the bid [Financial Years of 2015-16, 2016-17 and 2017-18].	Copy of the Audited Profit and Loss statement and statutory auditor / CA certificate from a regarding turnover. The certificate should be originally signed or notarized.	Yes	Yes
3.	Bidder/ Consortium should have a positive net worth as on 31st March 2018	Certificate from the statutory auditor / CA towards positive net worth of the company. The certificate should be originally signed or notarized	Yes	Yes (All Members of Consortium)
4.	Sole Bidder / Prime Bidder (in case of consortium) should have an experience in implementation of Integrated Command & Control Centre (ICCC) / Network Operations Centre (NOC) in India in last 7 years from the date of publishing this RFP One project costing not less than the amount equal to INR	• Copy of completion certificate issued by client • In case of an ongoing project, the project must have achieved the respective value in terms of entire project cost and ICCC application & Video Wall Solution	Yes	Yes (Prime Bidder in case of Consortium)

#	Eligibility Criteria	Proof Document Required	Applicable to Sole Bidder	Applicable to Consortium
	20 Cr. with ICCC application and video wall solution component worth minimum INR 5 Cr. OR Two projects costing not less than the amount equal to INR 12 Cr. each with ICCC application and video wall solution component worth minimum INR 3 Cr. OR Three projects costing not less than the amount equal to INR 10 Cr. each with ICCC application and video wall solution component worth minimum INR 2.5 Cr.	component respectively from financial perspective. The Certificate to this effect from the client on client's letter head to be provided. • Copy of Work order / Contract		
5.	In case of consortium, the consortium partner should have completed at least one project pertaining to setting up of Datacenter in last 7 years as on Bid Submission date of value not less than INR 5 Crore in India. Note: In-house projects for own or group companies shall not be considered for above criteria.	1. Copy of completion certificate issued by client 2. Copy of Work order / Contract	No	Yes (Consortium Partner)
6.	Bidder should be registered for GST number in India.	GST Registration Certificate PAN Card	Yes	Yes (All Members of Consortium)
7.	Bidder should not be blacklisted or debarred by any Government / PSU in India at the time of submission of the bid.	Declaration letter by bidder as per format given in the RFP document	Yes	Yes (All Members of Consortium)

5.2 OEM's Eligibility Criteria

To be considered qualified for evaluation of Technical Proposal, the respective OEM must meet the below mentioned OEM eligibility criteria:

#	Selection criteria for the OEM	Proof Document Required
A	**Active Network Equipment (Network Switches)**	
1.	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Wired and Wireless LAN Access Infrastructure.	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM.
2.	**Commitment to Support** The OEM should commit to support the product proposed in the scope of this RFP for at least five (5) years. End of support date should not have been announced for the product proposed.	OEM self-certification as per Section-TQ_8 indicating the commitment to support along with product roadmap
B	**Server**	
1.	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Modular Servers	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM.
2.	**Commitment to Support** The OEM should commit to support the product proposed in the scope of this RFP for at least five (5) years. End of support date should not have been announced for the product proposed.	OEM self-certification as per Section-TQ_8 indicating the commitment to support along with product roadmap
C	**Storage**	
1	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for General-Purpose Disk Arrays	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM.
2	**Commitment to Support** The OEM should commit to support the product proposed in the scope of this RFP for at least five (5) years. End of support date should not have been announced for the product proposed.	
D	**ICCC OEM**	
1	ICCC OEM Solution should be deployed in at least 3 locations globally of which minimum 1 deployment within India covering at least 3 domains (with minimum 1 use case per domain) from below: 1. Adaptive/Intelligent Traffic Control System 2. Intelligent Transit Management System 3. Water Supply 4. Drainage 5. Solid Waste Management	1. Work order of projects for supply of ICCC Solution 2. Any client document that clearly specifies the use cases implemented as part of solution.

#	Selection criteria for the OEM	Proof Document Required
	6. Grievance Redressal System 7. CCTV Network 8. Smart Street Lighting 9. Revenue Collection Systems (Property Tax, Water Meter Billing, etc.) 10. Project Management System 11. Network monitoring for large scale WiFi service / dedicated OFC network 12. Smart Parking	
E	**Enterprise Security Solution for Servers**	
1	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Endpoint Protection Platforms	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM

6 Instructions to Bidder

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

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

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

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

6.1 Purpose of Bid Document

1. The purpose of this tender is to select an Implementing Agency for Integrated Command and Control Center (ICCC) in Surat City. This document provides information to enable the bidders to understand the broad requirements to submit their 'Bids'.

2. In case a bidding firm possesses the requisite experience and capabilities required for undertaking the work, it may participate in the selection process either individually (the "Sole Firm") or as lead member of a consortium of firms (the "Prime Bidder") in response to this invitation. The term "Bidder" means the Sole Firm or the Prime Bidder, as the case may be.

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

4. The bidder shall be required to submit their bid in three parts –

    i. Pre-Qualification Bid (Basic Eligibility Criteria as per Section 5)

    ii. Technical Bid (Technical Compliance in line with instructions in Section 6.22 and 11)

    iii. Commercial Bid (in line with instructions in Section 12).

6.2 Proposal Preparation Cost

1. The bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of proposal, in providing any additional information required by SSCDL to facilitate the evaluation process, and in negotiating a definitive Contract or all such activities related to the bid process. The department will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

2. This Bid Document does not commit the SSCDL to award a contract or to engage in negotiations. Further, no reimbursable cost may be incurred in anticipation of award. All materials submitted by the Bidder shall become the property of SSCDL/ SMC and may be returned at its sole discretion.

6.3 Online Pre-bid Queries & Pre-bid Conference

1. A prospective Bidder requiring any clarification on the RFP Document may submit his queries, via email, to the following e-mail id on or before 25.03.2019 up to 16:00 am. Email Id for submission of queries: it@suratsmartcity.com

2. The queries should necessarily be submitted in the following format:

Bidders Request for Clarification			
Name and Address of the Organization submitting request		**Name and Position of Person submitting request**	**Contact Details of the Organization / Authorized Representative**
			Tel: Mobile: Fax: Email:
#	**RFP Document Reference (Section No., Page No.)**	**Content of the RFP requiring clarification**	**Clarification Sought**

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

4. The Pre-bid conference shall be conducted on On 28.03.2019 at 12:00 noon at below mentioned venue:

   Surat Municipal Corporation,

   2nd Floor, Room No. 88, Conference Hall,

   Muglisara, Surat.

6.4 Amendment of RFP Document

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

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

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

6.5 Conflict of Interest

1. A "Conflict of Interest" is any situation that might cause an impartial observer to reasonably question whether Bidder actions are influenced by considerations of your firm's interest at the cost of Government. Bidders shall not have a conflict of interest that may affect the Selection Process or the scope (the "Conflict of Interest"). Any Bidder found to have a Conflict of Interest shall be disqualified.

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

6.6 Consortium Conditions

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

2. The primary responsibility of implementation of ICCC Solution and use cases will lie with the Primer Bidder in case of consortium.

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

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

5. A Bidding Consortium is required to nominate a Prime Member. The formation of the consortium including identification of Prime member and role and responsibilities of each member shall be supported by Memorandum of Agreement and Power of Attorney signed by all the members on a stamp paper of INR 100/-.

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

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

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

    - All consortium members would be available throughout the Contract Period.

    - Each member of the Consortium shall be jointly and severally liable for the due implementation and comprehensive onsite warranty support of the Project.

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

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

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

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

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

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

- In case SSCDL Intends to proceed for Termination on account of SI Event of Defect and /or unresolved disputes between the Consortium Members, both the Consortium Members shall be jointly and severally liable for Implementation and comprehensive onsite warranty support of project at Agreed prices and payment terms specified in this Tender till Authority or any new agency appointed by it takes over the Project

- SSCDL reserves the right to reject the Bid in case of change in the constitution of the consortium after the submission of Bid and before the execution of the Agreement.

6.7 Right to amendment of the project scope

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

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

6.8 SSCDL rights to terminate the selection process

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

2. This RFP does not constitute an offer by SSCDL.

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

6.9 Right to reject any proposal

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

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

General rejection criteria

i. Conditional Bids;

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

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

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

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

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

Technical Rejection criteria

i. Bidders not complying with the Eligibility Criteria given in this Tender document
ii. Technical Bid containing commercial details;
iii. Revelation of Prices in any form or by any reason before opening the Commercial Bid;
iv. Failure to furnish all information required by the Tender Document or submission of a Bid not substantially responsive to the Tender Document in every respect;
v. Bidders not quoting for the complete scope of work as indicated in the Tender Documents, addendum /corrigendum (if any) and any subsequent information given to the Bidder;
vi. Bidders not complying with the Technical and General Terms and conditions as stated in the Tender Documents;
vii. The Bidder not confirming unconditional acceptance of full responsibility of providing services in accordance with the scope of work and Service Level Agreements of this Tender;

Commercial Rejection Criteria

i. Incomplete price Bid;

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

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

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

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

6.10 Bid Fee and Earnest Money Deposit (EMD) and amount

1. The bidder should pay non-refundable Bid Fee of Rs.20,160 [Rs. 18,000 + 12% GST] by Demand Draft or Banker's Cheque in favor of Surat Smart City Development Limited, from Nationalized or Scheduled Banks except Co-operative Banks, payable at Surat. The Bid fees shall be in the form of a Demand Draft / Banker's Cheque.

2. ***GST Registration Number*** for SURAT SMART CITY DEVELOPMENT LIMITED (SSCDL) is "24AAWCS9229G1ZR"

3. The bidder should also pay EMD of Rs. 25, 00,000 (Rupees Twenty five lakhs only) whereby 50% amount shall be in the form of Demand Draft / Banker's Cheque in favour of "Surat Smart City Development Limited", from Nationalized or Scheduled bank and 50 % amount shall be in

the form of Bank guarantee (BG) of any nationalized / scheduled banks with validity of 180 days from the date of Bid opening. The format for BG is enclosed in Section 10.9, The details of the SSCDL bank is as below :

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

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

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

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

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

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

9. The EMD may be forfeited:
    - If a Bidder withdraws their bid or increases their quoted prices during the period of bid validity or its extended period, if any; or
    - In the case of a successful bidder, if the Bidder fails to sign the Contract or to furnish Performance Bank Guarantee within specified time
    - During the bid process, if a Bidder indulges in any such deliberate act as would jeopardize or unnecessarily delay the process of bid evaluation and finalization.
    - During the bid process, if any information found wrong / manipulated / hidden in the bid.

6.11 Sealing, Marking and Submission of Bids

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

PART-1: PREQUALIFICATION BID

Part 1: **Bid Fees, EMD, Pre-Qualification criteria and soft copy in CD/DVD/ Pen drive/ USB stick** with complete details and supporting documents as mentioned in Section 5, 6.10 & 10 in **"Envelop 1"** super scribed with Tender No, Due Date and RFP Name – **"Envelop-1: Selection of**

Implementing Agency for Integrated Command and Control Center (ICCC) in Surat".

PART-2: TECHNICAL BID

Part 2: **Technical Evaluation Criteria , Technical proposal soft copy in CD/DVD/ Pen drive/ USB stick** with complete details and supporting documents as mentioned in Section 10& Section 6.22 & 11 in **"Envelop 2"** super scribed with Tender No, Due Date and RFP Name **"Envelop-2:Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat".** The proposal shall also consist with all supporting documents, RFP Copy, Addendum & Corrigendum, if any.

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

Details to be mentioned exactly on sealed envelop	
Tender Details • **RFP No.:** SSCDL-ICCC-RFP-01-2019 • **Tender name**: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat • **Project Last date of Submission:** 08.04.2019	To, **The Chief Accountant,** **Surat Municipal Corporation,** Mahanagar Seva Sadan, Gordhandas Chokhawala Marg, Muglisara, Surat – 395 003, Gujarat, INDIA.

1. The Bid must be sent strictly by **Postal Speed Post or Registered Post AD only** so as to reach on or before 12.04.2019 up to 18.00 hrs. ***Bids received in any other manner or mode (like courier, in person, etc.) will not be considered. SSCDL won't be responsible for postal delays.***
2. SSCDL will not accept submission of a proposal in any manner other than that specified in the document. Proposals submitted in any other manner shall be treated as defective, invalid and rejected.
3. If the envelopes are not sealed and marked as instructed above, the SSCDL assumes no responsibility for the misplacement or premature opening of the contents of the application and consequent losses, if any suffered by the Bidder.
4. Each Bidder shall submit only one proposal containing documents as below. A bidder who submits more than one proposal under this contract will be disqualified
   a. Original copy of the Bid fee & EMD
   b. Eligibility Criteria documents
   c. Technical Eligibility criteria, Technical Proposal related documents including and Technical Compliance
   d. RFP Copy and Addenda & Corrigendum

e. The Bidder shall prepare original set of the Application (together with originals /copies of documents required to be submitted along therewith pursuant to this document) and applicant shall also provide a soft copy on a Compact Disc (CD) / Pen Drive / USB stick. In the event of any discrepancy between the original and CD/Pen Drive/USB stick, the original shall prevail

f. Each page of the above should bear the initials of the Applicant along with the seal of the Applicant in token of confirmation of having understood the contents. In case of consortium the bid will be signed by the Prime Bidder.

5. The proposal should be signed by an authorized person of the bidder. The technical proposal should be submitted along with a certified true copy of a board resolution/power of attorney empowering signatory to sign/act/execute documents binding the bidder to the terms and conditions detailed in this tender. In case of the Consortium the Prime bidder will submit this document.
6. The proposals must be direct, concise, and complete. SSCDL will evaluate bidder's proposal based on its clarity and completeness of its response to the requirements of the project as outlined in this RFP. The Chairman, SSCDL or Municipal Commissioner, SMC reserves the right to accept or reject any or all the proposals without assigning any reason

PART 3: ONLINE PRICE BID

The price bid must be submitted online on *https://smc.nprocure.com*. It should not to be sent physically, if submitted physically the bid shall be rejected. Please refer Section 15 for format and instructions.

In case bidder needs any clarification or if training required for participating in online tender, they can contact the following office: -

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

1. www.nprocure.com ,
2. www.smc.nprocure.com

6.12 Language of Bids

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

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

6.13 Concessions permissible under statutes

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

6.14 Bid Validity

The proposal should be valid for acceptance for a minimum period of 180 days from the Bid Opening Date (the "Proposal Validity Period"). If required, Authority may request the bidder to have it extended for a further period. The request and the responses thereto shall be made in writing. A Bidder agreeing to the request will not be required or permitted to modify his Proposal but will be required to extend the validity of EMD for the period of the extension, and in compliance with Clause 8.10 in all respects.

6.15 Taxes

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

However, the bidder is expected to provide the tax components in commercial bid. The payment of taxes to the selected bidder will be done as per the prevailing rate.

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

GST

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

During the course of execution of Contract, if there is any change in Rate of GST (Goods & Service Tax) by the Government, the same shall be reimbursed/recovered separately by SSCDL, subject to the submission of Original Receipt/Proof for the amounts actually remitted by the Successful Tendered/Contractor to the Competent Authority along with a Certificate from Chartered Accountant of Contractor/Successful bidder certifying that the amount of GST paid to the Government and the same shall be intimated/submitted/claimed within 30 (Thirty) Days from the date of payment. Remittance of GST within stipulated period shall be the sole responsibility of the Successful bidder/contractor, failing which, SSCDL may recover the amount due, from any other payable dues with SSCDL and decision of SSCDL shall be final and binding on the Contractor/Successful Bidder in this regard. Further the non- payment of GST to the Government may lead to the termination of contract and forfeiture of Security Deposit/Performance Guarantee Amount.

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

6.16 Firm Prices and Bid Currency

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

6.17 Right to vary the scope of the work at the time of award

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

6.18 Modification or Withdrawal of Bids

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

6.19 Evaluation Process

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

2. SSCDL/SMC will scrutinize and evaluate the pre-qualification of bidders, technical and commercial bids received. The SSCDL/SMC will examine the Bids to determine whether they are complete, response and whether the Bid format confirms to the Bid Document requirements. SSCDL/SMC may waive any informality or nonconformity in a Bid which does not constitute a material deviation according to SSCDL/SMC.

3. The technical bid of only those bidders (or consortia) shall be opened which meet all the criteria of the pre-qualification criteria mentioned in Section 5.

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

6.20 Opening and evaluation of Pre-Qualification Bid

1. The Pre-Qualification Bids of Bidders shall be considered and will be evaluated as per the eligibility criteria mentioned in section 5.

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

6.21 Opening and Evaluation of Technical Bid

1. The Technical Bids of only those Bidders, who qualify in the Pre-Qualification stage, shall be considered and will be evaluated as per the evaluation criteria in this clause. The SSCDL/SMC may invite each Bidder to make a presentation as part of the technical evaluation.
2. SMC/SSCDL may require written clarifications from the Bidders to clarify ambiguities and uncertainties arising out of the evaluation of the Bid
3. **Only those Bids which have a minimum score of 60% of total marks in technical evaluation will be considered for opening of their Commercial Bid**. However, Commissioner, SMC or Chairman, SSCDL reserves the right to lower the minimum required marks if none of the Bidders achieves 60% of the total marks. Only the Bids qualifying the technical evaluation will be considered for commercial evaluation.

6.22 Technical Evaluation Criteria

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

Section	Evaluation Criteria	Marks
A	Bidders Financial Competence & Organizational Strength	20
B	Project Experience of Bidder	60
E	Project Presentation/Demonstration	20
	Total	**100**

The following sections explain how the bidders shall be evaluated on each of the evaluation criteria:

<table>
<tr><th>#</th><th>Technical Evaluation Criteria</th><th>Technical Evaluation parameter</th><th>Marks</th></tr>
<tr><td>A</td><td colspan="2">Bidders Financial Competence & Organizational Strength</td><td>20</td></tr>
<tr><td>1</td><td>Bidder’s Competence – Turnover</td><td>• The bidder (Prime bidder in case of consortium) having average annual turnover of 100 Cr from ICT based business in last three financial years (FY 2017-18,FY 2016-17, 2015-16) will get 7 of total allocated marks.
• For every additional Rs. 100 Cr of average turnover from ICT business the bidder (Prime bidder in case of consortium) will get additional marks as below, subject to a maximum of 10 marks.
<table><tr><th>Average Turnover (in crores)</th><th>Marks</th></tr><tr><td>>= INR 300 Cr.</td><td>10</td></tr></table></td><td>10</td></tr>
</table>

<table>
<tr><th>#</th><th>Technical Evaluation Criteria</th><th>Technical Evaluation parameter</th><th>Marks</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>>= INR 200 Cr. and < INR 300 Cr.</td><td>9</td></tr>
<tr><td>>= INR 100 Cr. and < INR 200 Cr.</td><td>8</td></tr>
</table>

Maximum Marks: 10
• Bidder to submit the Certificate from the statutory auditor / CA clearly specifying the annual turnover from ICT for the specified years. Original or Notarized copy of the certificate should be submitted
</td><td></td></tr>
<tr><td>2</td><td>People in organization</td><td>
• The prime bidder having at least 250 FTE (full time employees) on the payroll of organization working on ICT projects will get 7 marks
• For every additional FTEs as below the bidder will get additional marks subject to maximum of 5 marks.

<table>
<tr><th>Number of FTE</th><th>Marks</th></tr>
<tr><td>> 500</td><td>5</td></tr>
<tr><td>> 250 FTE to =<500 FTE</td><td>4</td></tr>
<tr><td>= 250 FTE</td><td>3</td></tr>
</table>
Maximum marks: 5

Note: Full time Employees defined as employees on the Payroll of organization.

• Bidder to submit the Certificate from the HR or Company Secretary clearly specifying the total no of employees within the organization. Original or Notarized copy of the certificate should be submitted
</td><td>5</td></tr>
<tr><td></td><td>Bidder's Certification</td><td>
Certification with the Sole Bidder or any member of consortium (valid as on date of issuance of the bid):
• ISO 9001:2008
• ISO 20000:2011 for IT Service Management
• ISO 27001:2013 for Information Security Management System
• CMMi Level 3
• CMMi Level 5

<table>
<tr><th>Certification</th><th>Marks</th></tr>
<tr><td>• Any one ISO certificate</td><td>2</td></tr>
<tr><td>• Any two ISO certification or CMMi Level 3</td><td>3</td></tr>
<tr><td>• All ISO certification or
• CMMi Level 5 Certification or
• Any two ISO certification & CMMi Level 3 Certification</td><td>4</td></tr>
<tr><td>• Any two ISO certification & CMMi Level 5 Certification</td><td>5</td></tr>
</table>
</td><td></td></tr>
<tr><td>B</td><td colspan="2">Project Experience of Bidder</td><td>60</td></tr>
<tr><td>1</td><td>Bidder Experience –</td><td>Experience of Sole Bidder / Prime Bidder (in case of consortium) in implementation of Integrated Command &</td><td>35</td></tr>
</table>

<table>
<tr><th>#</th><th>Technical Evaluation Criteria</th><th>Technical Evaluation parameter</th><th>Marks</th></tr>
<tr><td></td><td>Executing Command Control Center Project</td><td>Control Centre (ICCC) / Network Operations Centre (NOC) in India in last 7 years from the date of publishing this RFP (maximum 2 projects)

<table>
<tr><th>Number of Projects</th><th>Marks</th></tr>
<tr><td>For satisfying PQ criteria</td><td>20</td></tr>
<tr><td colspan="2">Additional project over and above the projects submitted under PQ criteria</td></tr>
<tr><td>Every additional project costing not less than the amount equal to INR 20 Cr. with ICCC application and video wall solution component worth minimum INR 5 Cr.</td><td>15</td></tr>
<tr><td>Every additional costing not less than the amount equal to INR 12 Cr. each with ICCC application and video wall solution component worth minimum INR 3 Cr.</td><td>9</td></tr>
<tr><td>Every additional project costing not less than the amount equal to INR 10 Cr. each with ICCC application and video wall solution component worth minimum INR 2.5 Cr.</td><td>7.5</td></tr>
</table>
Maximum Marks: 35

Bidder is required to submit :
• Copy of completion certificate issued by client
• In case of an ongoing project, the project must have achieved the respective value in terms of entire project cost and ICCC application & Video Wall Solution component respectively from financial perspective. The Certificate to this effect from the client on client's letter head to be provided.
• Copy of Work order / Contract</td><td></td></tr>
<tr><td></td><td>Bidder Experience – Executing Command Control Center Project</td><td>Experience of Sole Bidder / Prime Bidder (in case of consortium) in implementation of ICCC Solution integrating domains/systems in the last seven (7) years (maximum 2 projects)
1. Adaptive/Intelligent Traffic Control System
2. Intelligent Transit Management System
3. Water Supply
4. Drainage
5. Solid Waste Management
6. Grievance Redressal System
7. CCTV Network</td><td>20</td></tr>
</table>

<table>
<tr><th>#</th><th>Technical Evaluation Criteria</th><th>Technical Evaluation parameter</th><th>Marks</th></tr>
<tr><td></td><td></td><td>8. Smart Street Lighting
9. Revenue Collection Systems (Property Tax, Water Meter Billing, etc.)
10. Project Management System
11. Network monitoring for large scale WiFi service / dedicated OFC network
12. Smart Parking

<table><tr><th>Particular</th><th>Marks</th></tr><tr><td>One project integrating any 5 domains/systems mentioned above</td><td>10</td></tr><tr><td>One project integrating any 3 domains/systems mentioned above</td><td>7.5</td></tr><tr><td colspan="2">Maximum Marks: 20 | Maximum projects: 2</td></tr></table>
Bidder is required to submit :
• Copy of completion certificate issued by client
• In case of an ongoing project, the claimed domains/systems must have been integrated. The Certificate to this effect from the client on client's letter head to be provided.
• Copy of Work order / Contract</td><td></td></tr>
<tr><td>3</td><td>Bidder Experience – Executing Software Development Project</td><td>Relevant experience of Sole bidder / Any member in the consortium in creation of Datacenter in State Govt./Central Govt./ULB/ Public Sector Units(PSU) in India in past 7 years having minimum project value of Rs. 3 Crore.
(Note: In-house projects for own or group companies shall not be considered for above criteria)

Each Project: 2.5 marks | Maximum Projects: 2

Bidder is required to submit :
• Copy of Work Order/ Contract
• Copy of completion certificate issued by client</td><td>5</td></tr>
<tr><td>C</td><td colspan="2">Presentation and Demonstration</td><td>20</td></tr>
<tr><td>1</td><td colspan="2">Presentation and Demonstration
Following parameters will be evaluated:
• Understanding of the project
• Approach & Methodology
• Ability to clearly explain the proposed Solution
• Uniqueness of proposed solution as per requirement of SSCDL/SMC
• Demonstration of proposed ICCC Software for Use cases provided by SSCDL/SMC</td><td>20</td></tr>
</table>

6.23 Opening of Commercial Bid

1. The Commercial bids shall not be opened by SSCDL until the evaluation of the Technical bid has been completed.

2. SSCDL/SMC will open the Commercial Bids of those Bidders who have achieved **minimum score of 70% of total marks in technical evaluation**

3. SSCDL will open the Commercial Bids of those Bidders who qualified in Technical bid.

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

6.24 Evaluation of Commercial Bids and Selection Method

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

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

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

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

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

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

6.25 Notifications of Award and Signing of Contract

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

2. It is to be noted that the date of commencement of the project and all contractual obligations shall commence from the date of issuance of Purchase Order/Letter of Intent (LoI), whichever is earlier. All reference timelines as regards the execution of the project and the payments to the System Integrator shall be considered as beginning from the date of issuance of the Purchase Order/Letter of Acceptance, whichever is earlier.

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

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

6.26 Rights to Accept/Reject any or all Proposals

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

6.27 Quantity Variation

1. The quantity defined in the RFP are estimated and the actual quantity will be executed based on the actual site survey by the selected bidder at the time of project implementation. The quoted rate will remain firm and same for such variation in quantity. The successful bidder shall not object to the upward or downward variation in quantities (including locations).

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

3. If required additional quantity over and above may be executed on later stage, the payment for such additional quantities shall be made at tender rates. The rates mentioned in the price bid for "ICCC software integration and implementation cost per use case" will be valid during the entire contract period and for other items it will be valid for the period of 3 years from the date of issuance of the RO1.

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

6.28 Performance Bank Guarantee

1. The successful bidder shall at his own expense, deposit with department, within 10 days of the notification of award (done through issuance of the Purchase Order/Letter of Acceptance), an unconditional and irrevocable Performance Bank Guarantee (PBG) from a list of approved

banks as per the format given in this Bid Document, in favour of Surat Smart City Development Ltd for the due performance and fulfilment of the contract by the bidder. Failing which a penalty @ 0.065% of the amount of PBG will be imposed for delay of each day.

2. This Performance Bank Guarantee will be for an amount equivalent to 10% of contract value. All charges whatsoever such as premium, commission, etc. with respect to the Performance Bank Guarantee shall be borne by the bidder.

3. The successful bidder shall maintain a valid and binding Performance Guarantee for a period of six months after the expiry of the Contract Period ("Validity Period").

4. The Performance Bank Guarantee letter format can be found in the Annexure VIII of this document.

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

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

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

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

6.29 Governing Law

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

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

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

6.31 Terms and Conditions of the Tender

1. Bidder is required to refer to the draft Contract Agreement, attached as Annexure VII Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM in this Bid Document, for all the terms and conditions (including project timelines) to be adhered by the successful bidder during Project Implementation and Post implementation period.

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

6.32 Restriction on Transfer of Agreement

The System Integrator shall not assign or transfer its right in any manner whatsoever under this agreement to a third party or enter into any agreement for sub-contracting and/or partnership relating to any subject matter to the agreement to any third party or any sister-concerned firm within a group either in whole or in any part i.e., partnership/third party interest shall be created. The sub-contracting is allowed only for activities mentioned in section 6.33.

6.33 Subcontracting

Sub-contracting / Outsourcing shall be allowed only for Passive Networking & Civil Work.

6.34 Safety Regulation, Accident and Damage

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

The Bidder's liabilities under Clause (a) and otherwise under the Contract shall remain unimpaired notwithstanding the existence of any storage cum erection or other insurance covering any risk,

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

6.35 Ownership and Licenses

The ownership of all hardware/software developed/customized/ configured/ procured as part of the project and related documentation for the project would always lie with the SMC/SSCDL. All licenses for software procured related to project have to be in the name of Surat Municipal Corporation. The bidder will be required to produce the Licenses/ATS/Warranty and other documents from the respective OEMs clearly mentioning the product name, quantity, duration, type of support, etc. The payment for the respective item will be subject to submission of the aforesaid documents to SMC/SSCDl.

7 Service Level Agreements (SLA)

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

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

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

1. There is a Force Majeure event effecting the SLA which is beyond the control of the Successful Bidder
2. The non-compliance to the SLA has been due to reasons beyond the control of the Bidder.
3. Theft cases, Damages due to any accident / mishap shall be considered as "beyond the control of Bidder". However, Power shut down or deliberate damage to devices such as Cameras, Network Switch Systems etc. would not be considered as "beyond the control of Bidder".

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

7.1 Definitions

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

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

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

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

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

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

7.2 Measurement of SLA

The SLA metrics provided specifies performance parameters as baseline performance, lower performance and breach. All SLA calculations will be done on monthly basis. The quarterly O&M cost shall be calculated as "Cost of that particular year / 12".

The SLA also specifies the liquidated damages for lower performance and breach conditions. Payment to the SI is linked to the compliance with the SLA metrics.

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

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

Total liquidated damages to be levied on the SI shall be capped at 10% of the total contract value. However, SSCDL would have right to invoke termination of the contract in case the overall liquidated damages equals 10% of total contract value.

7.3 SLAs

#	Performance Area	SLA	Penalty
Project Implementation SLA			
1	Delay in Delivery of Project scope	As per RFP	Any delay in the delivery of the project (solely attributable to vendor) would attract a penalty of 0.02% per day of the CAPEX value of that particular item. Total penalty applicable under this clause shall be limited to 10% of the value of the equipment/device in software or hardware to be supplied, installed and

#	Performance Area	SLA	Penalty
			commissioned for which Request Order is placed If the penalty reaches 10% of the total contract value, Authority may invoke termination clause.
Uptime of all ICCC components (IT and Non-IT Components)			
1	**Equipment Availability (EA)** **Uptime (%) =** [Total minutes in a month –Planned downtime – Total down time(min) in a month]*100/[Total minutes in a month - Planned downtime] **X= [100-(uptime value)]**	>99%	No Penalty
		<99 % to >=97%	Penalty of 0.5% of purchase cost for that particular equipment during warranty or 1% of (yearly AMC + withheld CAPEX amount for that particular component for that year)
		< 97%	Penalty of X*0.5% of purchase cost for that particular equipment during warranty or X*1% of (yearly AMC + withheld CAPEX amount for that particular component for that year)
2	**ICCC Application Availability (EA)** **Uptime (%) =** [Total minutes in a month –Planned downtime – Total down time(min) in a month]*100/[Total minutes in a month - Planned downtime] **X= [100-(uptime value)]**	>99%	No Penalty
		<99 % to >=97%	Penalty of 0.5% of purchase cost for ICCC software during warranty or 1% of (yearly AMC for ICCC software + withheld CAPEX amount for that particular component for that year)
		< 97%	Penalty of X*0.5% of purchase cost for ICCC software during warranty or X*1% of (yearly AMC for ICCC software + withheld CAPEX amount for that particular component for that year)

#	Performance Area	SLA	Penalty
3	Number instance the equipment / application is down during a month	Upto 2 instances	No Penalty
		>2 instances	additional penalty per instance of 25% of total penalty levied on that particular equipment in a month will be applicable
Performance Parameter for ICCC Servers			
1	**Average CPU Utilization** >70% for more than 15 minutes in a single stretch	1 instance	No penalty
		2-5 instances	Penalty of Rs. 5000 per incident
		> 5 instances	Penalty of Rs. 10,000 per incident
3	**Memory Utilization** >70% for more than 15 minutes in a single stretch	1 instance	No penalty
		2-5 instances	Penalty of Rs. 5000 per incident
		> 5 instances	Penalty of Rs. 10,000 per incident

Note:

1. SI shall submit the monthly Reports on the performance and adherence to the SLA. Details of all incidences and all tickets should be part of the performance report. If required, SI shall extend necessary support to integrate with existing EMS and Helpdesk tools so as to monitor and generate the SLA compliance report.

2. Following will not be considered for downtime calculation

   i. Equipment down due to power failure at Location or due to loss of network connectivity attributable to SMC/SSCDL
   ii. Schedule maintenance by SI with prior information to SMC/SSCDL

3. The payment shall be made on quarterly basis on completion of respective quarter.

4. SLA for Data Center Components including Video wall solution and software Applications shall be calculated 24*7. However, SLA for other items shall be calculated within Business Hours of SSCDL/SMC.

7.4 Security Breach SLA

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

Definition	Security of the overall ICCC System is quite important and Successful Bidder shall be required to ensure no compromise is done on the same. Security Breach types considered for this SLA are– • Availability of access of ICCC System or data to any other user than those authorized by SSCDL/SMC/End user department and provided passwords • Any incidence that violates security policy resulting in, unauthorised access to system/data, denial of service/disruption, etc. • Hacking on by any unauthorized user or any other privacy rule is broken as per Govt. of India guidelines
Service Level Requirement	Security compliance of the system should be 100%
Measurement of Level Service Parameter	Any reported security breach shall be logged into the SLA Management solution as a security breach and same should be resolved under Priority level 1.
	For every security breach reported and proved, there shall be a penalty of INR 2,00,000/- or lead to termination of contract

7.5 Breach in supply of Onsite Manpower

1. All persons deputed shall be on the payroll of the Bidder's organization. If required, the resource will be interviewed/screed using any screening procedure by SMC/SSCDL and/or is representative prior to deputation at SMC/SSCDL. The bidder would also remove a person from its staff at SMC/SSCDL if instructed to do so by the SMC/SSCDL within one month and provide suitable replacement with minimum overlap of 15 days.
2. The person deployed for the project at SMC/SSCDL will inform about any leave of absence to SMC/SSCDL.
3. In case of personnel deputed at SMC/SSCDL by bidder as per the resource deployment plan or during support period is on a leave of absence for more than a week,
    a) then a competent substitute, fully conversant with the processes at SMC/SSCDL will have to be provided by the bidder. Thus, the bidder is required to keep other personnel employed but not deputed at SMC/SSCDL so that the vacancy of the key personnel could be kept filled in.
    b) if the substitute is not provided for more than 5 days than such leaves after fifth day will be considered as if a person is not deployed by the bidder and monetary deduction may be made accordingly.
4. The personnel of implementation team as during the implementation and post implementation period will observe the work-time of 8 hours per day, and follow SMC's calendar; but they may have to put in extra time whenever called for by SSCDL without any additional charges. The

bidder shall make necessary arrangements during post implementation support to meet defined SLAs.

5. The leaves of key personnel as per the resource deployment plan should not affect the deliverables as per scheduled timelines.
6. Twelve leaves of absence per year will be admissible for each position; additional leaves would be liable to deductions.
7. A schedule of up to 12 festival/national holidays per year for the staff will have to be provided by the bidder and get it approved by SMC/SSCDL in advance for the entire year. For the current year the list is to be provided as soon as the contract comes into effect. Any change thereat will have to be effected only after prior permission of SMC/SSCDL.
8. In case of change in its team composition owing to attrition the 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. The exiting team member should be replaced with equally or more competent personnel.
9. The bidder shall ensure minimum team strength during the support period. Failure to deploy suitably qualified resources will lead to deductions to payable support charge on a prorate basis considering the total monthly support charge and total no. of resources required to be deployed.
10. Non-adherence to above clauses will be considered as Absence of employee. The bidder shall ensure minimum team strength as defined in RFP. Failure to deploy suitably qualified resources will lead to deductions as per below mentioned table. Additionally, penalty may be levied for delays and non-performance attributable to bidder organization or deployed staff.

#	Role	Deduction per resource/day
1.	Project Manager cum ICCC Expert	1500
2.	ICCC Application Developer	1000
3.	IT Infrastructure Support Engineers	500
Note: There is NO CAPPING on the applicable deduction for non-availability of resources as per the above table.		

11. In case the minimum resources are not available, penalty will be charged over and above the deductions as specified above at the following rate for the respective positions
    c) 25% of deduction amount as penalty for delay upto one month
    d) 50% of the deduction amount as penalty for delay of more than one month upto two months
    e) 100% of the deduction amount as penalty for delay of more than two months
    f) This will be applied even for positions that fall vacant during the contract period and also for such period during which resource was not available due to leave of absence for more than 5 days and substitute is not provided.
12. The persons deployed by the bidder shall not claim nor shall be entitled to pay, perks, and other facilities admissible to casual, ad-hoc, regular/confirmed employees of SMC/SSCDL during the contract period or, after expiry of the contract.

13. The bidder's personnel shall not divulge or disclose to any person, any details of office, operation process technical know-how, administrative/organizational matters as all are confidential/secret in nature.
14. The bidder's personnel's working should be polite, cordial, positive and efficient, while handling the assigned work and his/her actions shall promote goodwill and enhance the image of SMC/SSCDL. The bidder shall be responsible for any act of indiscipline on the part of persons deployed.
15. The bidder shall be solely responsible for the redressal of grievances/resolution of disputes relating to persons deployed. SMC/SSCDL shall, in no way, be responsible for settlement of such issues whatsoever.
16. The transportation, food, medical and other statutory requirements in respect of personnel of the service provider shall be the responsibility of the bidder.

8 Project Milestone and Payment Schedules

8.1 Project Milestone

1. SMC / SSCDL shall issue a "Request Order" in writing, indicating the number of units of Hardware and Software to be supplied under this Project. Upon getting the Request Order, the selected bidder shall promptly supply, install and commission the hardware and software as soon as possible within the lead time specified in the request order. The delay in delivery will attract delayed penalty as mentioned in this RFP. SMC/SSCDL shall release the request order as per below table:

Services	Approximate Time for Issuance of Request Order	Tentative Scope/ Approximate Sizing	Tentative Lead Time
Request Order 1	Two weeks post issuance of LOI	**Part A:** Implementation of Data Center (Civil)	2 Months Post Issuance of Request Order
		Part B: 1. SITC of IT and Passive Infrastructure in Data Center 2. SITC for Video Wall & Video Wall Solution for ICCC (1st Floor) 3. SITC for other ordered IT components like desktops, workstations, etc. 4. SITC of ICCC Application for 25 use cases 5. SITC of Call Center Management Solution	4 Months Post Issuance of Request Order

2. SMC / SSCDL shall issue a subsequent Request Orders as (ROs) as & when required indicating the number of units of hardware & software as per below to be supplied based on actual requirements during contract period.

#	Component	SITC Time Limit
1	Video wall solution for 3rd Floor	60 days
2	Integration for additional 25 Uses cases in ICCC Application	90 days
3	Desktop PC, Workstations, 49" Curved screens for Operators, Printers, LAN equipment, etc.	45 days

8.2 Payment Schedule

#	Milestone	Payment
1.	Satisfactory delivery and acceptance of materials (as per the Request Order) and after submission of the invoice.	40% of total CAPEX of Request order
2.	Satisfactory competition of Installation of respective items/ equipment and after, submission of the invoice.	20% of total CAPEX of Request order
3.	UAT and Go Live of entire RO (Testing and Commissioning)	20% of total CAPEX of Request order
4.	Successful completion of 1st year after Project "Go Live"	5% of total CAPEX of Request order
5.	Successful completion of 2nd year after Project "Go Live"	5% of total CAPEX of Request order
6.	Successful completion of 3rd year after Project "Go Live"	5% of total CAPEX of Request order
7.	Successful completion of 4th year after Project "Go Live"	2.5% of total CAPEX of Request order
8.	Successful completion of 5th year after Project "Go Live"	2.5% of total CAPEX of Request order
9.	i. The contract period of 5 years are considered from the Go-Live date of 1st Request Order. The payment of subsequent Request Orders will be made from the Go-Live date of that request order till the completion of warranty period i.e. 3 years or 5 years as mentioned in TQ_2. ii. The Support cost for ICCC application projected by SI in their commercial bid will be made equally on quarterly basis (20 quarters) at completion of each quarter after Project "Go Live". However, other OPEX projected by SI in their commercial bid will be made equally on quarterly basis for 4th and 5th Year (8 quarters) at completion of each quarter. iii. The payments are subject to meeting of SLA's failing which the appropriate deductions as mentioned in the SLA section of this RFP will be made applicable.	

Note:

- All payments to the SI shall be made upon submission of invoices along with necessary approval certificates from concerned Authority like SSCDL, SMC, if applicable.
- The above payments are subject to meeting of SLA's failing which the appropriate deductions as mentioned in the SLA document of this RFP.

9 General Instructions on Preparation of Technical Proposal

1. Bidders have to submit a very structured and organized technical bid, which will be analysed by the SSCDL for different compliances with regards to the requirements of the project. The document submitted must be searchable and well indexed without any handwritten material. The quality and completeness of the information submitted by the Bidder will matter a lot. All the documents must be submitted in one file only.
2. Bidder is expected to divide its Bid in following sections / documents:

   a. Bidder's Competence to execute the project

   - This document should bring about the capability of the firm to execute this project. Bidder to submit the supporting documents for all parameters as mentioned in the section 7 and section 13.

   b. Technical Proposal: Bidders have to submit a structured and organized technical proposal, which will be analysed by SSCDL for different compliances with regards to the requirements of the project. Each point listed below must be provided in detail with the necessary supporting documents and assumptions. Information to be included by the bidders in their Technical Proposal is as follows:

   - Understanding of the Project Scope
   - Solution Architecture
   - Approach & Methodology for design, Supply, Installation, Commissioning, Go live and maintenance during comprehensive onsite warranty support.
   - 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.
   - Risk Mitigation plan

   c. Other Details

   - **Bill of Material:** This document should give details of all the proposed IT and non IT components without specifying the costs. Please note that the bid shall get disqualified if Bidder gives price details in the technical document.
   - **Make and Model of all Components as per the format mentioned in TQ_2**
   - **Compliance to Technical and Functional Specifications from the Bidder:** The bidder (in case of consortium prime bidder) is required to provide the Compliance to Technical and Functional Specifications in form of undertaking for all the items as mentioned in Annexure II, III & IV.
   - **Compliance to Technical and Functional Specifications from the Bidder and OEM:** The bidder must provide the Compliance to Technical and Functional

Specifications for all the items as mentioned in Annexure II, III & IV from respective OEMs on OEM's letter head duly signed by authorised signatory of OEM. Bidder is also required to submit the compliance for all items mentioned in Annexure II, III & IV.

- **Authorization letter from OEM**: The bidder must submit the authorisation from the OEM as per the format mentioned in TQ_1.
- **Datasheets:** The bidder must submit the Datasheets highlighting the Technical Specification mentioned in Annexure II & III parameters for all components so as to derive the technical compliance of the proposed product with the technical specifications of the RFP.

10 Formats for Pre-Qualification Bid

10.1 Checklist for Pre- Qualification Document

#	Documents to be submitted	Submitted (Y / N)	Documentary Proof (Page No.)
1.	Bid fee of Rs.20,160 [Rs. 18,000 + 12% GST] by Demand Draft or Banker's Cheque		
2.	EMD of Rs. 25,00,000 as per section 6.10		
3.	Bid Covering Letter (Form PQ_1)		
4.	Power of attorney / board resolution to the authorized Signatory of the RFP (in case of consortium, all members to submit)		
5.	Particulars of the Bidders (Form PQ_2)		
6.	Copy of Certificate of Incorporation/Registration certificate/ Shop & Establishment Certificate (In case of consortium, all members to submit)		
7.	Details of Annual Turnover and Networth for last three financial years 2017-18, 2016-17, 2015-16 (Form PQ_3)		
8.	Certificate from the Statutory auditor / CA clearly specifying the annual turnover and Networth for the specified years (Form PQ_4). In case of consortium, all members to submit.		
9.	Declaration letter that the firm is not blacklisted by Central Government or any State Government organization / PSU in India at the time of submission of the Bid, in the format given in the RFP (Form PQ_5). In case of consortium, all members to submit.		
10.	Affidavit on Non-judicial Rs 100 stamp paper (Form PQ_6). In case of consortium, all members to submit.		
11.	Details of the projects executed (Form PQ_7)		
12.	Copy of Audited Balance Sheet for last three financial years 2017-18, 2016-17, 2015-16.		
13.	Copy of the audited Profit & Loss Statements for last three financial years 2017-18, 2016-17, 2015-16.		
14.	Copy of GST registration. In case of consortium, all members to submit		
15.	Copy of PAN registration. In case of consortium, all members to submit		
16.	Power of Attorney for Prime Bidder of Consortium (PQ_8)		

#	Documents to be submitted	Submitted (Y / N)	Documentary Proof (Page No.)
17.	Consortium Agreement with clear defining roles and responsibilities of each consortium partner		

Note:

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

10.2 PQ_1: Pre-Qualification and Technical Bid Cover Letter

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

Date: dd/mm/yyyy

To
Chief Executive Engineer,
115, Smart City Cell,
Surat Municipal Corporation – Head Quarter,
Muglisara, Main Road, Surat – 395003, Gujarat.

Subject: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat

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

Dear Sir/ Madam,

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

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

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

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

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

Signature of Authorized Signatory (with official seal)

Name	:
Designation	:
Address	:
Telephone& Fax	:
E-mail address	:

10.3 PQ_2: Bidder Information Format

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

To whomsoever it may concern,

Bidder information Format

Please find below the details of lead bidder and other consortium members for participation in "Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat"

#	Particulars	Lead Bidder / Sole Bidder (Consortium Member #1)	(Consortium Member #2)
1	Name of the organization		
2	Type of Organization (Pvt. Ltd/ Public Limited)		
3	Country of registered Office		
4	Address of Registered office		
5	Company Registration Details		
6	Date of Registration		
7	PAN No		
8	GST Registration No		
9	Address of Registered office in India		
10	No of years of operations in India		
11	Authorized Signatory Name		
12	Authorized Signatory Designation		
13	Authorized Signatory Contact Details		

Yours Sincerely,

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

Note: To be submitted with any other supporting details specified as Document Proof in Section 5 and 10.1

10.4 PQ_3: Bidder's Annual turnover over last 3 financial years

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

Date: dd/mm/yyyy

To
Chief Executive Engineer,
115, Smart City Cell,
Surat Municipal Corporation – Head Quarter,
Muglisara, Main Road, Surat – 395003, Gujarat.

Subject: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat

Sir/ Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document of Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat

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

#	Details	FY 2015-16 (i)	FY 2016-17 (ii)	FY 2017-18 (iii)	Average Turnover [(i)+(ii)+(iii)/3]
1	Overall Annual Turnover- Prime Bidder (Consortium Member-1)				

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

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

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

Yours Sincerely,

Signature of Authorized Signatory (with official seal)

Name	:
Designation	:
Address	:
Telephone& Fax	:
E-mail address	:

Note: To be submitted with any other supporting details specified as Document Proof in Section 5 and 10.1

10.5 PQ_4: Auditor's/CA Certificate for turnover for bidder

<<To be printed on CA/Auditors company's letterhead and signed by Authorized signatory>>

<<NOTE: To be filed for each Member company in case of a consortium>>

Date: dd/mm/yyyy

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

#	Financial Year Ending	Annual Turnover (INR)	Networth
1.	31st March, 2016		
2.	31st March, 2017		
3.	31st March, 2018		
	Average Turnover		

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

Yours Sincerely,

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

10.6 PQ_5: Self-Declaration – No Blacklisting

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

Date: dd/mm/yyyy

To
Chief Executive Engineer,
115, Smart City Cell,
Surat Municipal Corporation – Head Quarter,
Muglisara, Main Road, Surat – 395003, Gujarat.

Subject: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat

Sir/Madam,

In response to the Tender Ref. No. _____ dated _____ **Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat Project**, as an owner/ partner/ Director of _____, I/ We hereby declare that presently our Company/ firm _____is not blacklisted or debarred by any Government / PSU on the date of Bid Submission.

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

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

10.7 PQ_6: Affidavit

The affidavit format as indicated below to be furnished on non-judicial stamp paper of Rs: 100 (duly notarized) by bidder (or each member of consortium, in case of consortium)

Name of work: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat.

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s .... nor any of its constituent partners have abandoned any work in India nor any contract awarded to us for such works has been rescinded during last five years, from the date of this bid submission.

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

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

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

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

Signed by the Authorized Signatory of the firm _____

Title of the office: _____

Name of the firm: _____

Date: _____

10.8 PQ_7: Details of Experience

<<Note: *To be filled for separately for Prime Bidder and consortium Member companies*>>

Date: dd/mm/yyyy

To
Chief Executive Engineer,
115, Smart City Cell,
Surat Municipal Corporation – Head Quarter,
Muglisara, Main Road, Surat – 395003, Gujarat.

Subject: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat.

Sir/Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document for "Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat."

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

Name of the Project	Prime Bidder				
	Project 1	Project 2	Project 3	-	Project n
General Information					
Client for which the project was executed					
Name of the client contact person(s)					
Designation of client contact person(s)					
Contact details of the client contact person(s)					
Project Details					
Description of the project					
Scope of work of the Bidder					
Deliverables of the Bidder					
Outcomes of the project					
Other Details					
Total cost of the project					
Total cost of the services provided by the Bidder					
Duration of the project (number of months, start date, completion date, current status)					
Other relevant information (Like number of Cameras and Type of Camera, ANPR etc)					
Mandatory Supporting Documents:					

Name of the Project	Prime Bidder				
	Project 1	Project 2	Project 3	-	Project n
Work order / Contract for the project/ Purchase Order					
Client Certificate giving present status of the project and view of the quality of services by the Bidder					

Name of the Project	Consortium Member-2	
	Project 1	Project n
General Information		
Client for which the project was executed		
Name of the client contact person(s)		
Designation of client contact person(s)		
Contact details of the client contact person(s)		
Project Details		
Description of the project		
Scope of work of the Bidder		
Deliverables of the Bidder		
Outcomes of the project		
Other Details		
Total cost of the project		
Total cost of the services provided by the Bidder		
Duration of the project (number of months, start date, completion date, current status)		
Other relevant information (Like number of Cameras and Type of Camera, ANPR etc)		
Mandatory Supporting Documents:		
Work order / Contract for the project/ Purchase Order		
Client Certificate giving present status of the project and view of the quality of services by the Bidder		

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

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

10.9 PQ_8: Power of Attorney for Prime Member of Consortium

Whereas the Surat Smart City Development Ltd., has invited applications from interested parties for the Selection of "**Implementing Agency for Integrated Command and Control Center (ICCC) in Surat**".

Whereas ....., ..., ...and ..... (Collectively "Consortium") being Members of the Consortium are interested in bidding for the Project in accordance with the terms and conditions of the Request for Proposal (RFP document) and other connected documents in respect of the Project, and

Whereas, it is necessary for the Members of the Consortium to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project and its execution.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS

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

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

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

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

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

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

For .....

(Signature)

.....

(Name & Title)

For .....

(Signature)

.....

(Name & Title)

For .....

(Signature)

.....

(Name & Title)

Witnesses:

1.

2.

(Executants)

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

Notes:

- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.*
- *Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*
- *For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention, 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Appostille certificate*

10.10 PQ_9: Format for Bank Guarantee for Bid Security (Earnest Money Deposit)

(To be printed on Rs. 100/- Stamp Paper)

This Deed of Guarantee is made on this _____day of _____, 2017 at _____ by _____ a _____ Bank and having its Head Office/Registered Office at _____ and a Branch Office at _____, Surat (hereinafter referred to as "the Bank" or "the Guarantor", which expression shall unless it be repugnant to the subject or context hereof be deemed to include its successors and assigns) in favour of Surat Smart City Development Ltd (SSCDL),having its Registered Office at _____ (hereinafter referred to as "Authority" which expression shall unless it be repugnant to the subject or context hereof be deemed to include its successors and assigns).

WHEREAS, the AUTHORITY undertook the process of competitive bidding in order to select the most desirable firm/company for Design, Development, Implementation & Maintenance for ICCC Project which purpose AUTHORITY issued a RFP document inviting Bids from the Bidders;

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

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

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

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

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

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

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

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

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

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

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

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

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

Signed and delivered by the

above named _____Bank by

its Authorized Signatory as authorized by

Board Resolution passed on _____/

Power of Attorney dated [.....]

_____

Authorized Signatory

Name :

Designation:

In the presence of:

1.

2.

11 Formats for Technical-Qualification Bid

11.1 Checklist for Technical- Qualification Document

#	Documents to be submitted	Submitted (Y / N)	Documentary Proof (Page No.)
1.	Details of Annual Turnover and Networth for last three financial years 2017-18, 2016-17, 2015-16 (Form PQ_3)		
2.	Certificate from the Statutory auditor / CA clearly specifying the annual turnover and Networth for the specified years (Form PQ_4). In case of consortium, all members to submit.		
3.	Details of the projects executed (Form PQ_7)		
4.	Authorization letter from OEMs (Form TQ_1)		
5.	Make & Model as per TQ_2		
6.	Compliance to Technical and Functional Specifications from the Bidder as per Annexure II, III & IV.		
7.	Compliance to Technical and Functional Specifications from the OEM for components mentioned in Annexure II, III & IV..		
8.	Datasheets highlighting the Technical Specification parameters in each datasheet for compliances as mentioned in Annexure II, III & IV.		
9.	Technical Proposal as mentioned in Section 9 and 11		

Note:

- All Technical-qualification bid document(s)/ details should be duly sealed & signed as required.
- In case of the deviation in the authorization letter by the manufacturer & forwarding letter; the price bid of such bidder will not be opened.
- Any conditional mention regarding any technical details or prices in any document(s)/ forwarding letter; price bid of such bidder will not be opened.

11.2 TQ_1: Format for Authorization Letters from OEMs

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

Date: dd/mm/yyyy

To
Chief Executive Engineer,
115, Smart City Cell,
Surat Municipal Corporation – Head Quarter,
Muglisara, Main Road, Surat – 395003, Gujarat.

Subject: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat

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

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

Sr. No.	Product Name	Make & Model
1		
2		
…		
n		

<< for components with 3 years of warranty support>>
We herewith certify that the above mentioned equipment / software products are neither end of sale nor end of the life and we hereby undertake to support these equipment / software till the successful completion of O&M phase (3 years of Warranty Support and 2 years of O&M).

<< for components with 5 years of warranty support>>
We herewith certify that the above mentioned equipment / software products are neither end of sale nor end of the life and we hereby undertake to support these equipment / software till the successful completion of 5 years of warranty from the date of Go-Live.

Yours faithfully,

(Signature of the Authorized Signatory from OEM)
Name
Designation
Date:
Place:

11.3 TQ_2: Format for Specifying the Make & Model

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
IT Hardware Components for ICCC									
1	Desktop PC	Number	75	3	Yes	Yes	Yes	Yes	Yes
2	Workstations for ICCC Operators	Number	50	3	Yes	Yes	Yes	Yes	Yes
3	49" Curved Monitor for ICCC Operators	Number	50	3	Yes	Yes	Yes	Yes	Yes
4	Monochrome Printer	Number	20	3	Yes	Yes	Yes	Yes	Yes
5	Multi Function Printer - 1	Number	5	3	Yes	Yes	Yes	Yes	Yes
6	Multi Function Printer - 2 (Heavy Duty)	Number	2	3	Yes	Yes	Yes	Yes	Yes
7	Colour Laser Printer	Number	1	3	Yes	Yes	Yes	Yes	Yes
8	Indoor Wifi Access Points	Number	30	5	Yes	Yes	Yes	Yes	Yes
9	Projector-1 (6000 lumens)	Number	2	3	Yes	Yes	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
10	Projector-2 (3000 lumens)	Number	1	3	Yes	Yes	Yes	Yes	Yes
11	Projector Screen 1 (200 Inch)	Number	2	3	Yes	Yes	Yes	Yes	Yes
12	Projector Screen 2 (100 Inch)	Number	1	NA	Yes	Yes	Yes	Yes	Yes
13	55" LED Display Screen	Number	15	3	Yes	Yes	Yes	Yes	Yes
14	Video Conference System	Number	1	3	Yes	Yes	Yes	Yes	Yes
15	Video Wall Cubes-70/72" DLP (2 video walls of 14 X 4 matrix)	Number	112	5	Yes	Yes	Yes	Yes	Yes
16	Network based Video Wall Controller (for 60 inputs and 60 outputs)	Number	2	5	Yes	Yes	Yes	Yes	Yes
17	Video Wall Monitoring Software	Number	1	5	Yes	Yes	Yes	Yes	Yes
18	8 Port web managed POE+ switch	Number	5	5	Yes	Yes	Yes	Yes	Yes
19	24 Port web manged switch	Number	5	5	Yes	Yes	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
20	24 Port web manged POE+ switch	Number	15	5	Yes	Yes	Yes	Yes	Yes
21	48 Port web managed Switch	Number	10	5	Yes	Yes	Yes	Yes	Yes
22	10 G SFP+ LX transceiver module	Number	70	5	Yes	Yes	Yes	Yes	Yes
IT Hardware Components for Data Center									
23	DC Core Switch	Number	2	5	Yes	Yes	Yes	Yes	Yes
24	10G BASE-T RJ-45 Copper Transceiver Module for DC Core Switch	Number	25	5	Yes	Yes	Yes	Yes	Yes
25	10 G SFP+ LX transceiver Module for DC Core Switch	Number	50	5	Yes	Yes	Yes	Yes	Yes
26	40G QSFP+LX transceiver Module for DC Core Switch	Number	16	5	Yes	Yes	Yes	Yes	Yes
27	DC Aggregation Switch	Number	6	5	Yes	Yes	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
28	10 G SFP base T copper transceiver for DC Aggregration Switch	Number	25	5	Yes	Yes	Yes	Yes	Yes
29	10 G SFP+ LX transceiver for DC Aggregration Switch	Number	75	5	Yes	Yes	Yes	Yes	Yes
30	40G QSFP+LX transceiver for DC Aggregration Switch	Number	12	5	Yes	Yes	Yes	Yes	Yes
31	DC Application & Delivery Controller with Global Server Load Balancing	Number	2	5	Yes	Yes	Yes	Yes	Yes
32	Wireless LAN controller (Hardware/Software with server) with necessary licenses	Number	1	5	Yes	Yes	Yes	Yes	Yes
33	Rack Servers for SMC Own Requirement	Number	9	5	Yes	Yes	Yes	Yes	Yes
34	Blade/Rack Servers for SI's Solution under RFP	Number	To be specified by	5	Yes	Yes	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
			bidder as per sizing						
35	Blade Chassis for Blade Server for above mentioned Blade Servers	Number	To be specified by bidder as per sizing	5	Yes	Yes	Yes	Yes	Yes
36	Storage with 2 no. of SAN Switches & Complete mounting accessories	Number	1	5	Yes	Yes	Yes	Yes	Yes
Software Components for Data Center									
37	ICCC Software with perpetual license with unlimited sensors	Number	1	3	Yes	Yes	Yes	Yes	Yes
38	ICCC Software integration & implementation Cost per Use Case	Use Case	50	NA	Yes	Yes	Yes	Yes	Yes
39	Call Center Management Solution (Software + License)	Number	1	3	Yes	Yes	Yes	NA	NA

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
40	Enterprise Security & Antivirus Software License for all Servers	Number	To be specified by bidder as per requirement	3	Yes	Yes	Yes	Yes	NA
41	Server OS Licenses (for physical Servers)	Number	To be specified by bidder as per requirement	NA	Yes	Yes	Yes	Yes	NA
42	Server OS Licenses (for VMs)	Number	To be specified by bidder as per requirement	NA	Yes	Yes	Yes	Yes	NA
43	Database Licenses	Number	To be specified by bidder as per requirement	NA	Yes	Yes	Yes	Yes	Yes
44	Virtualisation Management Software	Number	To be specified by bidder as	NA	Yes	Yes	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
			per requirement						
45	Virtualisation Host Licenses	Number	To be specified by bidder as per requirement	NA	NA	NA	NA	NA	NA
46	MS Office Business 2019 (standard one-time purchase) License	Number	100						
Civil and Non IT for Data Center and ICCC									
47	42U Rack	Number	15	3	Yes	Yes	Yes	Yes	Yes
48	IP KVM Switch	Number	1	3	Yes	Yes	Yes	Yes	Yes
49	Access Control System	Number	1	3	Yes	Yes	Yes	Yes	Yes
50	Fire Detection and Alarm System	Number	1	3	Yes	Yes	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II & III on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II & III on OEM's Letter Head	OEM's Compliance as per TQ_1
51	Water Leak Detection System	Number	To be specified by bidder as per requirement	3	Yes	Yes	Yes	Yes	Yes
52	Rodent Repellent System	Number	To be specified by bidder as per requirement	3	Yes	Yes	Yes	Yes	Yes
53	Fire Suppression System	Number	1	3	Yes	Yes	Yes	Yes	Yes
54	PAC System of 10 tonnes each	Number	4	5	Yes	Yes	Yes	Yes	Yes
55	Data Center Management System	Number	1	3	Yes	Yes	Yes	Yes	Yes
56	Civil Work for DC (Raised Floor, False Ceiling, Ducting, Access Doors, Painting, Partitioning etc)	sq ft	1419	NA	NA	NA	NA	NA	NA

12 Commercial Bid Format & Instructions

12.1 Cover letter for Commercial Bid

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

Date: dd/mm/yyyy

To
Chief Executive Engineer,
115, Smart City Cell,
Surat Municipal Corporation - Head Quarter,
Muglisara, Main Road, Surat - 395003, Gujarat.

Subject: Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat.

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

Dear Sir/ Madam,

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

1. PRICE AND VALIDITY
   - All the prices mentioned in our Tender are in accordance with the terms as specified in the Tender documents. All the prices and other terms and conditions of this Tender are valid for entire contract duration.
   - We hereby confirm that our Tender prices include all taxes. Taxes are quoted separately under relevant sections, as specified in the Bid Document formats.
   - We have studied the clause relating to Indian Income Tax and hereby declare that if any income tax, surcharge on Income Tax, Professional and any other corporate Tax in altercated under the law, we shall pay the same.

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

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

3. QUALIFYING DATA

We confirm having submitted the information as required by you in your Instruction to Bidders. In case you require any other further information/documentary proof in this regard before evaluation of our Tender, we agree to furnish the same in time to your satisfaction.

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

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

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

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

Thanking you,

Yours faithfully,

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

12.2 General Instructions

1. Bidder should provide all prices as per the prescribed format under this Section.
2. All the prices are to be entered in Indian Rupees (INR) only
3. The Prices mentioned in the Price Bid should include all applicable taxes & duties as applicable. The L1 evaluation will be done exclusive of taxes but inclusive of any duties applicable to the products which are not covered under GST. The bidder to quote the duties along with the rate of products proposed for L1 evaluation. The SI needs to account for all Out of Pocket expenses due to Boarding, Lodging and other related items.
4. SSCDL shall be entitled to deduct tax at source or any other taxes/ cess as may be applicable
5. It is mandatory to provide breakup of all Taxes, Duties and Levies wherever asked for.
6. SSCDL reserves the right to ask the SI to submit proof of payment against any of the taxes, duties, levies indicated.
7. The Unit Rate as mentioned in the following formats may be used for the purpose of 'Change Order' for respective items, if any. However, based on the market trends, SSCDL retains the right to negotiate this rate for future requirement
8. Quantities mentioned in the commercial formats are indicative in number. SSCDL may or may not procure the listed components in mentioned quantities. SSCDL has the rights to delete any of the component before final implementation. Also, SSCDL reserves the right to remove any of the line components (as per BOQ provided).
9. The quantity specified in BOQ(TQ_2) & Price Bid should be same.
10. Any additional component required as part of Data Centre Structured Cabling solution shall be provided/supplied without any additional cost during the entire contract duration.
11. No escalations of prices will be considered under any circumstances.
12. The successful bidder shall not object to the upward or downward variation in quantities of any item. SSCDL/SMC may or may not procured certain items as mentioned in Price Bid, if required.
13. The rates mentioned in the price bid for "ICCC software integration and implementation cost per use case" will be valid during the entire contract period and for other items it will be valid for the period of 3 years from the date of issuance of the RO1.
14. No claim shall be entertained or become payable for price variation of additional quantities
15. Bidder shall be bound to give same or more % of discount on the list price of the OEMs on the future purchases (additional purchases within the contract period) by SSCDL or. Bidder shall ensure that the future products supplied are of latest specifications as per the OEM roadmap.

16. For the purpose of evaluation of Commercial Bids, SSCDL shall make appropriate assumptions to arrive at a common Bid price for all the bidders. This however shall have no co-relation with the Contract value or actual payment to be made to the Bidder.
17. SSCDL also intends to utilize various rates obtained through this tender for requirements across various departments. Bidders are requested to factor this larger demand and give the best possible rate to SSCDL.
18. Line items mentioned in the Commercial Formats are for representation purpose and SI may propose alternate technology / solution (with proper justification). Bidders are required to suitably add line items / merge the cost components depending upon their proposed solution.
19. No escalations of prices will be considered under any circumstances.

12.3 Commercial Bid Format

A1. CAPITAL EXPENDITURE (CAPEX)

A1. CAPITAL EXPENDITURE (CAPEX)								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
SITC of IT Hardware Components for ICCC								
1	Desktop PC	Number	75					
2	Workstations for ICCC Operators	Number	50					
3	49" Curved Monitor for ICCC Operators	Number	50					
4	Monochrome Printer	Number	20					
5	Multi Function Printer - 1	Number	5					
6	Multi Function Printer -2 (Heavy Duty)	Number	2					
7	Colour Laser Printer	Number	1					
8	Indoor Wifi Access Points	Number	30					
9	Projector-1 (6000 lumens)	Number	2					
10	Projector-2 (3000 lumens)	Number	1					
11	Projector Screen 1 (200 Inch)	Number	2					
12	Projector Screen 2 (100 Inch)	Number	1					

A1. CAPITAL EXPENDITURE (CAPEX)								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
13	55" LED Display Screen	Number	15					
14	Video Conference System	Number	1					
15	Video Wall Cubes- 70/72" DLP (2 video walls of 14 X 4 matrix)	Number	112					
16	Network based Video Wall Controller (for 60 inputs and 60 outputs)	Number	2					
17	Video Wall Monitoring Software	Number	1					
18	8 Port web managed POE+ switch	Number	5					
19	24 Port web manged switch	Number	5					
20	24 Port web manged POE+ switch	Number	15					
21	48 Port web managed Switch	Number	10					
22	10 G SFP+ LX transceiver module	Number	70					
SITC of IT Hardware Components for Data Center								
23	DC Core Switch	Number	2					
24	10G BASE-T RJ-45 Copper Transceiver Module for DC Core Switch	Number	25					
25	10 G SFP+ LX transceiver Module for DC Core Switch	Number	50					

A1. CAPITAL EXPENDITURE (CAPEX)								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
26	40G QSFP+LX transceiver Module for DC Core Switch	Number	16					
27	DC Aggregation Switch	Number	6					
28	10 G SFP base T copper transceiver for DC Aggregration Switch	Number	25					
29	10 G SFP+ LX transceiver for DC Aggregration Switch	Number	75					
30	40G QSFP+LX transceiver for DC Aggregration Switch	Number	12					
31	DC Application & Delivery Controller with Global Server Load Balancing	Number	2					
32	Wireless LAN controller (Hardware/Software with server) with necessary licenses	Number	1					
33	Rack Servers for SMC Own Requirement	Number	9					
34	Storage with 2 no. of SAN Switches & Complete mounting accessories	Number	1					
SITC of Software Components for Data Center								
35	ICCC Software with perpetual license with unlimited sensors	Number	1					

A1. CAPITAL EXPENDITURE (CAPEX)								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
36	ICCC Software integration & implementation Cost per Use Case	Use Case	50					
37	Call Center Management Solution (Software + License)	Number	1					
38	MS Office Business 2019 (standard one-time purchase) License	Number	100					
Civil and Non IT for Data Center and ICCC								
39	42U Rack	Number	15					
40	IP KVM Switch	Number	1					
41	Access Control System	Number	1					
42	Fire Detection and Alarm System	Number	1					
43	Fire Suppression System	Number	1					
44	Data Center Management System	Number	1					
45	Civil Work for DC (Raised Floor, False Ceiling, Ducting, Access Doors, Painting, Partitioning etc)	sq ft	1419					
46	PAC system of 10 tonnes each	Number	4					
Total (INR)- Without GST								
Total (INR)- With GST								

A1. CAPITAL EXPENDITURE (CAPEX)								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
Total (INR)- Without GST in Words								

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
SITC of IT Hardware Components for Data Center								
1	Blade/Rack Servers for SI's Solution under RFP	Number	To be specified by bidder as per sizing					
2	Blade Chassis for Blade Server for above mentioned Blade Servers	Number	To be specified by bidder as per sizing					
SITC of Software Components for Data Center								

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
3	Enterprise Security & Antivirus Software License for all Servers	Number	To be specified by bidder as per requirement					
4	Server OS Licenses (for physical Servers)	Number	To be specified by bidder as per requirement					
5	Server OS Licenses (for VMs)	Number	To be specified by bidder as per requirement					
6	Database Licenses	Number	To be specified by bidder as per requirement					
7	Virtualisation Management Software	Number	To be specified by bidder as					

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
			per requirement					
8	Virtualisation Host Licenses	Number	To be specified by bidder as per requirement					
Civil and Non IT for Data Center and ICCC								
9	Water Leak Detection System	Number	To be specified by bidder as per requirement					
10	Rodent Repellent System	Number	To be specified by bidder as per requirement					
Total (INR)- Without GST								
Total (INR)- With GST								

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
Total (INR)- Without GST in Words								

SUMMARY OF CAPEX COST

Total (INR)- Without GST (A=A1+A2)	
Total (INR)- With GST(A=A1+A2)	
Total (INR)- Without GST in Words	

B1. OPERATION AND MAINTENANCE EXPENDITURE (OPEX)

B1. OPERATION AND MAINTENANCE EXPENDITURE (OPEX)						
#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 4th & 5th Year B=A*2 (INR)	Applicable GST (G)%	Total GST C=B*G% (INR)	Total With GST for 4th & 5th Year D=B+C (INR)
IT hardware for ICCC						
1	Desktop PC					
2	Workstations for ICCC Operators					
3	49" Curved Monitor for ICCC Operators					
4	Monochrome Printer					
5	Multi Function Printer - 1					

B1. OPERATION AND MAINTENANCE EXPENDITURE (OPEX)						
#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 4th & 5th Year B=A*2 (INR)	Applicable GST (G)%	Total GST C=B*G% (INR)	Total With GST for 4th & 5th Year D=B+C (INR)
6	Multi Function Printer -2 (Heavy Duty)					
7	Colour Laser Printer					
8	Projector-1 (6000 lumens)					
9	Projector-2 (3000 lumens)					
10	Projector Screen 1 (200 Inch)					
11	55" LED Display Screen					
12	Video Conference System					
Civil and Non IT for Data Center and ICCC						
13	Access Control System					
14	Fire Alarm & Smoke Detector System/VESDA					
15	Water Leak Detection System					
16	Rodent Repellent System					
17	Fire Suppression System					
18	Data Center Management System					

B1. OPERATION AND MAINTENANCE EXPENDITURE (OPEX)						
#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 4th & 5th Year B=A*2 (INR)	Applicable GST (G)%	Total GST C=B*G% (INR)	Total With GST for 4th & 5th Year D=B+C (INR)
ATS Charges (OEM)						
19	ICCC Software Application					
20	Call Center Management Solution					
21	Enterprise Security & Antivirus Software License for all Servers					
22	Virtualisation Software Support					
Total (INR)- Without GST						
Total (INR)- With GST						
Total (INR)- Without GST in Words						

B2. APPLICATION SUPPORT COST (BIDDER)

B2. Application Support Cost (Bidder)						
#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 5 Years B=A*5 (INR)	Applicable GST (G)%	Total GST C =B*G% (INR)	Total With GST for 5 Years D=B+C (INR)
1	SI's Support cost including onsite manpower deployment	3,00,000.00	15,00,000.00	18%	2,70,000.00	17,70,000.00
Total (INR)- Without GST						
Total (INR)- With GST						
Total (INR)- Without GST in Words						

SUMMARY OF OPEX COST

Total (INR)- Without GST (B=B1+B2)	
Total (INR)- With GST(B=B1+B2)	
Total (INR)- Without GST in Words	

C. PROJECT SUMMARY

C. Project Summary			
#	**Commercial Bid Summary**	**Total Price (INR) w/o Tax**	**Total Price (INR) with Tax**
1	CAPEX (A1+A2)		
2	OPEX (B1+B2)		
	Total Project Cost (INR)		
	Total Project Cost In words		

13 Annexure I: Detailed Scope of Work and Considerations

The SI will be required and responsible to carry out various activities as detailed below during the implementation and post implementation period for the duration of the contract.

13.1 Inception Phase

The SI will be responsible for preparation of detailed project plan. The plan shall address the minimum requirements as following:

1. Define an organized set of activities for the project and identify the interdependence between them.
2. Resource planning and loading for each phase/activity. This must also indicate where each resource would be based during that phase, i.e. onsite at the SSCDL office or off site at SI premises.
3. Establish and measure resource assignments and responsibilities
4. Highlight the milestones and associated risks
5. Communicate the project plan to stakeholders with meaningful reports.
6. Measure project deadlines and performance objectives.
7. Project Progress Reporting. During the implementation of the project, the SI should present weekly reports. This report will be presented in the steering committee meeting to SSCDL. The report should contain at the minimum the under mentioned:
    - Results accomplished during the period (weekly)
    - Cumulative deviations from the schedule date as specified in the finalized Project Plan
    - Corrective actions to be taken to return to planned schedule of progress
    - Plan for the next week
    - Proposed revision to planned schedule provided such revision is necessitated by reasons beyond the control of SI
    - Support needed
    - Highlights/lowlights
    - Issues/Concerns
    - Risks/Show stoppers along with mitigation
8. Identify the activities that require the participation of client personnel (including SSCDL, the Program Management Unit etc.) and communicate their time requirements and schedule early enough to ensure their full participation at the required time.

13.2 Requirement Phase

The SI must perform the detailed assessment of the business requirements and IT Solution requirements as mentioned in this RFP. Based on the understanding and its assessment, SI shall develop & finalize the System Requirement Specifications (SRS) in consultation with SSCDL and its representatives. While doing so, SI is expected to do following:

1. SI shall study and revalidate the requirements given in the RFP with SSCDL and submit as an exhaustive FRS document.
2. SI shall develop the FRS and SRS documents.
3. SI shall develop and follow standardized template for requirements capturing and system documentation.
4. SI must maintain traceability matrix from SRS stage for the entire implementation.
5. For all the discussion with SSCDL team, SI shall be required to be present at SSCDL office with the requisite team members.

13.3 Design Phase

The SI shall build the solution as per the Design Considerations detailed in Section 4**.** The solution proposed by SI should comply with the design considerations requirements as mentioned therein. SI is responsible to design the solution as per proposed architecture mentioned in section 4.2 by considering the technical benchmark/ specifications mentioned in **Annexure II, III and IV respectively** for Software and Hardware components.

The SI is also responsible to design the data center (site preparation) proposed at ICCC. The building drawings are provided separately.

13.4 Development / Implementation Phase

The SI shall carefully consider the scope of work and provide a solution that best meets the project's requirements as mentioned in this RFP. The implementation of the application software will follow the procedure mentioned below:

1. Software Products (Configuration and Customization): The following is required to be adhered:
    - SI will be responsible for supplying the application and licenses of related software products and installing and configuring the same so as to meet project requirements.
    - SI shall have provision for procurement of licenses in a staggered manner as per the actual requirement of the project.
2. SI shall also supply any other tools & accessories required to make the integrated solution complete as per requirements. For the integrated solution, the SI shall supply:
    - Software & licenses.
    - Supply tools, accessories, documentation and provide a list of the same. Tools and accessories shall be part of the solution.
    - System Documentation: System Documentation both in hard copy and soft copy to be supplied along with licenses and shall include but not limited to following. Documentation to be maintained, updated and submitted to SSCDL/SMC regularly :
        - Functional Requirement Specification (FRS)
        - System Requirements Specifications (SRS)

- Design Document
- Any other explanatory notes about system
- Traceability matrix
- Technical and product related manuals
- Installation guides
- User manuals & Screen Capture videos
- System administrator manuals
- Toolkit guides and troubleshooting guides
- Other documents as prescribed by SSCDL/SMC
- Change management histories
- Version control data
- SOPs, procedures, policies, processes, etc. developed for SSCDL/SMC
- Programs :
    - Entire source codes
    - All programs must have explanatory notes for understanding
    - Version control mechanism
    - All old versions to be maintained
- Test Environment :
    - Detailed Test methodology document
    - Module level testing
    - Overall System Testing
    - Acceptance test cases

3. Bespoke (Custom Developments): The SI shall be responsible for necessary customization that are required to address the requirements mentioned in this RFP. The SI shall supply the following documents along with the developed components:
    - Business process guides
    - Program flow descriptions
    - Data model descriptions
    - Sample reports
    - Screen formats
    - Frequently asked question (FAQ) guides
    - User manual
    - Technical manual
    - Any other documentation required for usage of implemented solution

(These documents need to be updated after each phase of project and to be maintained updated during entire project duration. The entire documentation will be the property of SSCDL/SMC.)

4. Manpower Requirement: The SI shall be required to depute well competent and experienced manpower in required strength during the implementation period. The team should be led by competent Project Manager and ICCC Expert possessing below mentioned experience and qualification.

#	Resource Type
1	**Project Manager**

#	Resource Type
	• **Educational Qualification:** BE / B. Tech / MCA • **Work experience-** Minimum 8 years of experience in ICT implementation Projects
2	**ICCC Expert** • **Educational Qualification:** BE / B. Tech / MCA • **Work experience-** Minimum 5 years of experience in software implementation Projects

13.5 Procurement, Supply, Installation and Commissioning of IT and non IT infrastructure at ICCC

The SI shall be responsible for procurement, supply and installation of entire ICT hardware and software infrastructure at the Command and Control Centre for successful operations of the systems. The SI is also responsible to procured all needed non IT components which are required to run the smooth operation of this project. The IT and non IT infra procurement will be as per Indicative Bill of Material at **TQ_2**, but not limited to, including installation materials/accessories/libraries/assemblies, electrical wires, patch cords etc. necessary for the installation of the Infrastructure. The IT and non IT infra procurement will be planned considering the below factors:

- Ensure redundancy for all the key components to ensure that no single point of failure affects the performance of the overall system
- Support peak loads
- SI will not procure Infrastructure including Hardware, COTS Software licenses and other system software etc. at the start of the project, but will procure after discussion and receipt of go ahead from SSCDL
- Procurement and supply of requisite licenses (Commercial off the shelf - COTS), Installation and implementation (including configuration /customization and Testing) of proposed ICCC. All licenses procured under this project should be in the name of SMC /SSCDL.
- The licenses to be procured for ICCC Application should be perpetual and enterprise level not limited to number of uses cases/ IOT devices or north / south bound interfaces.
- Virtualization technologies to be used to reduce the physical space required for hosting
- Procurement of IT and Non IT infrastructure for Data Center – Servers, racks, software licenses etc. as per Bill of Material mentioned in RFP.
- Procurement of IT infrastructure with software for ICCC – Desktops, printers, Wi-Fi Access points, Video Wall, Displays etc. as per Bill of Material mentioned in this RFP.
- ICT and non IT infra deployed for ICCC should be dedicated for the project and SI shall not use the same for any other purpose.
- The ownership of ICT and non IT infrastructure shall vest SSCDL/SMC.

- SI to ensure warranties/AMCs are procured for all the hardware components for entire duration of the project. For software components the support from OEM to be obtained for prescribed components. There would be a mechanism to verify these details on annual basis.
- No Products supplied under the RFP should be nearing their date of "end of life".
- All IT equipment models offered should be latest released with bundled version update
- All documentation generated inclusive of IT architecture, functional specifications, design and user manuals of the IT solution and documentation of non-IT components during design, installation and commissioning phase shall always be made available to the SSCDL /SMC
- Seamless Integration with other Smart City Systems and applications
- Standard business process management framework should be followed for workflow management with capabilities of configurability at user level.
- Acceptance of the source code is by installing and generating the object code on a test environment performing identically to that of the production environment
- The SI shall provide system integration services to customize and integrate the applications procured. The ICCC application proposed by the SI should have open APIs and should be able to integrate and fetch the data from other third party systems already available or coming up in the near future.
- Benchmark specifications for various items mentioned above are given in the **Annexure II ,III and IV t**o this RFP document. The SI is required to size and provide IT infra to meet the project functional requirements and Service Level Agreements (SLAs).
- The SI shall be required to submit a detailed installation report post installation of all the equipment at approved locations. The report shall be utilized during the acceptance testing period of the project to verify the actual quantity of the equipment supplied and commissioned under the project.

13.6 Site Preparation for Data Center

The SI shall be responsible for undertaking end to end activities as mentioned below, but not limited to:

- Cutting and chipping of existing floors
- Hardware and metals
- Glazing
- Paint work
- False flooring
- False ceiling
- Storage

- Portioning
- Doors and locks
- Painting
- Fire proofing all surfaces
- Insulation

1. False Ceiling

The SI shall install the top false ceiling with 1' 6" of space from the actual room ceiling. This false ceiling shall house A/C ducts (if required) and cables of electrical lighting, firefighting and CCTV. Appropriate pest control measures shall be taken to keep pests at bay.

2. Raised Flooring

The SI shall be responsible for raised flooring, wherever required, and provide for suitable pedestal and under structure designed to withstand various static and rolling loads. The entire raised floor shall have laminated floor covering and beadings on all sides of the panel.

3. Air Conditioning and Nature Convection

Appropriate air conditioning system shall be exclusively installed to maintain the required temperature especially at the Datacenter. The A/C shall be capable of providing sensible cooling capacities at ambient temperature and humidity with adequate airflow. The task of the SI shall include (but not limited to):

- Connecting the indoor unit with the mains electrical point.
- Connecting indoor and outdoor units mechanically (with 18G hard gauge copper piping).
- Connecting indoor and outdoor unit electrically.
- The air conditioner shall be linked to secondary power supply as well to prevent them from shutting down in case of power outage.

4. **Electrical work**

The electrical cabling work shall include the following:

- Main electrical panel
- Power cabling
- Power distribution board
- Power cabling for utility component and utility points etc.
- Separate Earth pits for the component
- The SI shall use fire retardant cables of rated capacity exceeding the power requirements of existing and proposed components to be used at maximum capacity.

5. Network and structural Cabling

SI is responsible to carry out all network and structured cabling including but not limited to Passive Components like Patch Panel with I/O, LIU, Various lengths of Optical Fiber Patch Cord

(like LC-LC & LC-SC e.t.c.), 6 Core SM Optical Fiber Cable, OFC Joint/Splicing, Cat-7/Cat-7A/Cat6/Cat-6A Cable with crimping & Patch Cords, Inter-Rack (Individual Rack) and Intra Rack (Rack to Rack) Structured Cabling/Patching, Rack Cable Manager, Pipes, Earthing, Necessary Power cables (like C13 to C14) etc. for the data center under this RFP. Any additional component required as part of Data Centre Structured Cabling solution shall be provided/supplied without any additional cost during the entire contract duration.

6. **Fire Detection and Suppression System**
   - The facility shall be equipped with adequate and advanced Fire Detection and Suppression system. The system shall raise an alarm in the event of smoke detection. The system shall have proper signage, response indicators and hooters in case of an emergency.
   - The facility is to be equipped with gas based fire suppression system appropriately sized with their sub systems.

7. **Rodent Repellent**
   - The entry of rodents and other unwanted pests shall be controlled using non-chemical, non-toxic devices. Ultrasonic pest repellents shall be provided in the false flooring and ceiling to repel the pests without killing them. However, the SI shall conduct periodic pest control using chemical spray once in a quarter as a contingency measure to effectively fight pests.

8. **Access control system**
   - The Biometric/Access card based Access Control System shall be deployed with the objective of allowing entry and exit to and from Data center to authorized personnel only with appropriate door locks and controller assemble connected with Data Center Management system. The system deployed shall be based on proximity as well as biometric technology for critical areas and proximity technology for non-critical areas.

9. **Water leak detection system**
   - The Water Leak Detection System shall be installed to detect any seepage of water into the Data Centre and alert the concerned for such leakage. It shall consist of water leak detection cable and alarm module. The cable shall be installed in the ceiling and floor areas around the periphery.

10. **Data Center Management System/Building Management System –** The SI will be required to provide the standard Data Center Management System that enable to monitor and manage parameters related to PAC, fire alarm, water leak detection, rodent repellent system, access control etc.

13.7 Integration and Implementation Phase

The Command and control center should be integrated with feeds of all tracks/component deployed or to be deployed in future under Surat City. The SI shall provide the testing strategy including traceability matrix, test cases and shall conduct the testing of various components of the software

developed/customized and the solution as a whole. The testing should be comprehensive and should be done at each stage of development and implementation. The details of the applications will be provided to successful bidder. The SI will be required to deploy experienced manpower onsite and shall extend necessary backend support so that the integration and implementation of the use cases is completed within the time duration specified in the RFP.

13.8 Support for Open Data Platform

The ICCC software solution should have provision for sharing the data sets for open data platform of SMC and state/central government. Necessary APIs in this regard shall be developed/customized from time to time so that necessary datasets can be made accessible.

13.9 Data Analytics Capability

1. The ICCC software solutions should have inbuilt capability of data analytics/ business intelligence.
2. The Data Analytics/ BI Tool of software solution should work as single platform for analyzing data coming/input from various IT components/applications of SMC/SSCDL or any other government departments.
3. The system should be able to generate report in the user defined manner.
4. There should be a provision for a dash board which may take input from various system like individual sensors of multiple IT components (SCADA sensor, Environment sensors etc.)
5. Apart from basic analytics system should also have provision to perform Predictive Analysis.
6. User should be able to choose any permutation and combinations of data fields to perform predictive analysis.
7. System should be able to predict the events, make scenarios which helps in decision making to city authorities.
8. The Data analytics/BI tool should have ability to analye the useful information and sharing it with general public. For example in case of water supply effected areas and traffic situation awareness etc.
9. System should have capabilities to suggest best response options on the basis of current and historic data sets.
10. Solution should enable the department to monitor activities and operations relating to the citizen (Municipal) service being provided, feedback and grievances received
11. Solution should help department understand the level of responsiveness of the officers concerned in terms of their response to the grievances.
12. The solution should also contain abilities for forecasting and scenario analysis, this will help the department understand the trends of different concern areas.
13. Forward looking decision making – BI and analytics tool provide the predictive and forecasting capabilities which can help department in forward looking policy and decision making.
14. System shall provide an Enterprise Reporting and Visualization solution to author, manage, and deliver all types of highly formatted reports
15. The solution should have mining, analytical and querying capabilities, and should be able to interoperate with other DBMS

16. The BI Platform should have the capability to schedule reports on the basis of a time calendar i.e. by hour, day, week, month, etc.
17. The BI Platform should have the capability to schedule reports on the basis of a trigger or an occurrence such as an email, database refresh, etc.
18. Solution should provide capability to :
    - Understand issues and concerns of citizens in a quick and effective manner
    - Monitor progress of grievances and quality of grievance redressal
    - Understand special / specific needs for different part of cities / subject areas affecting citizens (such as water, electricity etc.)

Please refer Annexure II for more details on ICCC software requirements

13.10 Vendor Management Services

The activities shall include:

1. Coordination with all the stakeholders (SMC, SSCDL, PMC, Vendors) to ensure that all activities are carried out in a timely manner.
2. SI shall coordinate and follow-up with all the relevant vendors to ensure that the issues are resolved in accordance with the SLAs agreed upon with them.
3. SI shall also ensure that unresolved issues are escalated to respective departments.
4. SI shall maintain database of the various vendors with details like contact person, telephone nos., escalation matrix, response time and resolution time commitments etc.

13.11 Testing and Acceptance Criteria

1. SI shall demonstrate the following mentioned acceptance criteria prior to acceptance of the solution as well as during project operations phase, in respect of scalability and performance etc. The Acceptance criteria parameters may get revised and finalized with mutual agreement, however, the decision of SSCDL/SMC would be final and binding in this regard. A comprehensive system should be set up that would have the capability to log & track the testing results, upload & maintain the test cases and log & track issues/bugs identified.
2. The following table depicts the details for the various kinds of testing envisaged for the project:

Type of Testing	Responsibility	Scope of Work
System Testing	SI	1. SI to perform System testing 2. SI to prepare test plan and test cases and maintain it. SSCDL/SMC may request the SI to share the test cases and results 3. Should be performed through manual as well as automated methods 4. Automation testing tools to be provided by SI. SSCDL/SMC doesn't intend to own these tools
Integration Testing	SI	1. SI to perform Integration testing

Type of Testing	Responsibility	Scope of Work
		2. SI to prepare and share with SSCDL/SMC the Integration test plans and test cases 3. SI to perform Integration testing as per the approved plan 4. Integration testing to be performed through manual as well as automated methods 5. Automation testing tools to be provided by SI. SSCDL/SMC doesn't intend to own these tools
Performance and load Testing	• SI • SSCDL/SMC / Third Party Auditor (to monitor the performance testing)	1. SI to do performance and load testing. 2. Various performance parameters such as transaction response time, throughput, page loading time should be taken into account. 3. Load and stress testing of the Project to be performed on business transaction volume 4. Test cases and test results to be shared with SSCDL/SMC. 5. Performance testing to be carried out in the exact same architecture that would be set up for production. 6. SI need to use performance and load testing tool for testing. SSCDL/SMC doesn't intend to own these tools. 7. SSCDL/SMC if required, could involve third party auditors to monitor/validate the performance testing. Cost for such audits to be paid by SSCDL/SMC .
Security Testing (including Penetration and Vulnerability testing)	• SI • SSCDL/SMC / Third Party Auditor (to monitor the security testing)	1. The solution should demonstrate the compliance with security requirements as mentioned in the RFP including but not limited to security controls in the application, at the network layer, network, data centre(s), security monitoring system deployed by the SI 2. The solution shall pass vulnerability and penetration testing for rollout of each phase. The solution should pass web application security testing for the portal, mobile app and other systems and security configuration review of the infrastructure. 3. SI should carry out security and vulnerability testing on the developed solution.

Type of Testing	Responsibility	Scope of Work
		4. Security testing to be carried out in the exact same environment/architecture that would be set up for production. 5. Security test report and test cases should be shared with SSCDL/SMC 6. Testing tools if required, to be provided by SI. SSCDL/SMC doesn't intend to own these tools 7. During O&M phase, penetration testing to be conducted on yearly basis and vulnerability assessment to be conducted on half-yearly basis. SSCDL/SMC will also involve third party auditors to perform the audit/review/monitor the security testing carried out by SI. Cost for such auditors to be paid by SSCDL/SMC.
User Acceptance Testing of Project	• SSCDL/SMC appointed third party auditor	1. SSCDL/SMC appointed third party auditor to perform User Acceptance Testing 2. SI to prepare User Acceptance Testing test cases 3. UAT to be carried out in the exact same environment/architecture that would be set up for production 4. SI should fix bugs and issues raised during UAT and get approval on the fixes from SSCDL/SMC / third party auditor before production deployment 5. Changes in the application as an outcome of UAT shall not be considered as Change Request. SI has to rectify the observations.

Note:

- Bidder needs to provide the details of the testing strategy and approach including details of intended tools/environment to be used by SI for testing in its technical proposal. SSCDL/SMC does not intend to own the tools.
- The SI shall work in a manner to satisfy all the testing requirements and adhere to the testing strategy outlined. The SI must ensure deployment of necessary resources and tools during the testing phases. The SI shall perform the testing of the solution based on the approved test plan, document the results and shall fix the bugs found during the testing. It is the responsibility of SI to ensure that the end product delivered by the SI meets all the requirements specified in the RFP. The SI shall take remedial action based on outcome of the tests.
- The SI shall arrange for environments and tools for testing and for training as envisaged. Post Go-Live; the production environment should not be used for testing and training

purpose. Detailed process in this regard including security requirement should be provided by the SI in its technical proposal. The process will be finalized with the selected bidder.

- If required, SSCDL/SMC may appoint any Third Party Auditors directly at its cost. SI needs to prepare and provide all requisite information/documents/support to third party auditor. The cost of rectification of non-compliances shall be borne by the SI.

13.12 Go-Live Preparedness and Go-Live

1. SI shall prepare and agree with SSCDL, the detailed plan for Go-Live (in-line with SSCDL's implementation plan as mentioned in RFP).
2. The SI shall define and agree with SSCDL, the criteria for Go-Live.
3. The SI shall ensure that all the data migration is done from existing systems.
4. SI shall submit signed-off UAT report (issue closure report) ensuring all issues raised during UAT are being resolved prior to Go-Live.
5. SI shall ensure that Go–Live criteria as mentioned in User acceptance testing of Project is met and SI needs to take approval from SSCDL team on the same.
6. Go-live of the application shall be done as per the finalized and agreed upon Go-Live plan.

13.13 Training and Capacity Building

1. The purpose of this section is to define the scope of work for training and capacity building to be implemented at various levels namely: SMC/SSCDL employees, Command Centre Operators, Stakeholder Departments, Exiting Vendors whose services are getting integrated etc.
2. The SI's scope of work also includes preparing the necessary documentation and aids required for successful delivery of such trainings.
3. SI will prepare all the requisite audio/visual training aids that are required for successful completion of the training for all stakeholders such as
    - Training manuals
    - Computer based training modules
    - Video (recorded sessions) for ICCC operations, back end modules, business intelligence, dynamic reporting
    - Presentations
    - User manuals
    - Operational and maintenance manuals for the ICCC modules
    - Regular updates to the training aids prepared under this project
4. SI will get the Training and capacity building strategy including training material finalized with SSCDL/SMC before starting the training programs.
5. SI must plan all the training and its material keeping defined and agreed SOPs of ICCC as prime focus.
6. SI has to ensure that the training sessions held are effective and that the attendees would be able to carry on with their work efficiently. For this purpose, it is necessary that the effectiveness of training sessions is measured.

13.14 ICCC Infrastructure Provisioning

SI is responsible to size and propose the IT infrastructure required for smooth functioning of the entire solution as per OEM guidelines and standard industry practice. SI has to supply, install, commission and manage/maintain the IT Infrastructure components such as Servers, Databases, Storage Solution, Software and other supporting IT components as required at the Data Centre that has been proposed as part of the bid.

The System Integrator has to procure the materials and equipment as required and given as part of the System Integrator's response. However, it should be noted that the System Integrator has to procure all necessary equipment to run the solution as per the requirement of the RFP documents including the SLA. In case, it is identified that certain components are required but not quoted by the Supplier, the SI will procure and commission the same without any financial implications. The System Integrator shall note that the specification provided is the minimum requirement and the System Integrator shall procure better equipment if it is required to meet the service levels mentioned in the RFP.

SMC/SSCDL reserves the right to ask the bidder to supply only part of the hardware quoted and procure the rest of it separately by itself. The payments schedule will be adjusted accordingly.

All the hardware shall be new and procured for this project. The ownership of hardware shall be transferred to SMC/SSCDL on commissioning of hardware. However, SI will be fully responsible for maintaining these Assets during the contract period and will be fully accountable for the same.

Design Considerations

(i) The bidder shall propose hardware such that at any point in time during the contract period, the resource utilization does not go beyond the levels defined below during 9 A.M. to 7 P.M.
- the average CPU utilization should not exceed 70% for more than 15 minutes in a single stretch
- the average memory utilization should not exceed 70% for more than 15 minutes in a single stretch
- the average Disk utilization should not exceed 70% for more than 15 minutes in a single stretch
- In case of breach of above, the bidder will be required to optimize the solution else the additional hardware has to be provided by the successful bidder to ensure the performance within the indicated levels, at no further cost.

(ii) The ICCC Solution shall have following environments:
- Production environment at DC configured in High availability mode with no single point of failure in Active-Active Mode.
- Non-production environment consisting of Development/Quality/etc. at DC without HA

13.15 Operations and Maintenance for a period of 5 years

Success of the Project would also depend on how the entire Project is managed once the implementation is completed. From the System Integrator perspective too this is a critical phase since the quarterly payments are linked to the SLA's in the post implementation phases. SI shall

provide operations and maintenance services for the software, hardware and other IT and Non-IT infrastructure installed as part of project for a period of 5 years (post Go-Live). This would also include the support for various ICCC solution components that may be under warranty or AMC.

As part of the delivery of the solution it is expected that the SI shall provide Post Go Live Support ("PGLS") for the solution post Go-Live till completion of total contract period of five years. The Post Go Live Support ("PGLS") will start after completion of 3 months of Hypercare Support after Go Live. SI is responsible to provide operations and maintenance services for the software, hardware and other IT and Non-IT infrastructure installed as part of project for a period of 5 years (post Go-Live). Hypercare deliverable will include closing of all issues reported with Go-Live along with minor enhancements arising due to those defects.

13.15.1 Warranty, ATS and Annual Maintenance Services

1. SI shall provide warranty, ATS and maintain the IT infrastructure and software infrastructure for the entire solution provided to SMC/SSCDL. System Integrator shall provide the comprehensive manufacturer's warranty in respect of proper design, quality and workmanship of all hardware, equipment, accessories etc. covered by this bidding document. System Integrator must warrant all hardware, equipment, accessories, spare parts, software etc. procured and implemented as per this bidding document against any manufacturing defects during the warranty period.
2. SI shall provide comprehensive and on-site warranty (for 5 years or for 3 years followed by 2 years of comprehensive onsite AMC depending on the component) from the date of Go-Live for the infrastructure deployed on the project. SI need to have OEM support for these components and documentation in this regard need to be submitted to SSCDL/SMC on annual basis. Please refer TQ_2 for detailed information warranty and support for each component.
3. SI shall provide the performance warranty in respect of performance of the installed hardware and software to meet the performance requirements and service levels in the RFP.
4. SI is responsible for sizing and procuring the necessary hardware and software licenses as per the performance requirements provided in the RFP. During the warranty period SI shall replace or augment or procure higher-level new equipment or additional licenses/hardware at no additional cost to the SSCDL/SMC in case the procured hardware or software is not enough or is undersized to meet the service levels and the project requirements.
5. During the warranty period SI shall maintain the systems and repair/replace at the installed site, at no charge to SSCDL/SMC, all defective components that are brought to the SI's notice
6. The SI shall carry out Preventive Maintenance (PM) of all hardware and testing for virus, if any, and should maintain proper records at each site for such PM. The PM should be carried out at least once in six months as per checklist and for components agreed with SSCDL/SMC.
7. The SI shall carry out Corrective Maintenance for maintenance/troubleshooting of supplied hardware/software and support infrastructure problem including network (active/passive) equipment, security and rectification of the same. The SI shall also maintain complete documentation of problems, isolation, cause and rectification procedures for building knowledge base for the known problems in centralized repository, accessible to SSCDL/SMC team as well.

8. Software ATS: Comprehensive AMC/ATS services from the date of completion of Warranty on all the licensed software (IT product, associated software components, database, operating systems, etc.) provided by the System Integrator for entire duration of contract.
9. System Integrator shall, for this purpose, stock sufficient spares for rendering service and meeting SLA. SMC/SSCDL is not obliged to continue with the System Integrator providing AMC and may choose another System Integrator as AMC Partner.
10. The SI shall be required to repair the faulty component/equipment at the earliest or within the problem resolution time. However if any component/equipment gives continuous trouble, the SI shall replace the same with the new compatible component/equipment of the same or higher configuration without any additional cost to SMC/SSCDL.
11. No separate charges shall be paid for visit of engineers or attending to faults and repairs or supply of spare parts.
12. The SI must integrate hardware and software components along with rest of the IT Infrastructure at SMC to make the system integrated and fully functional.
13. Necessary installation/reinstallation, configuration and implementation support to be provided by SI.
14. The solution will be used to run business critical application and hence must be configured and tuned to give maximum output.
15. In case if breakdown/ maintenance work is required to be carried out during non-working days/ hours, the SI shall attend the task(s) during this period at no extra payment.
16. The System Integrator will supply all the installation material/ accessories/ consumables (e.g. screws, clamps, fasteners, ties anchors, supports, grounding strips, wires etc.) necessary for the installation and operation of the systems.
17. The System Integrator has to prepare and submit a delivery report including details of components supplied. The delivery report will be validated by the identified SMC/SSCDL authorized person.
18. None of the components and sub-components that are declared "End-of-sale" by the respective OEM in next two years as on date of submission of Bid shall be proposed.
19. The server and other system software should be regularly patched/ updated. Major patching / update which requires system downtime has to be informed well in advance and should be undertaken only after SMC/SSCDL's confirmation.
20. Necessary network connectivity LAN/WAN will be provided by SMC/SSCDL. However, the SI will be responsible for network configuration and management of the IT infrastructure provided under this project
21. During the implementation period and warranty period System Integrator shall perform all the functions as enunciated under this section at no extra cost to SMC/SSCDL.
22. Component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA). In case the selected System Integrator fails to meet the above standards of maintenance, there will be a penalty as specified in the SLA.
23. The selected System Integrator shall also maintain records of all maintenance of the system and shall maintain a logbook on-site that may be inspected by SMC/SSCDL at any time

24. The support for planning, optimization and tuning of hardware and software after commissioning, whenever needed during Operation period/ Warranty / AMC shall be provided by System Integrator at no extra cost to SMC/SSCDL.
25. SI shall monitor warranties to check adherence to preventive and repair maintenance terms and conditions.
26. Any component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA).
27. The SI shall ensure that the warranty complies with the agreed technical standards, security requirements, operating procedures, and recovery procedures.
    - The SI shall have to stock and provide adequate onsite and offsite spare parts and spare component to ensure that the uptime commitment as per SLA is met.
    - Any component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA).
    - The SI shall introduce a comprehensive Assets Management process & appropriate tool to manage the entire lifecycle of every component of ICCC System

13.15.2 Systems Administration Services

System Integrator shall ensure that IT Environment for ICCC operates smoothly, securely and consistently. System Integrator shall ensure following activities for SMC/SSCDL:

1. Configuration of server, storage, networking & security component parameters, operating systems administration and tuning.
2. Adequate hardening of the operating systems of the servers, storage & network equipment and security equipment to prevent known and unknown attacks.
3. Operating system administration, including but not limited to management of users, processes, resource contention, preventive maintenance and management of upgrades including migration to higher versions and patches to ensure that the system is properly updated.
4. Re-installation in the event of system crash/failures.
5. Maintenance of a log of the performance monitoring of servers including but not limited to monitoring CPU, disk space, memory utilization, I/O utilization, etc.
6. Periodic health check of the systems, troubleshooting problems, analyzing and implementing rectification measures.
7. Troubleshooting issues in the infrastructure, network and IT application to determine the areas where fixes are required and ensuring resolution of the same.
8. Identification, diagnosis and resolution of problem areas pertaining to the DC/DR site infrastructure and application and maintenance of assured SLA levels.
9. IT assets performance monitoring, fine-tuning, optimization & Problem Resolution
10. Configuring and monitoring of regular backups of relevant database and application so as to ensure minimum loss and ensure prompt restoration of the same as and when required.
11. Installation, configuration, monitoring and management of the storage system in accordance to the application requirement and uptime and KPI requirements.

12. Monitoring, maintenance and tuning of the databases to meet ensure optimum performance maximize efficiency and minimize outages, as necessary and proactively reviewing database logs and alert logs and taking appropriate actions.
13. Sever and application hardening to prevent attack from any known and unknown attacks. Ensuring that patches / workarounds for identified vulnerabilities are patched / blocked immediately.

13.15.3 Provision for Onsite Support

SI shall deploy Manpower during implementation and O&M phases. The deployed resource shall report to SSCDL/SMC Project In-charge. The support team must be backed by off-site support as necessary. The Bidder's PGLS team shall be responsible for the efficient functioning of the system and continued delivery of stable systems, development, and operational support. It is expected that out of business hours support will be provided as needed.

Minimum Required onsite support: The bidder is required to provide the dedicated onsite team as per the below mentioned table during the support. Necessary backend support must be extended to the onsite team so as to achieve the SLAs and KPIs defined in RFP. Project Manager will be the SPOC for SMC/SSCDL, who intern will coordinate with onsite and offsite team members.

The onsite team will also be engaged in development and integration of new use cases upto the extent of 6 user cases per quarter. Necessary backend support must be imparted by SI to the onsite team so that apart from maintaining and managing existing setup the team is able to deliver new development/integration activities. Requirement for additional use case integration over and above will be considered as change request.

Following are the minimum resources required to be deployed in the Project, however SI may deploy additional resources based on the need of the Project and to meet the defined SLAs in this RFP:

#	Resource Type	Minimum Quantity	Minimum Deployment during Operation & Maintenance Phase
1.	Project Manager cum ICCC Expert	1	100%
2.	ICCC Application Developer	2	100%
3.	IT Infrastructure Support Engineers	1	100%

#	Qualification & Experience of the Onsite Resource
1	**Project Manager cum ICCC Expert** • **Educational Qualification:** BE / B. Tech / MCA • **Work experience:** Minimum 8 years of experience in ICT implementation Projects and must have expertise in the proposed ICCC Solution • **Roles & Responsibility:** S/he will be the SPOC for SMC/SSCDL and will be responsible to ensure service deliveries during Post-Go-Live are as per the RFP requirements and at par to the KPIs and SLAs defined. S/he will interact with the different OEMs and back office team of SI in this regard. The Project Manager must be proficient with the ICCC solution offered and must possess in-depth knowledge of

#	Qualification & Experience of the Onsite Resource
	the solution. S/he must be in a position to identify the root cause of problem/bugs if any with the ICCC solution and get it resolved. S/he must possess expertise in creation and configuration of the SOPs. S/he must be competent enough to manage, maintain, augment and enhance the deployed ICCC solution. S/he must coordinate with all the stakeholders and ensure smooth operation of the project. S/he will also be responsible to ensure the overall health of the ICCC infrastructure.
2	**ICC Application Developer** • **Educational Qualification:** BE / B. Tech / MCA • **Work experience:** Minimum 5 years of experience in software implementation Projects • **Roles & Responsibility:** The Application Developer will be responsible to carry out necessary changes in the application, provide application level support to the users, and coordinate with users for easy and early adaptation of the system. S/he shall be well versed and experienced to handle above stated activities. S/he must be in a position to ascertain and carryout the necessary activities w.r.t. any minor or major changes in the existing domain system integrated or use cases created. S/he will capture the requirements and carry out necessary developments on her/his own. The Application Developer will also be required to carry out necessary activities for integration of new domain systems / use cases. S/he will keep the Project Manager informed about the activities. S/he will interact the OEM/back office team either directly or through Project Manager for necessary changes/developments/support issues for resolving problems if any.
3	**IT Infrastructure Support Engineers** • **Educational Qualification:** BE / B. Tech / MCA • **Work experience:** Minimum 3 years of experience in IT infrastructure management • **Roles & Responsibility:** S/he will be responsible to responsible to monitor the health of the ICCC IT infrastructure. S/he will be responsible to ensure preventive and breakdown maintenance services as per the RFP requirements. S/he will resolve any hardware/network related issues at DC level or else within ICCC. S/he will keep the Project Manager informed about the activities. S/he will interact the OEM/back office team either directly or through Project Manager for necessary repair/replacement of hardware or support issues for resolving problems if any.

13.15.4 Application Support and Maintenance Support

Application support includes, but not limited to, production monitoring, troubleshooting and addressing the functionality, availability and performance issues, implementing the system change requests etc. The SI shall keep the application software in good working order; perform changes and upgrades to applications as requested by the SSCDL/SMC team. All tickets related to any issue/complaint/observation about the system shall be maintained as per ITIL standard, in this regard bidder may install on premise solution or propose could base solution (no extra payment will be made for this solution). Key activities to be performed by SI in the application support phase are as follows:

1. **Compliance to SLA:** SI shall ensure compliance to SLAs as indicated in the RFP and any upgrades/major changes to the software shall be accordingly planned by SI ensuring the SLA requirements.
2. **Annual Technology Support:** The SI shall be responsible for arranging for annual technology support for the OEM products to SSCDL/SMC provided by respective OEMs during the entire project duration
3. **Application Software Maintenance:**
    - SI shall provide unlimited support through onsite team or offsite team as and when required during the contract period.
    - SI shall address all the errors/bugs/gaps in the functionality in the solution implemented by the SI at no additional cost during the O&M phase
    - All patches and upgrades from OEMs shall be implemented by the SI ensuring customization done in the solution as per the SSCDL/SMC requirements are unaffected. Technical upgrade of the installation to the new version, as and when required, shall be done by the SI. Any version upgrade of the software / tool / appliance by SI to be done after taking prior approval of SSCDL/SMC and after submitting impact assessment of such upgrade.
    - Any changes/upgrades to the software performed during the support phase shall subject to the comprehensive and integrated testing by the SI to ensure that the changes implemented in the system meets the specified requirements and doesn't impact any other function of the system. Release management for application software will also require SSCDL/SMC approval. A detailed process in this regard will be finalized by SI in consultation with SSCDL/SMC.
    - Issue log for the errors and bugs identified in the solution and any change done in the solution shall be maintained by the SI and periodically submitted to the SSCDL/SMC team.
    - SI, at least on a monthly basis, will inform SSCDL/SMC about any new updates/upgrades available for all software components of the solution along with a detailed action report. In case of critical security patches/alerts, the SI shall inform about the same immediately along with his recommendations. The report shall contain SI's recommendations on update/upgrade, benefits, impact analysis etc. The SI shall need to execute updates/upgrades though formal change management process and update all documentations and Knowledge databases etc. All such updates and upgrades will be carried out free of cost.

4. **Problem Identification and Resolution:**
    - SI shall identify and resolve all the application problems in the identified solution (e.g. system malfunctions, performance problems and data corruption etc.).
    - Monthly report on problem identified and resolved would be submitted to SSCDL/SMC team along with the recommended resolution.

5. **Change and Version Control**: All planned or emergency changes to any component of the system shall be through the approved Change Management process. For any change, SI shall ensure:

- Detailed impact analysis
- Change plan with Roll back plans
- Appropriate communication on change required has taken place
- Proper approvals have been received
- Schedules have been adjusted to minimize impact on the production environment
- All associated documentations are updated post stabilization of the change
- Version control maintained for software changes
- The SI shall define the Software Change Management and Version control process. For any changes to the solution, SI has to prepare detailed documentation including proposed changes, impact to the system in terms of functional outcomes/additional features added to the system etc. SI shall ensure that software and hardware version control is done for entire duration of SI's contract.

6. **Maintain Configuration Information:** SI shall maintain version control and configuration information for application software and any system documentation.

7. **Maintain System Documents:** SI shall maintain at least the following minimum documents with respect to the ICCC System:

   - For application support SI shall keep dedicated software support team to be based at SI location that will single point of contact for resolution of all application related issues. This team will receive all the application related tickets/incidents and will resolve them. In its technical proposal SI need to provide the proposed team structure of application support including number of team members proposed to be deployed along with roles and skills of each such member. Application support team shall be employees of SI.
   - Any software changes required due to problems/bugs in the developed software/application will not be considered under change control. The SI will have to modify the software/application free of cost. This may lead to enhancements/customizations and the same needs to be implemented by the SI at no extra cost.
   - Any additional changes required would follow the Change Control Procedure. SSCDL/SMC may engage an independent agency to validate the estimates submitted by the SI. The inputs of such an agency would be taken as the final estimate for efforts required. SI to propose the cost of such changes in terms of man month rate basis and in terms of Function point/Work Breakdown Structure (WBS) basis in the proposal

13.15.5 Compliance to SLA

1. SI shall ensure compliance to uptime and performance requirements of project solution as indicated in the SLA table of RFP and any upgrades/major changes to the ICCC System shall be accordingly planned by SI for ensuring the SLA requirements.
2. SI shall be responsible for measurement of the SLAs at the ICCC System level as well as at the user level on a periodic basis.
3. Reports for SLA measurement must be produced SSCDL/SMC officials as per the project requirements.

13.16 Project Management and Governance

13.16.1 Project Management Office (PMO)

A Project Management office will be set up during the start of the project. The PMO will, at the minimum, include a designated full time Project Manager from SI. It will also include key persons from other relevant stakeholders including members of SSCDL/SMC and other officials/representatives by invitation. The operational aspects of the PMO need to be handled by the SI including maintaining weekly statuses, minutes of the meetings, weekly/monthly/project plans, etc. PMO will meet formally on a weekly basis covering, at a minimum, the following agenda items:

- Project Progress
- Delays, if any – Reasons thereof and ways to make-up lost time
- Issues and concerns
- Performance and SLA compliance reports;
- Unresolved and escalated issues;
- Project risks and their proposed mitigation plan
- Discussion on submitted deliverable
- Timelines and anticipated delay in deliverable if any
- Any other issues that either party wishes to add to the agenda.

During the development and implementation phase, there may be a need for more frequent meetings and the agenda would also include:

- Module development status
- Testing results
- IT infrastructure procurement and deployment status
- Status of setting up/procuring of the Helpdesk, DC hosting
- Any other issues that either party wishes to add to the agenda.

Bidder shall recommend PMO structure for the project implementation phase and operations and maintenance phase.

13.16.2 Steering Committee

The Steering Committee will consist of senior stakeholders from SSCDL/SMC, its nominated agencies and SI. SI will nominate its Smart City vertical head to be a part of the Project Steering Committee. The SI shall participate in monthly Steering Committee meetings and update Steering Committee on Project progress, Risk parameters (if any), Resource deployment and plan, immediate tasks, and any obstacles in project. The Steering committee meeting will be a forum for seeking and getting approval for project decisions on major changes etc. All relevant records of proceedings of Steering Committee should be maintained, updated, tracked and shared with the Steering Committee and Project Management Office by SI. During the development and implementation phase of the project, it is expected that there will be at least fortnightly Steering Committee meetings. During the O&M phase, the meetings will be held at least once a quarter. Other than the planned meetings, in exceptional cases, SSCDL/SMC may call for a Steering Committee meeting with prior notice to the SI.

13.16.3 Project Monitoring and Reporting

The SI shall circulate written progress reports at agreed intervals to SSCDL /SMC and other stakeholders. Project status report shall include Progress against the Project Management Plan, status of all risks and issues, exceptions and issues along with recommended resolution etc.
Other than the planned meetings, in exceptional cases, project status meeting may be called with prior notice to the Bidder. SSCDL/SMC reserves the right to ask the bidder for the project review reports other than the standard weekly review reports.

13.16.4 Risk and Issue management

The SI shall develop a Risk Management Plan and shall identify, analyse and evaluate the project risks, and shall develop cost effective strategies and action plans to mitigate those risks.
The SI shall carry out a Risk Assessment and document the Risk profile of SSCDL/SMC based on the risk appetite and shall prepare and share the SSCDL/SMC Enterprise Risk Register. The SI shall develop an issues management procedure to identify, track, and resolve all issues confronting the project. The risk management plan and issue management procedure shall be done in consultation with SSCDL/SMC.
The SI shall monitor, report, and update the project risk profile. The risks should be discussed with SSCDL/SMC and a mitigation plan be identified during the project review/status meetings. The Risk and Issue management should form an agenda for the Project Steering Committee meetings as and when required.

13.16.5 Planning and Scheduling

The SI will prepare a detailed schedule and plan for the entire project covering all tasks and sub tasks required for successful execution of the project. The SI has to get the plan approved from SSCDL/SMC at the start of the project and it should be updated every week to ensure tracking of the progress of the project.

The project plan should include the following:

- The project break up into logical phases and sub-phases;
- Activities making up the sub-phases and phases;
- Components in each phase with milestones;
- The milestone dates are decided by SSCDL/SMC in this RFP. SI cannot change any of the milestone completion dates. SI can only propose the internal task deadlines while keeping the overall end dates the same. SI may suggest improvement in project dates without changing the end dates of each activity.
- Key milestones and deliverables along with their dates including those related to delivery and installation of hardware and software;
- Start date and end date for each activity;
- The dependencies among activities;
- Resources to be assigned to each activity;
- Dependency on SSCDL/SMC

13.17 Guiding Architecture Principle

The IT architecture principles defined in this section are the underlying general rules and guidelines that will drive the subsequent development, use and maintenance of architectural standards, frameworks and future state target architecture.

SSCDL/SMC system will be built on the following core principles:

1. **Platform Approach**-It is critical that a platform based approach is taken for any large scale application development, to ensure adequate focus and resources on issues related to scalability, security and data management. Building an application platform with reusable components or frameworks across the application suite provides a mechanism to abstract all necessary common features into a single layer. Hence the SSCDL/SMC system is envisaged as a faceless system with 100% API driven architecture at the core of it. SSCDL/SMC portal will be one such application on top of these APIs, rather than being fused into the platform as a monolithic system.
2. **Open APIs designed** to be used form the core design mechanism to ensure openness, multi-user ecosystem, specific vendor/system independence, and most importantly providing tax payers and other ecosystem players with choice of using innovative applications on various devices (mobile, tablet, etc.) that are built on top of these APIs.
3. **Openness** - Adoption of open API, open standards and wherever prudent open source products are of paramount importance for the system. This will ensure the system to be lightweight, scalable and secure. Openness comes from use of open standards and creating vendor neutral APIs and interfaces for all components. All the APIs will be stateless. Data access must be always through APIs, no application will access data directly from the storage layer or data access layer. For every internal data access also (access between various modules) there will be APIs and no direct access will be there.
4. **Data as an enterprise asset-** Information is a high value asset to be leveraged across the organization to improve performance and decision making. Accurate information would ensure effective decision making and improved performance

Effective and careful data management is of high importance and top priority should be placed on ensuring where data resides, that its accuracy can be relied upon, and it can obtained when and where needed.

5. **Performance-** A best of breed solution using the leading technologies of the domain should be proposed in the solution ensuring the highest levels of performance. It will also ensure that the performance of various modules should be independent of each other to enhance the overall performance and also in case of disaster, performance of one module should not impact the performance other modules.
   The solution should be designed in a manner that the following can be achieved:

- Modular design to distribute the appropriate system functions on web and app server
- Increase in-memory Operations (use static operations)
- Reduce number of I/O operations and N/w calls using selective caching
- Dedicated schemas for each function making them independent and avoiding delays due to other function accessing the same schema.
- Solution should provide measurable and acceptable performance requirements for users, for different connectivity bandwidths.
- The solution should provide optimal and high performance Portal Solution satisfying response time for slow Internet connections and different browsers.

6. **Scalability -** The component in the architecture will be capable of being scaled up to more user requests or handling more no. of input resources in various modules. Even inclusion of additional application functionalities can be catered to by upgrading the software editions with minimal effort. Forward and backward integration (in terms of functions - components, applications, devices, geographical coverage and volume) with all smart city components across the 7+1 layers defined in the overall solution architecture. Such forward or backward integration could take place at any of the layers defined in the over architecture viz. sensor and actuator layer, network layer, data center layer, application layer, integration layer, service delivery layer, command center layer, visualisation layer and security layer. The design of the system to consider future proofing the systems for volume handling requirements
   - The application functions to be divided logically and developed as Modular solution.
   - The system should be able to scale horizontally & vertically.
   - ***Data Volume-*** Ability to support at least 20 % projected volume growth (year on year) in content post system implementation & content migration.
   - ***Functionality*** – Ability to extend functionality of the solution without significant impact to the existing functional components and infrastructure.
   - **Loose coupling through layered modular design and messaging** - The architecture would promote modular design and layered approach with clear division of responsibility and separation of concerns at the data storage, service and integration layer in order to achieve desired interoperability without any affinity to platforms, programming languages and network technologies. The architecture has to be scalable, maintainable and flexible for modular expansion as more citizen and business services are provided through the Project. Each of the logical layers would be loosely coupled with its adjacent layers
   - **Data partitioning and parallel processing** - Project functionality naturally lends itself for massive parallel and distributed system. For linear scaling, it is essential that entire system is architected to work in parallel within and across machines with appropriate data and system partitioning. Choice of appropriate data sources such as RDBMS, Hadoop, NoSQL data stores, distributed file systems; etc. must be made to ensure there is absolutely no “single point of bottleneck” in the

entire system including at the database and system level to scale linearly using commodity hardware.

- **Horizontal scale for compute, Network and storage** – Project architecture must be such that all components including compute, network and storage must scale horizontally to ensure that additional resources (compute, storage, network etc.) can be added as and when needed to achieve required scale.

7. **Security -** The security services will cover the user profile management, authentication and authorization aspects of security control. This service run across all the layers since service components from different layers will interact with the security components. All public contents should be made available to all users without authentication. The service will authenticate users and allows access to other features of the envisaged application for which the user is entitled to.
   The system should be designed to provide the appropriate security levels commiserate with the domain of operation. Also the system will ensure data confidentiality and data integrity. The application system should have the following
   - A secure solution should be provided at the hardware infrastructure level, software level, and access level.
   - Authentication, Authorization & Access Control: 3 factors (User ID & Password, Biometric, and Digital Signature) security mechanisms should be implemented to enable secure login and authorized access to portal information and services.
   - Encryption Confidentiality of sensitive information and data of users and portal information should be ensured.
   - Appropriate mechanisms, protocols, and algorithms necessary to protect sensitive and confirmation data and information both during communication and storage should be implemented.
   - Data security policies and standards to be developed and adopted across the Smart City departments and systems
   - In order to adequately provide access to secured information, security needs must be identified and developed at the data level. Database design must consider and incorporate data integrity requirements.
   - Role based access for all the stake holders envisaged to access and use the system
   - Appropriate authentication mechanism adhering to industry good practice of Password Policies etc.
   - Ability to adopt other authentication mechanism such as Electronic Signature Certificates
   - Authorization validity to be ensured for the users providing the Data to the system. Data should be accepted only from the entity authorized
   - Data should be visible only to the authorized entity
   - Audit trails and Audit logging mechanism to be built in the system to ensure that user action can be established and can investigated if any can be aided(e.g. Logging of IP Address etc.)
   - Data alterations etc. through unauthorized channel should be prevented.

- Industry good practice for coding of application so as to ensure sustenance to the Application Vulnerability Assessment

System must implement various measures to achieve this including mechanisms to ensure security of procurement data, spanning from strong end-to-end encryption of sensitive data, use of strong PKI national standards encryption, use of HSM (Hardware Security Module) appliances, physical security, access control, network security, stringent audit mechanism, 24x7 monitoring, and measures such as data partitioning and data encryption.

Activities such as anti-spoofing (no one should be able to masquerade for inappropriate access), anti-sniffing (no one should be able get data and interpret it), anti-tampering (no one should be able to put/change data which was not meant to be put/changed) should be taken care for data in transit, as well as data at rest, from internal and external threats.

8. **User Interface -** The architecture and application solutions to be designed should promote simplicity and ease of use to the end users while still meeting business requirements. It should provide a simpler and more cost-effective solution. Reduces development time and makes the solution easier to maintain when changes in requirements occur.

   This will be accomplished by the implementation of rich User Interfaces along with its integration with the DMS, Relational Data Store, Messaging and other external applications.

   - Efficient and layout design are the key considerations that enhance usability which should be factored in while designing the application. Standard and consistent usability criteria must be defined. An intuitive, user friendly, well-articulated navigation method for the applications greatly enhances the usability of the application.
   - Effective information dissemination
   - Enhanced functionalities including personalized delivery of content, collaboration and enriching GUI features.
   - Mobile Application Platform
     - Applications and services including all appropriate channels such as SMS/USSD/IVRS and development of corresponding mobile applications to the applications and services leveraging the Mobile Service Delivery Gateway (MSDG) and Mobile App Store.
     - Application platform should support the following smart phone mobile OS (Android 4.0 and above, iOS 4, 5 and above, Windows Phone OS 8.0 and above, Mobile Web App)
     - Support the target packaging components like (Mobile Website, Hybrid App, Native App, Web App and Application Development, Eclipse tooling platforms)
     - Support the ability to write code once and deploy on multiple mobile operating systems
     - Support integration with native device API
     - Support utilization of all native device features
     - Support development of applications in a common programing language
     - Support integration with mobile vendor SDKs for app development and testing

- Support HTML5, CSS3, JS features for smartphone devices
- Support common protocol adapters for connection to back office systems (i.e. HTTP, HTTPS, SOAP, XML for format)
- Support JSON to XML or provide XHTML message transformations
- Support multi-lingual and language internalization
- Support encrypted messaging between server and client components

9. **Reliability-** This is a very crucial system and data are of high sensitivity, the data transfer and data management should be reliable to keep the confidence of the stakeholders. The system should have appropriate measures to ensure processing reliability for the data received or accessed through the application.
   It may be necessary to mainly ensure the following
   - Prevent processing of duplicate incoming files/data
   - Unauthorized alteration to the Data uploaded in the SSCDL/SMC system should be prevented
   - Ensure minimum data loss(expected zero data loss)

10. **Manageability -** It is essential that the application architecture handles different failures properly; be it a hardware failure, network outage, or software crashes. The system must be resilient to failures and have the ability to restart, and make human intervention minimal.
    All layers of the system such as application, infrastructure must be managed through automation and proactive alerting rather than using 100's of people manually managing.
    The entire application must be architected in such a way that every component of the system is monitored in a non-intrusive fashion (without affecting the performance or functionality of that component) and business metrics are published in a near real-time fashion. This allows data centre operators to be alerted proactively in the event of system issues and highlight these issues on a Network Operations Centre (NoC) at a granular level. The solution should be envisaged to utilize various tools and technologies for management and monitoring services. There should be management and monitoring tools to maintain the SLAs.

11. **Availability -** The solution design and deployment architecture will ensure that the application can be deployed in a centralized environment offering system High Availability and failover.
    The solution should meet the following availability requirements
    - Load Balanced across two or more Web Server avoiding single point of failure
    - Deployment of multiple application instances should be possible
    - Distributed or load balanced implementation of application to ensure that availability of services is not compromised at any failure instance.

12. **SLA driven solution -** Data from connected smart devices to be readily available (real-time), aggregated, classified and stored, so as not to delay the business processes

of monitoring and decision making, and will enable appropriate timely sharing across the Smart City organization.

Readily available and consumed device data will facilitate timely access of analytics reports at every level and department of the Smart City and provide timely analysis of data as well as monitoring of KPIs through SLAs resulting in effective service delivery and improved decision making.

13. **Reconstruction of truth -** System should not allow database/system administrators to make any changes to data. It should ensure that the data and file (data at rest) that is kept in the systems has tamper resistance capacity and source of truth (original data of invoices and final returns) could be used to reconstruct derived data such as ledgers and system generated returns. System should be able to detect any data tampering through matching of hash value and should be able to reconstruct the truth.
    - Services/solutions should be flexible and extensible to respond to, accommodate and adapt to changing business needs and unanticipated requirements easily. Consolidate and simplify technology applications wherever possible to minimize complexity. Ongoing application, database and server consolidation may be required.
    - Software should use meta-data to configure itself (using declarations rather than coding).
    - Avoid proprietary solutions and technologies if possible. Consider adhering to latest industry best practices and technical standards.
    - The infrastructure should support an environment that allows applications to start small, grow quickly, and operate inexpensively. An adaptable infrastructure provides the capability to add to the current infrastructure with minimum inconvenience to the user.
    - The IT architecture should be designed to support the overall SLA requirements around scalability, availability and performance.
    - Each application should be performance tested to identify performance issues. The potential performance bottlenecks need to be identified and cost-effective paths for performance improvements should be provided for these identified problem areas.
    - The system infrastructure should be architected considering failover requirements and should ensure that a single server or network link failure does not bring down the entire system.
    - The system should be reliable handling every request and yield a response. It should handle error and exception conditions effectively.

14. **Integration Architecture -** This section recommends the proposed integration architecture aligning with the overarching architectural principles.The following are the integration specifications for the various integration scenarios –

    Real-time integration

All the Smart City applications will be deployed in the Data Centre while any external application of the Smart City ecosystem will reside in outside premises.

The need for a Service Oriented Architecture (SOA) is felt that will facilitate SSCDL/SMC in defining an enterprise integration platform. An SOA platform will help in data exchange across applications in real-time mode (both synchronous and asynchronous), promote loose coupling with ease of maintenance and change, facilitate rapid composition of complex services, achieve scalability through modularity, and improved business visibility.

SOA is an architectural style that allows the integration of heterogeneous applications & users into flexible service delivery architecture. Discrete business functions contained in enterprise applications could be organized as layers of interoperable, standards-based shared "services" that can be combined, reused, discovered and leveraged by other applications and processes.

The following are the various integration modes and techniques that could be leveraged -

- SOAP web service based interfacing technique will be leveraged as the real-time point to point synchronous integration mode with external or third party systems. The following integration points could be considered for SOAP web service based interfacing -
    - Payment gateway of the authorized banks to enable authorized users make financial transactions for the Smart City services availed by them. This should support a unified interface to integrate with all Payment Service Providers using web services over secured protocols.
    - SMS application, acting as the SMS Gateway, will make use of APIs for SMS communication to GSM network using the GSM modem, which can be both event-driven as well as time-driven. The API will be exposed to initiate the broadcasting or alert notification.
    - Social Media Apps and NoSQL data stores to exchange photos, videos and message feeds, based on interactions with Citizens and Business as well as comments/posts to inform stakeholders
    - IVR/Customer Support solution with ERP and Transactional Data Repository to exchange citizen and business demographic, registration and payment data as well as transactional data related to citizen services and municipal operations.
- Message based interfacing technique will be leveraged for real-time asynchronous integration mode. The following integration points could be considered for message based interfacing -
    - Central LDAP with ERP to synchronize member and employee user registration data
    - Payment solution and ERP to exchange payment data for tracking of beneficiary's payment transactions against different services (citizen, workers, transporter, vendor), master data (employee, vendor/supplier, location, facilities, price table)
    - Employee attendance data with ERP (HR Module) to capture data pertaining to employee location and attendance
    - Departmental applications with ERP (Asset Management module) to exchange data for procurement and maintenance of any assets or infrastructure items for each department.

- Municipal operations application with ERP (Material Management module) to capture materials related transaction and inventory data for public works
- Other government applications with Smart City application to exchange data for government procurement, public health schemes, welfare schemes, citizen health, etc.

- RESTful API service based interfacing technique will be leveraged for the following integration areas-
  - Access and use of various services provided by the different departments for citizens and business community will be done through a RESTful, stateless API layer.
  - Access and use of various internal functions related to operations and administration of Smart City for departmental and SSCDL/SMC employees will be done through a RESTful, stateless API layer
- Data integration in batch mode will be through ETL. The following integration points could be considered for ETL based data integration -
  - Initial data migration to cleanse, validate and load the data extracted from source systems into target tables
  - Data load from all the individual transactional systems like ERP, Grievance Redressal to central enterprise data warehouse solution for aggregation, mining, dashboard reporting and analytics.

Process Integration layer of the SSCDL/SMC solution will automate complex business processes or provide unified access to information that is scattered across many systems. Process Integration will provide a clean separation between the definition of the process in the process model, the execution of the process in the process manager, and the implementation of the individual functions in the applications. This separation will allow the application functions to be reused in many different processes.

An enterprise service bus (ESB) is a software architecture model used for designing and implementing the interaction and communication between mutually interacting software applications in Service Oriented Architecture. As software architecture model for distributed computing it is a variant of the more general client server software architecture model and promotes strictly asynchronous message oriented design for communication and interaction between applications. Its primary use is in Enterprise Application Integration of heterogeneous and complex landscapes. Following are the requirement for an ESB system:

- The solution should support static/deterministic routing, content-based routing, rules-based routing, and policy-based routing, as applicable in various business cases.
- The solution should have capabilities to receive input message in heterogeneous formats from various different systems, interpret those messages, process and transform those messages to generate output and feed them to various different clients as per formats applicable.
  - The solution should have features to communicate across different services, process them and expose as single aggregate service to facilitate business functionality
  - ESB should support SOA standards such as XML, XSLT, BPEL, web services standards and messaging standards.

- ESB should support all industry standards interfaces for interoperability between different systems

There are four integration gateways envisaged as part of the solution design. The key requirements with respect to each of these are mentioned below:

SMS Gateway: SMS services are envisaged to be made available as part of the solution design. The service provider may integrate the solution with SMS gateway available at SMC/SSCDL, and use the services available through it, or deploy its own SMS Gateway services at no extra charge to SMC, but it is a mandatory requirement that all the SMS based services (alerts and notifications) should be available as part of the solution. Following are some of the key requirements for the SMS services through the solution:

- Should contain required details/information and targeted to the applicant or designated officers of tax departments and other stakeholders and users as per prevailing TRAI norms
- Facilitate access through access codes for different types of services
- Support automated alerts that allows to set up triggers that will automatically send out reminders
- Provide provision for International SMS
- Provide provision to receive messages directly from users
- Provide provision for personalized priority messages
- Resend the SMS in case of failure of the message
- Provide messaging templates

Email Services: Email services are envisaged to be made available as part of the solution design to send alerts/intimations/automated messages to registered email ids, based on preferences set up/opted by individual users. An authenticated SMTP mail service (also known as a SMTP relay or smart host) is envisaged to be integrated with the solution for sending mail from the solution, and delivered to intended inbox. Support antispam features.

Payment Gateway: The solution is envisaged to have integration with payment gateways, to enable authorized Users make financial transactions, as per rights and privileges provided to him/her. The service provider is required to make the provisions for integration with such third party gateways and provide payment services, as per requirement of the SSCDL/SMC. Some of the key features of payment gateway are mentioned below:

- Should support secure integration with Payment Service Providers
- Should support a unified interface to integrate with all Payment Service Providers
- Should support integration with Payment Service Providers using web services and over HTTP/S protocol
- Should manage messages exchange between UI and payment service providers
- Should support beneficiary's payment transactions tracking against various services
- Should support bank accounts reconciliation

- Should provide logs for all transactions performed through the Payment Gateway for future financial dispute resolution that might arise between entities and either beneficiaries or Payment Service Providers
- Should maintain and keep transactions logs for time period required and specified by the financial regulations followed in country
- Should support redundant Payment Discovery
- Should submit Periodic Reconciliation Report to government entities
- Should support transaction reports to monitor and track payments
- Should support real-time online credit card authorization for merchants
- Should support compliance with emerging trends and multiple payment options such debit card, credit card, cash cards and other payment gateways
- Should provide fraud screening features
- Should support browser based remote administration
- Should support multicurrency processing and settlement directly to merchant account
- Should support processing of one-time or recurring transactions using tokenization
- Should support real time integration with SMS and emails

IVR Services: IVR services are envisaged as part of Call Centre facility, which will be integrated with the solution, to provide information and services to the people who would contact the Call Centre: Some of the key features of the IVR services are mentioned below:

- Should provide multi-lingual content support
- Should facilitate access through access codes for different types of services
- Should support Web Service Integration
- Should support Dual Tone Multi Frequency (DTMF) using telephone touchpad - in-band and out-of-band
- Should support for Voice Extensible Markup Language (VoiceXML)
- Should support speech recognition that interprets spoken words as texts (Advanced Speech Recognition).
- Should support playing of pre-recorded sounds
- Should support redirection to human assistance, as per defined rules
- Should be able to generate Data Records – (CDRs) and have exporting capabilities to other systems
- Should provide provision for voice mailbox and voice recognition

There are multiple ways of integration of the solution with other systems is envisaged. These may be through Web Services, Message Queuing, File based or API based. The integration and data sharing mechanism may be either in Batch Mode or Needs basis (synchronous or asynchronous). Some of the key requirements of the interface/integration are mentioned below:

- Interface Definition
- Interface Owner
- Interface Type
- Interface Format

- Frequency
- Source System
- API/Service/Store Procedure
- Entitlement Service
- Consuming System
- Interface Layout (or) Schema

- Should have provision for exceptional scenarios
- Should have syntax details such as data type, length, mandatory/option, default values, range values etc.
- Error code should be defined for every validation or business rule
- Inputs and outputs should be defined
- Should be backward compatible to earlier datasets
- Data exchange should provide transactional assurance
- Response time and performance characteristics should be defined for data exchange
- The failover scenarios should be identified
- Data exchange should be auditable

15. **Infrastructure Security -** The following focused initiatives to discover and remedy security vulnerabilities of the IT systems of SSCDL/SMC Smart City should be considered to proactively prevent percolation of any threat vectors -
    - Deploy anti-virus software to all workstations and servers to reduce the likelihood of security threats;
    - Deploy perimeter security technologies e.g. enterprise firewalls to reduce the likelihood of any security threat;
    - Deploy web content filtering solutions to prevent threats from compromised websites to help identify and block potentially risky web pages;
    - Install enterprise-level e-mail anti-security software to reduce vulnerability to phishing and other e-mail security spams. This would check both incoming and outgoing messages to ensure that spam messages are not being transmitted if a system becomes compromised.
    - Perform periodic scanning of the network to identify system level vulnerabilities
    - Establish processes for viewing logs and alerts which are critical to identify and track threats and compromises to the environment. The granularity and level of logging must be configured to meet the security management requirements.
    - Deploy technology to actively monitor and manage perimeter and internal information security.
    - Deploy network Intrusion Detection System (IDS) on the perimeter and key points of the network and host IDS to critical systems. Establish process to tune, update, and monitor IDS information.
    - In case of cloud deployment, cloud services can be disrupted by DDoS attacks or misconfiguration errors which have the potential to cascade across the cloud and disrupt the network, systems and storage hosting the cloud application.

- Deploy security automation techniques like automatic provisioning of firewall policies, privileged accounts, DNS, application identity etc.

14 Annexure II- Functional requirements of ICCC Application

14.1 Objectives

1. The vision of the ICCC is to have an integrated view of all the smart initiatives undertaken by SMC/SSCDL/ Other City based Organisations, with the focus to serve as a decision support engine for city administrators in day to day operations as well as during exigency situations. This dynamic response to situations, both pre-active and re-active will truly make the city operations "SMART".
2. ICCC involves leveraging on the information provided by various departments and providing a comprehensive response mechanism for the day-to-day challenges across the city. ICCC shall be a fully integrated, web-based solution that provides seamless incident – response management, collaboration and geo-spatial display.
3. ICCC 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 smart city ICCC shall be accessible by operators and concerned authorized entities with necessary authentication credentials.
4. Various smart elements should be able to use the data and intelligence gathered from operations of other elements so that civic services are delivered lot more efficiently and in an informed fashion.
5. The licenses to be procured for ICCC Application should be perpetual and enterprise level with no limit in terms of number of uses cases/domains/IOT devices/integration interfaces.

14.2 Functional and Technical Specification for CCC Software

#	Functions	Minimum Specifications	Bidder Compliance
1.	Solution & Platform	The Command & Control solution should be Commercial-of-the-shelf (COTS) product.	
2.		The Command & Control solution should comply with industry open standards.	
3.		Must have built-in fault tolerance, load balancing and high availability.	
4.		Proposed solution shall be available with complete transparency including operation manuals, help documents and source code for customization.	
5.		CCC Solution (consisting of Application, Database and any other component) must not be restricted by the license terms of the OEM from scaling out on sensors or number of cores or processors or servers or no. of domain systems or use cases, etc. during future expansion.	

#	Functions	Minimum Specifications	Bidder Compliance
6.		CCC Solution must provide a comprehensive API (Application Program Interface) or SDK (Software Development's Kit) to allow interfacing and integration with third party systems/application and sensors.	
7.		The solution should be network and protocol agonistic and provide option to connect various domain systems / devices through API's, DB Connectors, Message broker etc. with either read, write or both options. It should connect diverse on premise and/or cloud platform's and makes it easy to exchange data and services between them.	
8.		The platform should be able to normalize the data coming from different devices of same type (e.g. 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	
9.	Convergence of Multiple feeds / services	System need to have provision to integrate various services and should enable to monitor and operate them. System should have capability to source data from various systems implemented in Surat City to create actionable intelligence	
10.	Compliance to / Support for Industry Standards for the Command & Control Centre Solution	The solution should adhere to the Industry standards for interoperability, data representation & exchange, aggregation, virtualization and flexibility	
11.		IT Infrastructure Library (ITIL) standards for Standard Operations Plan & Resource Management	
12.		Geo Spatial Standards like GML & KML etc.	
13.		Business Process Model and Notation (BPMN) or equivalent for KPI Monitoring.	
14.	Command & Control Centre Components	Solution should provide web-based, one-stop portals to event information, overall status, and details. The user interface (UI) to present customized information in various preconfigured views in common formats. All information to be displayed through easy-to-use dashboards.	

#	Functions	Minimum Specifications	Bidder Compliance
15.		Solution to provide a set of services for accessing and visualizing data. Should be able to import data from disparate external sources, such as databases and files. It should provide the contacts and instant messaging service to enable effective, real-time communication. It should provide business monitoring service to monitor incoming data records to generate key performance indicators. It should also provide the users to view key performance indicators, standard operating procedures, notifications, and reports, spatial-temporal data on a geospatial map, or view specific details that represent a city road, building or an area either on a location map, or in a list view. The application server should provide security services that ensure only authorized users and groups can access data.	
16.	Incident Management Requirements	The system must provide Incident Management Services to facilitate the management of response and recovery operations:	
17.		Should support comprehensive reporting on event status in real time manually or automatically by a sensor/CCTV video feeds.	
18.		Should support for sudden critical events and linkage to standard operating procedures automatically without human intervention.	
19.		Should support for multiple incidents with both segregated and/or overlapping management and response teams.	
20.		Should support Geospatial rendering of event and incident information.	
21.		Should support plotting of area of impact using polynomial lines to divide the area into multiple zones on the GIS maps.	
22.		Should support incorporation of resource database for mobilizing the resources for response.	
23.		Should provide facility to capture critical information such as location, name, status, time of the incident and be modifiable in real time by multiple authors with role associated permissions (read, write). Incidents should be captured in standard formats to facilitate incident correlation and reporting.	
24.		The system must identify and track status of critical infrastructure / resources and provide a status overview of facilities and systems	

#	Functions	Minimum Specifications	Bidder Compliance
25.		Should provide detailed reports and summary views to multiple users based on their roles.	
26.		A Reference Section in the tool must be provided for posting, updating and disseminating plans, procedures, checklists and other related information.	
27.		Provide User-defined forms as well as Standard Incident Command Forms for incident management.	
28.	Integrated User Specific & Customizable Dashboard	Should provide integrated dashboard with an easy to navigate user interface for managing profiles, groups, message templates, communications, tracking receipts and compliance	
29.		• Collects major information from other integrated City sensors/platforms. • Should allow different inputs beyond cameras, such as, PC screen, web page, and other external devices for rich screen layout • Multi-displays configurations • Use of, GIS tool which allows easy map editing for wide area monitoring (Google map, Bing map, ESRI Arc GIS map, etc.).	
30.		Should provide tools to assemble personalized dashboard views of information pertinent to incidents, emergencies & operations of command center	
31.		Should provide historical reports, event data & activity log. The reports can be exported to pdf or html formats.	
32.		Should provide dashboard filtering capabilities that enable end-users to dynamically filter the data in their dashboard based upon criteria, such as region, dates, product, brands, etc. and capability to drill down to the details	
33.	Device Status, Obstruction Detection and Availability Notification	Should provide icon based user interface on the GIS map to report non-functional device.	
34.		Should also provide a single tabular view to list all devices along with their availability status in real time.	
35.		Should provide User Interface to publish messages to multiple devices at the same time.	

#	Functions	Minimum Specifications	Bidder Compliance
36.	Event Correlation	Command & Control Centre should be able to correlate two or more events coming from different subsystems (incoming sensors) based on time, place, custom attribute and provide correlation notifications to the operators based on predefined business and operational rules in the configurable and customizable rule engine.	
37.	Standard Operations Procedures (SOP)	Command & Control Centre should provide for authoring and invoking un-limited number of configurable and customizable standard operating procedures through graphical, easy to use tooling interface.	
38.		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.	
39.		The users should be able to edit the SOP, including adding, editing, or deleting the activities.	
40.		The users should be able to also add comments to or stop the SOP (prior to completion).	
41.		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.	
42.		The SOP Tool should have capability to define the following activity types:	
43.		**Manual Activity** - An activity that is done manually by the owner and provide details in the description field.	
44.		**Automation Activity** - An activity that initiates and tracks a particular work order and select a predefined work order from the list.	
45.		**If-Then-Else Activity** - A conditional activity that allows branching based on specific criteria. Either enter or select values for Then and Else.	
46.		**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.	
47.		**SOP Activity** - An activity that launches another standard operating procedure.	
48.	Key Performance Indicator	Command & Control Centre should be able to facilitate measurement or criteria to assay the	

#	Functions	Minimum Specifications	Bidder Compliance
		condition or performance of departmental processes & policies.	
49.		**Green** indicates that the status is acceptable, based on the parameters for that KPI, no action is required.	
50.		**Yellow** indicates that caution or monitoring is required, action may be required.	
51.		**Red** indicates that the status is critical and action is recommended.	
52.	Reporting Requirements	Command & Control Centre should provide easy to use user interfaces for operators such as Click to Action, Charting, Hover and Pop Ups, KPIs, Event Filtering, Drill down capability, Event Capture and User Specific Setup	
53.		The solution should generate Customized reports based on the area, sensor type or periodic or any other customer reports as per choice of the administrators	
54.	Collaboration Tools	Should provide tools for users to collaborate & communicate in real-time using instant messaging features.	
55.	Communication Requirements	The solution should adhere to the below mentioned communication requirements.	
56.		Provide the ability to search/locate resources based on name, department, role, geography, skill etc. for rapidly assembling a team, across department, divisions and agency boundaries, during emergency	
57.		Provide the capability to Invite - Using information provided during the location of those individuals or roles, invite them to collaborate and to share valuable information.	
58.		Provide a single web based dashboard to send notifications to target audiences using multiple communication methods including voice-based notification on PSTN/Cellular, SMS, Voice mail, E-mail, etc.	
59.		The solution should provide Dispatch Console integrates with various communication channels. It should provide rich media support for incidents, giving dispatchers the power to consolidate information relating to an incident and instantly share that information among responder teams. It should assess the common operating picture,	

#	Functions	Minimum Specifications	Bidder Compliance
		identify & dispatch mobile resources available nearby the incident location. Augment resources from multiple agencies for coordinated response.	
60.	Authentication	Use authentication information to authenticate individuals and/or assign roles.	
61.	Instant messaging	Provide ability to converse virtually through the exchange of text, audio, and/or video based information in real time with one or more individuals within the emergency management community.	
62.	Events and Directives control	Should provide the capability for the events that are produced from a sub- system and are forwarded to the Command & Control Centre. Events could be a single system occurrence or complex events that are correlated from multiple systems. Events could be ad hoc, real-time, or predicted and could range in severity from informational to critical. At the Command & Control Centre, the event should be displayed on an operations dashboard and analysed to determine a proper directive.	
63.		Directives issued by the Command & Control Centre should depend on the severity of the monitored event. Directives will be designed and modified based on standard operating procedures, as well as state legislation. A directive could be issued automatically via rules, or it could be created by the operations team manually.	
64.	What-if Analysis Tool	The solution should provide the capability to manage the emergencies and in-turn reducing risks, salvaging resources to minimize damages and recovering the assets that can speed up recovery.	
65.		To take proactive decisions that help minimize risks and damages, the solution should provide Analytical and Simulation systems as part of the Decision Support System. The solution should help simulate what if scenarios. It should help visualize assets/resources at risk due to the pending/ongoing incident, should render impacted region on a GIS/3D map. The solution should help build the list of assets, their properties, location and their interdependence through an easy to use Graphical User Interface. When in What if Analysis mode the solution should highlight not only the primary asset impacted but also highlight the linked assets which will be impacted. The user should be able to run the	

#	Functions	Minimum Specifications	Bidder Compliance
		What-if Analysis mode for multiple types of emergency events such as Bomb Blast, Weather events, Accidents etc.	
66.	Resource and Route Optimisation	The system should provide the software component for the message broadcast and notification solution that allows authorized personal and/or business processes to send large number of messages to target audience (select-call or global or activation of pre-programmed list) using multiple communication methods including SMS, Voice (PSTN/Cellular), Email, etc.	
67.	Alert & Mass Notification Requirements	Provide a single web based dashboard to create/generate and send notifications/alert to target audiences using multiple communication methods including voice-based notification on PSTN/Cellular, SMS, Pager, Voice mail, E-mail, etc.	
68.		Provide Role based security model with Single-Sign-On to allow only authorized users to access and administer the alert and notification system.	
69.	Security & Access Control	Provide comprehensive protection of web content and applications on back-end application servers, by performing authentication, credential creation and authorization.	
70.	Internet Security	Comprehensive policy-based security administration to provide all users specific access based on user's responsibilities. Maintenance of authorization policy in a central repository for administration purposes.	
71.	Authorization	Should support to enable assignment of permissions to groups, and administration of access control across multiple applications and resources. Secure, web-based administration tools to manage users, groups, permissions and policies remotely	
72.	User group	Provide policies using separate dimensions of authorization criteria like Traditional static Access Control Lists that describe the principals (users and groups) access to resource and the permissions each of these principals possess.	
73.	Provide multi-dimensional access control	SSO to Web-based applications that can span multiple sites or domains with a range of SSO options.	
74.	Flexible single sign-on (SSO)	Support LDAP authentication mechanism	
75.	Authentication	Should have ability to respond to real-time data with intelligent & automated decisions	

#	Functions	Minimum Specifications	Bidder Compliance
76.	Rule Engine & Optimization	Should provide an environment for designing, developing, and deploying business rule applications and event applications.	
77.		The ability to deal with change in operational systems is directly related to the decisions that operators are able to make	
78.		Should have at-least two complementary decision management strategies: business rules and event rules.	
79.	Situational Awareness COP (Common Operational Picture)	• The CCA should be able to combine data from various sources and present it as different views tailored to different operator's needs. • The CCA should automatically update the information based on alarms and incidents that are presented to it via the business rules engine. The polling and CCA database refresh cycle shall be configurable to match the status of the situation (whether there is an emergency or crisis or just monitoring only). • Common Operational Picture should comprise of a comprehensive view of the incident or a group of related incidents as on a specific date and time which should include but not be limited to the following: - Tasks assignment and their status - Agencies involved - Resources deployed - Incident status across relevant parameters of the incident e.g. household affected by a transformer shut down - Timeline view of the situation Suggested actions from the system with their status	
80.	Task Management	• The system should be able to create, assign, track and report on the lifecycle of tasks during a particular incident. • The system should allow a particular task to be decomposed into sub-tasks. • The system should provide an easy to interpret management dashboard view of the progress of all tasks during an incident. • The system should be able to organise the visual representation of tasks into prioritized list, filtered list, as well as colour coded representation for ease of understanding.	

#	Functions	Minimum Specifications	Bidder Compliance
		• The system should be able to perform the following functions around task management: - Create a task with unique ID. (Subtasks shall follow parent ID with second level numbering). - Assign a target completion date and time for the task, either directly or as a time-span from the task's creation. - Date and time stamp of the creation of the task. - Log and track status of tasks. System should provide capability to define status of tasks during its lifecycle. These status definitions could be mapped to other task attributes such as the task type. - Key-word search against task list. • The above attributes shall be colour coded. • The system shall allow the tasks to be filtered on the real-time dashboard by agency then by task status. This filtering should allow an operator to filter for all tasks of a particular state or a combination of state; and by the time remaining until (or time elapsed since) the target completion time. • The system should allow multiple individual workstations to select specific agencies of interest on each workstation simultaneously. • The system should allow the SSCDL/SMC to display all agencies' tasks simultaneously as well. • The tasks should be displayed on a real-time timeline. The criticality of tasks should be dynamically changed depending on the performance of the incident response.	
81.	Timeline and Charting	• The system should provide a facility to see incidents and actions (tasks) added to the CCA in a tabular list form as well as Gantt chart format filtered by day, week, month, year or any specific date range.	

#	Functions	Minimum Specifications	Bidder Compliance
		• The system should provide a facility to see incidents, actions and interdependencies between actions in a clear visual graphical manner. • The system should be able to filter the information based on at least the following parameters: - Incident information - Resources information - Agency type - Tasks - Criticality or priority	
82.	GIS Display	• Shall view the environment through geospatial or fixed composite computer-generated (JPEG, BMP, AutoCAD, etc.) map • Should allow user to view sensor and related name from the displayed map • Should allow all resources, objects, sensors and elements on the map to be geo-referenced such that they have a real world coordinate. • Should visually display a camera sensor with related camera orientation, camera range and camera field of view angle. • Should visually display an alarming sensor on map • Should visually differentiate sensor alarm severities on map through different color and icon identifiers • Should immediately view alarm details (including description, video, etc.) and investigate the alarm from the map • Should allow user to choose camera and other sensors from map to view live video and the data • Should allow user to choose camera and take live video image snapshot and save to file from any camera • Should allow user to choose camera from map to move PTZ cameras • Should allow user to choose camera to play, pause, stop, fast-forward, rewind, and play recorded video from preset time • Should allow user to choose camera and take recorded video image snapshot and	

#	Functions	Minimum Specifications	Bidder Compliance
		save to file or print from any live or recorded video • Should allow user to jump from one map to the next with a single click of a mouse with map links • Should allow map information "layers" to be displayed/hidden on items such as – - Sensor names - Sensors - Sensor range (e.g. camera – orientation, range, field of view angle) - Locations and zones - Perimeter ranges - Resource tracks Allow user to zoom in/out on different regions of map graphic	
83.	Video Display	• Shall view live or recorded video from resizable and movable windows • Should have an ability to perform video controls for video systems from workstation • Shall play, fast-forward, rewind, pause, and specify time to play recorded video • Shall take a video still image (snapshot) from live or recorded video • Shall export video for user specified time and duration • Shall have the capability to move PTZ cameras • Shall view Video in Video Matrix • Shall display in 1x1, 2x2, 3x3 and 4x4 window formats • Shall enable operator to specify video windows to be displayed in matrix • Shall enable matrix settings to be saved per user • Shall view either live or recorded video can be displayed in the video matrix window. • Shall enable video snapshot to be taken and saved from any window pane in the matrix view • Shall rotate video in "virtual" video guard tour • Shall rotate through multiple video views based on predefined video camera sequence and duration.	

#	Functions	Minimum Specifications	Bidder Compliance
		• Shall enable the user to pause the rotation of video and resume the video rotation again • Shall enable times between new video to be adjusted • Shall enable both live video and recorded video to be played through the video guard tour. • Shall enable alarms to be generated from any video pane • Shall enable user to only view and control video for which they have been assigned permissions by the administrator • Shall manually create an alarm from the live or recorded video with specified severity and description	
84.	Alarm Display	• Should have an ability to display alarm condition through visual display and audible tone • Should have an ability to simultaneously handle multiple alarms from multiple workstations • Should have an ability to automatically prioritize and display multiple alarms and status conditions according to pre-defined parameters such as alarm type, location, sensor, severity, etc. • Should display the highest priority alarm and associated data / video in the queue as default, regardless of the arrival sequence	
85.	Historical Alarm Handling	• Should have an ability to view historical alarms details even after the alarm has been acknowledged or closed. • Should have an ability to sort alarms according to date/time, severity, type, and sensor ID or location.	
86.	Alarm Reporting	• Should have an ability to generate a full incident report of the alarm being generated. • Should have an ability to display report on monitor and print report • Should have details of alarm including • severity, time/date, description and location	

#	Functions	Minimum Specifications	Bidder Compliance
		• Captured video image snapshots • Relevant sensor data such as SCADA sensors • Response instructions • Alarm activities (audit trail) • Should have an ability to export alarm report in various formats including pdf, jpeg, html, txt, and mht formats • Should have an ability to generate an alarm incident package including the full incident report and exported sensor data from the incident in a specific folder location.	
87.	Alarm Policies and Business Logic Administration	• The CCA solution should have the following ability to handle the workflow alarms through graphical user interface. • Should have an ability to match keywords or text from the alarming subsystem's incident description to raise an alarm using criteria including exact match, exact NOT match, contains match, wildcard match and regularly expression match (such as forced door alarm, denied access, door open too long, etc.) • Should have an ability to optionally match alarming subsystem's incident status, incident severity, and sensor type • Should have an ability to apply any alarm policy to one or more monitoring area(s) or zone(s) without having to reapplying the policy multiple times. • Should have an ability to apply any alarm policy to one or more sensors without having to reapply the policy multiple times. • Should have an ability to assign specific actions for each alarm • Should have an ability to activate or deactivate alarms as required • Should have an ability to create exceptions • Should Create batch-wise rules and process them • Should Check and rectify logical errors and contradictory rules • Should have an ability to schedule execution of rules	

#	Functions	Minimum Specifications	Bidder Compliance
		• Should Suspend or Terminate the application of rule • Should archive unused or deactivated rules	

14.3 Mobile App for Field Staff

The ICCC Solution shall have a field level Mobile App with following features for both Android and iOS platform:

- Assignment of tasks/issues to field staff based on the category, location, department, zone
- Field staff should be able to manage and close any task/issues using the App.
- The app should have facility to upload a geo-tagged & time-stamped photograph and remarks text, from mobile device.
- The Mobile App shall a have the facility to view the various dashboard based on user access rights.
- Mobile App shall provide push notifications to field staff in parallel to SMS and email.

14.4 Integration Required

- The ICCC will aggregate various data feeds from sensors and systems and further process information out of these data feeds to provide interface /dashboards for generating alert and notifications in real time.
- The CCC would also equip city administration to respond quickly and effectively to emergency or disaster situation in city through Standard Operating Procedures (SOPs) and step-by-step instructions. The CCC shall support and strengthen coordination in response to incidents/emergencies/crisis situations.
- Single Dashboard for City Infrastructure Management & Smart City Services for Smart Sensors, Smart Lighting, Smart Parking System, GIS Services and Other Services of Municipality work visualized real time on 2D/3D map of City. This dashboard can be accessed via web application as well as mobile app. The various information that may be accessed from the system but not limited to are as below:
  - Visual alerts generated by any endpoint that is part of the city infrastructure e.g. Surveillance cameras, City lights or any other sensors that manages various city management use cases.
  - Access information of water management (SCADA) resources
  - Information about waste management resources
  - Integration with ERP System for various administrative and financial dashboards (including GIS based integration).
  - City environmental data
  - Take action based on events generated by any city infrastructure device

- The system shall provide reporting & audit trail functionalities to track all the information and monitor operator interactions with the system and to impart necessary training to the users.

14.5 Use cases for ICCC Implementation

The ICCC Solution should be capable to develop use cases for various domain pertaining to ULB function. It shall be flexible enough to add any other domain system as and when required in future.

- **Civic Utilities**
  - Water
  - Solid Waste
  - Sewerage & Drainage
  - Roads
  - Street Light
  - Property Tax
  - Health Services
- **Mobility Services**
  - Public Transport
  - Traffic
  - Public Parking
  - Public Cycle Sharing
- **Safety and Surveillance**
- **Emergency and Crisis Management**
- **Convergence**
  - ERP
  - GIS
  - Call Center
  - Notification Gateway
  - Mobile Apps
  - Websites
  - Messaging Display
  - Public Address System

Brief description of the above is as under:

1. **City Utilities and Civic Services:** These primarily include civic services provided by the urban local body (ULB) to cater to daily needs of citizens in general. The CCC solution must integrate & monitor these services at its facility as any disruption in the services and lack of timely response could lead to poor service delivery. Few basic utilities managed by ULBs are as follows:
   a) **Water Supply and Waste Water Management:** The water supply and its quality treatment is done by ULBs. Waste water treatment operations are also managed by ULBs.

   b) **Solid Waste Management:** This includes services like residential garbage collection, construction and debris collection, and recycling of the waste collected and disposal on daily basis.

   c) **Smart Street Lighting Management:** This refers to the management of network of street lights installed across city limits to ensure safe streets.

   d) **Environment:** It refers to the various sensors installed across city to monitor data from sensors like pollution sensors, noise sensors, light sensors, etc.

2. **City mobility services:** These services refer to connectivity services provided by the city for public to travel from one point to another. It includes provision of connectivity, accessibility and also public space for parking of vehicles. The three broad domains can be listed as below:
   a) **Transit Management (connectivity):** It refers to management of public transport vehicles like buses, taxis, and trains etc. which assist public in connecting to various parts of the city.

b) **Traffic Management (accessibility):** This refers to the planning & control of transport services across city to manage the traffic flow within the city.

c) **City Parking Solutions:** It refers to the management of public parking spaces in terms of usage as well as revenue collection.

3. **Safety and Security:** Primarily the function of police, these refers to operations to enhance the safety of the public and provide necessary surveillance information to Police for both reactive and predictive policing. For ULB, the surveillance is needed for public parks, ULB offices, schools, etc.
4. **Crisis Management:** These services addresses the major disaster-related events which may occur in a city affecting city as a whole (e.g. floods) or a part of the city (e.g. fire accident). The Crisis management operations in a city includes medical services, fire brigade and police which may need to react either together or in any combinations based upon the type of exigency. Being an important aspect of city CCC, it is imperative that crisis management should be in place and properly implemented covering all the possible events which may disrupt either part of or complete city.
5. **Convergence:** There are certain enterprise systems/application used by city government to support city operations. Services like geo-graphical information system (GIS) for the city tags all the important functions of a ULB on a map providing them a holistic view of the city. Service like Enterprise Resource Planning (ERP) is essentially integrated management of core processes across various services providing real-time, digitized information about the system. Such services cut across the length and breadth of the core services and thus the offered ICCC must address the same as it assist city administrators in visualizing information at pan-service & pan-city level with functionality to drill-down on specific part of the city or specific service if required.

These services of respective functional use case should be configured with ICCC platform. ICCC solution should comprises of following component for various use cases:

a) Data Acquisition and Visualization
b) Data Analytics and Co-relation
c) Communication
d) Command and Control

The CCC Solution should be comprised of

a) Sensor Integration for data acquisition and aggregation from edge network in city.
b) Network layer
c) Data center layer
d) Applications layer
e) Data Analytics and Co-relation layer
f) Command Control layer
g) Service delivery layer
h) Security layer

Successful SI will be required to develop use cases pertaining to above mentioned domain systems with visualization, analytics, communication and control capabilities. Detailed use case for every domain system will be finalized during requirement gathering post award of the work. Tentative list of use cases have been defined as under which will be finalized during requirement gathering phase. As and when the system expands and more applications get added the SI is required to be open to all such subsequent additions.

Corresponding feeds/data would be made available from external source-system to be integrated (i.e. from ERP system, Water SCADA System etc.). The SI must carry out complete integration, where source-system is part of the current project scope.

#	Function	Use Case
1.	Transit	- Monitor the BRTS & City Bus fleet performance in terms of vehicle utilisation/trip adherence/violations/ridership/etc. - Identify the vehicles located within the selected region and on selection show vehicle & driver information - Configure thresholds, generate alert and trigger SOP
2.	SMC Vehicles	- Monitor the fleet utilisation of different SMC vehicles based on the type of vehicle/zone/department/etc. - Identify untracked / unused vehicles beyond specified time - Configure thresholds, generate alert and trigger SOP
3.	Water	- View WTP wise parameters like water treated/water quality/capacity utilisation/pumps in operation/etc. - View total water treated vs total water distributed - View water quality samples/failed samples - View and correlate water system parameters with water complaints - Generate heat map - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
4.	Street Light	- View on and off street lights on the city map - Control various parameters of the street light at a feeder pillar level - Generate heat map - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
5.	Property/Profession Tax	- View ward wise/zone wise tax collection efficiency on the city map - View ward wise/zone wise total /current/arrears outstanding on the map - Generate heat map - Map establishments on city map w.r.t. different parameters like employees registered, type of establishment, etc. - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
6.	Shops & Est. Registration	- View ward wise/zone wise registration/pending renewal on the city map - Map establishments on city map w.r.t. different parameters like employees registered, type of establishment, etc. - Generate heat map - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP

#	Function	Use Case
7.	Birth/Death Registration	- View ward wise/zone wise total/male/female/still births registered - View hospital wise average time to register birth events/zone office wise to issue birth certificates - View ward wise/zone wise gender/age/disease wise deaths registered - Generate heat map - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
8.	Nursing Home Registration	- View ward wise/zone wise hospitals/dispensaries based on speciality/bed capacity/ICU facility etc. - View ward wise/zone wise registered/non-renewed establishments - Generate heat map - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
9.	Right to Service Delivery	- View zone/civic center wise applications/pending applications/pending applications beyond SLA - View zone/civic center wise pendency/average TAT over a period of time - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
10.	Civic Center/Ward	- View the aggregate transactions/collection/TAT for a given civic center on the city map. - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
11.	Complaint Management	- View category wise /subcategory wise total/pending/pending beyond SLA/reopened/escalated complaint - View trend for category wise/subcategory wise complaint statistics over a period of time - Generate heat map - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
12.	Project Management System	- View the department wise/zone wise/area wise project status in terms of physical/financial progress/delays/status/etc. - The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
13.	Solid Waste	- View zone wise/ward wise D2D vehicle performance - View total waste/waste type wise collection statics - View and correlate SWM system parameters with complaints

#	Function	Use Case
		- The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available. - Configure thresholds, generate alert and trigger SOP
14.	Connectivity	- View connectivity status of all field devices/sensors/locations superimposed on the city map. - View the bandwidth utilization of all field devices superimposed on the city map.
15.	Display	- View the messages displayed at the Variable Messaging Sign Board (display boards) in a specific area of the city. The geographical selection can be in terms of a polygon or could be linear. - Change the message to be displayed on a specific display board, display board in an area or across the city.
16.	Sensor	View NOX/SO2/CO2/O2/etc. levels across the city, view threshold breaches, and view data superimposed on a map.

14.6 Other Requirements

1. The ICCC will be the nodal point of availability of all online data and information related to various current and future smart elements and will be connected to other SMC/SSCDL network of services through an integration layer.
2. The ICCC will be established with all hardware, software and network infrastructure including switches and routers and will be maintained by the successful bidder throughout the mentioned period.
3. All required Servers, Storage, Software, Network Switches for entire project shall be installed in the integrated manner.
4. The controls and displays should be mounted in ergonomically designed consoles to keep operator fatigue to a minimum and efficiency high.

Security: In no circumstances this data accumulated and processed by Command and Control should be compromised. Hence provisions will be made to keep all the data stored in this platform highly secured with required Security framework implementation. The platform will be hosted in DC Area located within ICCC Building. Further the platform will provide an open standards based integration Bus with API Management, providing full API lifecycle management with governance and security.

15 Annexure III- Technical requirements for ICT Components

1. The bidder can quote for each item meeting or exceeding the below mentioned minimum specification. Separate sheet needs to be attached if required.
2. The specification mentioned below are minimum specification. The bidder can quote the products equivalent or higher depending upon the sizing for the entire solution.
3. The technical spec sheet and the product brochure of the product offered should also be submitted along with technical bid.
4. In case the space provided is not sufficient then a separate paper as per the format below can be annexed to the bid. The same must be duly signed and stamped.

15.1 Video Wall Screen

The Video Wall for CCC shall be configured with 14 x 4 matrix formation of the following Professional Display (TV) Screens of DELTA /BARCO/CHRISTIE/PLANNER/NEC/MITSUIBISHI make.

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Technology	DLP Display suitable for use in video wall		
2.	Screen Size	70" or higher (14x4 matrix)		
3.	Operation	24 X 7		
4.	Lifetime of Light Source	Minimum 60,000 hrs.		
5.	Resolution	1920 x 1200 Full high definition (1080p) 16:9 Widescreen or 16:10		
6.	Contrast ratio	2200:1		
7.	Brightness	Minimum 1000 lumens (ANSI) or Minimum onscreen 290 Cd/m2		
8.	Brightness Uniformity	≥ 95 %		
9.	Viewing angle	Maximum ± 35° Horizontal / ± 33°Verticle		
10.	Response time	8ms		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
11.	Screen to Screen Gap	≤ 0.2 mm at all temperature/humidity conditions		
12.	Input	HDMI and other inputs as per Video Wall solution offered		
13.	Control	- On Screen Display (OSD) - IR remote control (Desirable)		
14.	Chip Type	Single chip DLP		
15.	Operations	24 x 7		
16.	Specify the proposed Make			
17.	Specify the proposed Model No			

15.2 Video Wall Controller (From same Video wall OEM)

#	Parameters	Minimum Requirements	Compliance (Yes/No)	Remarks, if any
Display Processor				
1.	Features	Supports output up to 1920 * 1200 resolution with 60fps		
		Supports H.264 decoding immediately		
		Supports up to 64 windows per display		
		Supports Multicasting Windows		
2.	Output	HDMI 1.3 , Channel -1 , Color depth 8/10 bit		
3.	Image processing	High tap filter for image scaling		
		Accurate synchronization for display wall		
		Support H.264/H.265/MPEG4 decoding		
		Up to 64 free window per display		
		Window title with vector texts		
		Bezel-compensation and overlap		
4.	Network	1000 MB network with redundancy		

#	Parameters	Minimum Requirements	Compliance (Yes/No)	Remarks, if any
		Should support POE		
		Supports protocol - DHCP, UDP, TCP/IP		
		Supports Static IP & Automatic IP		
5.	MTBF	more than 100,000 hours		
6.	Interface	HDMI x1, RS 232x1, USB x 2, RJ-45 x 2, BNC-F*2 Sync In/Out		
7.	Operating Range	Temperature: 0-40 degree Centigrade, Humidity - 10 to 90% non condensing		
8.	LED indicator	LED indicators for Power, Status, Network, Fan.		
HD Input Processor				
9.	Features	Captures signals up to 1920 * 1200 resolution with 60fps		
		Supports four windows at any position and in any size		
		Supports to loopback progressive VGA or HDMI input signal		
		Supports Multicasting Windows		
		Supports Power-on-Ethernet		
		Supports KVM		
10.	Input	DVI -I, Channel -1, Color depth 8 bit		
11.	Output	HDMI 1.3 , Channel -1		
12.	Network	1000 MB network with redundancy		
		Should support POE		
		Supports protocol - DHCP, UDP, TCP/IP		
		Supports Static IP & Automatic IP		
13.	Image processing	High tap filter for image scaling		
		Accurate synchronization for display wall		
		Support 4 window simultaneously		
		Supports windows multicasting		

#	Parameters	Minimum Requirements	Compliance (Yes/No)	Remarks, if any
14.	LED indicator	LED indicators for Power, Status, Network, Fan.		
15.	Operating Range	Temperature: 0-40 degree Centigrade, Humidity - 10 to 90% non condensing		
16.	MTBF	more than 100,000 hours		
17.	Interface	HDMI x1 Type A, DVI-I x1 Type A, RS 232 x1 (DB 9), USB x 2, RJ-45 x 2,		
18.	Specify the proposed Make	Make should be same of Video wall display		
19.	Specify the proposed Model No			
Server Specifications (Dell/HP/Lenovo)				
20.	CPU	Core 2 Duo 2.4G Hz or above		
21.	Memory	16 GB or above		
22.	Network	2*1 GbE LAN		
23.	OS	Windows Server 2008		
24.	HDD	SATA 160GB or above		
25.	Specify the proposed Make			
26.	Specify the proposed Model No			

15.3 Video Wall Management Software

#	Functionality	Compliance (Yes/No)	Remarks, if any
Video Wall Monitoring Software from same OEM			
1.	Ability to pre-configure and store various display layouts and access them at any time with a simple mouse click.		
2.	Ability to display multiple sources anywhere on video wall in any size.		
3.	Ability to configure display layouts in real time without reboot.		
4.	Ability to create the display layout in background without interrupting the live display.		
5.	Ability to create and store different profiles defining one or more source and size for different scenarios.		
6.	Application must be GUI based with easy to use and configure interface.		
7.	Ability to control the Wall Monitoring System through remote PC connected by LAN		
8.	Ability to display the screen content of the desktop / workstation connected with the Display Controller on the Display wall.		
9.	The wall management software should support open APIs to enable system integrators to integrate it with their Software.		
10.	Ability to centrally manage configuration parameters.		
11.	Ability to schedule backup and restore the configuration parameters.		
12.	Ability to Drag and Drop of sources.		
13.	Event log of user access and client access with time stamp.		
14.	Role based user creation and management.		
15.	Specify the proposed Make (Make should be same of Video wall display)		
16.	Specify the proposed Model No		

15.4 49" Curved Monitor for ICCC Operator

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Screen Size (Diagonal)	48”		
2.	Technology	LED Backlit		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
3.	Resolution (Pixels)	Minimum 3840 X 1080		
4.	Aspect Ratio	32:9		
5.	Brightness (Nits)	350		
6.	Native Contrast Ratio (Minimum)	1000 : 1		
7.	Antiglare Coating	Yes		
8.	Split Screen Feature	Yes		
9.	Inbuilt Speakers	Yes		
10.	Input Ports	Minimum 3 ports (HDMI / Display Port / DVI-D)		
11.	USB Port	Yes		
12.	Mounting Arrangement	Table Mount		
13.	Operating Humidity (%RH)	10 - 80%		
14.	Power Supply	230V AC, 50 Hz		
15.	Type Of Power Supply	In-built		
16.	Specify the proposed Make			
17.	Specify the proposed Model No			

15.5 Workstations for ICCC Operators

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Processor	Intel® 8th generation Core™ i7-8700 Processor (3.20 GHz Base Frequency/Clock Speed, 12M Cache, 6 core) or higher		
2.	Chipset	Intel Q370 chipset or better		
3.	Motherboard	OEM Motherboard		
4.	RAM	16 GB DDR4 RAM @ 2666 MHz or higher with single		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		DIMM, Minimum 4 DIMM slots and Shall be expendable to 64 GB		
5.	Graphics card	WHQL certified NVIDIA Graphics card with 2 GB onboard video memory		
6.	HDD	Minimum 2 TB SATA III Hard Disk @7200 RPM or higher		
7.	Media Drive	NO CD / DVD Drive		
8.	Network interface	10/100/1000 Mbps autosensing on board integrated RJ-45 Ethernet port.		
9.	Audio	Line/Mic IN, Line-out/Speaker Out (3.5 mm)		
10.	USB Ports	Minimum 6 USB ports at least 4 USB 3.0 ports (out of that 2 must be in front)		
11.	Ports	Minimum 3 display output ports(HDMI/DVI/Display Port)		
12.	Keyboard	104 keys minimum OEM keyboard		
13.	Mouse	2 button optical scroll mouse (USB)		
14.	Monitor	Please refer specifications for 49" Curved Monitor for Operators		
15.	Accessories	All workstations should be with keyboard, mouse, headphones including mic.		
16.	Certification	Energy star 5.0/BEE star certified		
17.	Operating System	Pre-loaded Windows 10 (or latest) Professional 64 bit,		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		licensed copy with certificate of authenticity (or equivalent authenticity information) and all necessary and latest patches and updates. Can be downgraded to Windows 7 Professional (64 bit). All Utilities and driver software, bundled in CD/DVD/Pen-drive media No software that are trial version or unlicensed in nature should be pre-installed on the system.		
18.	Security	Onboard Integrated Trusted Platform Module 2.0		
19.	Specify the proposed Make			
20.	Specify the proposed Model No			

15.6 Desktop PC (Dell/HP/Lenovo)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Processor	Intel® 8th generation Core™ i3-8100 Processor (3.60 GHz Base Frequency/Clock Speed, 6M Cache, 4 core) or higher		
2.	Memory	8 GB DDR4 RAM @ 2400 MHz or higher with single DIMM, Shall be expendable to 64 GB One DIMM Slot must be free for future upgrade		
3.	Motherboard	Intel Q370 chipset or better		
4.	Hard Disk Drive	Minimum 1 TB SATA III Hard Disk @7200 RPM or higher		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
5.	Audio	Line/Mic In, Line-out/Speaker Out (3.5 mm)		
6.	Network port	10/100/1000 Mbps auto-sensing on-board integrated RJ-45 Ethernet Port		
7.	USB Ports	Minimum 6 USB ports at least 4 USB 3.0 ports (out of that 2 must be in front)		
8.	Display Port	Minimum 2 display output ports (VGA/HDMI/DVI/Display Port)		
9.	Keyboard	104 keys Heavy Duty Mechanical Switch Keyboard (USB Interface) with 50 million keystrokes life per switch. Rupee Symbol to be engraved.		
10.	Mouse	Optical with USB interface (same make as desktop)		
11.	Monitor	Minimum 21.5" diagonal LED Monitor with 1366x768 or higher resolution. (Same make as desktop). Must be TCO05 certified		
12.	Operation System and Support	Pre-loaded Windows 10 (or latest) Professional 64 bit, licensed copy with certificate of authenticity (or equivalent authenticity information) and all necessary and latest patches and updates. Can be downgraded to Windows 7 Professional (64 bit). All Utilities and driver software, bundled in CD/DVD/Pen-drive media No software that are trial version or unlicensed in nature should be pre-installed on the system.		
13.	Certification for Desktop	Energy Star 5.0 or above / BEE star certified		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
14.	Other pre-loaded software (open source/ free)	Latest version of Libre-office, Latest version of Adobe Acrobat Reader, Scanning Software (as per scanner offered). These software shall be pre-loaded (at the facility of OEM or any other location) before shipment to MCGM offices/locations.		
15.	Specify the proposed Make			
16.	Specify the proposed Model No			

15.7 Office Productivity suite

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Software OEM	Microsoft		
2.	Software	Microsoft Office 2019 Professional		
3.	License Type	Perpetual, Not tied to OEM Machine (can be used on any desktop)		

15.8 Monochrome Printer

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Printer type	Monochrome laser		
2.	Printer speed	Minimum 27 PPM		
3.	Memory	32 MB RAM		
4.	Duty cycle	Minimum 10000 monthly		
5.	Duplex	Automatic		
6.	Input Tray Capacity	Minimum 250 pages		
7.	Paper size	A4, Letter, Legal		
8.	Paper Types	Plain paper, envelopes		
9.	Interface/Connectivity	USB 2.0 or higher and 10/100 Ethernet		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
10.	OS Compatibility	Windows 7, 8, 8.1,10 and above		
11.	Accessories	Power cord; Ethernet Cable (patch cord), USB cable; Install Guide; Driver Software CD		
12.	Specify the proposed Make			
13.	Specify the proposed Model No			

15.9 MFP I (Network B/W MFP for Offices in ICCC)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Function	Printer, Scanner, Copier all-in-one		
Printer				
2.	Printing Speed	Min. 25 ppm or Higher		
3.	Print Technology	Laser		
4.	Print Quality	1200 x 1200 dpi		
5.	Duty Cycle	Min 20000 pages/month		
6.	2-Side Printing	Automatic		
7.	Automatic Paper Sensor	Yes		
Scanner				
8.	Scanner type	Flat Bed with ADF for Duplex documents		
9.	Scan File Format	JPEG, PDF, PNG		
10.	Resolution	1200 x 1200 dpi		
11.	Scan speed	Min. 20 ppm		
Copier				
12.	Copy Speed	Min. 20 ppm		
Paper Feeder				
13.	Total No. of Trays	1		
14.	Input paper Handling	Min. 150-sheet standard		
15.	Output Paper Handling	Min. 150-sheet		
16.	Media Size Support	A4, A5, Legal, Letter		
Network Capabilities				
17.	Network support	Built-in Ethernet 10/100/1000 Base TX		
18.	Operating System Support	Windows XP, Vista, 7, 8, 10, Linux/Unix		
19.	Memory / Processor	256 MB, 600MHz		
20.	Cartridge Yield	7000 pages/cartridge		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
21.	Specify the proposed Make			
22.	Specify the proposed Model No			

15.10MFP II (Heavy Duty)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Function	Printer, Scanner, Copier all-in-one		
Printer				
2.	Printing Speed	Min. 30 ppm or Higher		
3.	Print Type	Monochrome		
4.	Duty Cycle	Min 50000 pages/month		
5.	2-Side Printing	Automatic		
6.	Automatic Paper Sensor	Yes		
Scanner				
7.	Scanner type	Flat Bed with ADF for Duplex documents		
8.	Scan File Format	JPEG, PDF, PNG		
Copier				
9.	Copy Speed	Min. 30 ppm		
Paper Feeder				
10.	Total No. of Trays	Minimum 2		
11.	Input paper Handling	Min. 250-sheet standard		
12.	Output Paper Handling	Min. 150-sheet		
13.	Media Size Support	A4, A5, Legal, Letter		
Network Capabilities				
14.	Interface/Connectivity	USB 2.0 and 10/100 Ethernet		
15.	OS Compatibility	Windows 7, 8, 8.1 and 10		
16.	Accessories	Power cord; Ethernet Cable (patch cord), USB cable; Install Guide; Driver Software CD		
17.	Specify the proposed Make			
18.	Specify the proposed Model No			

15.11 Projector-1 (6000 lumens)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Technology	High-aperture 3-chip, 3LCD technology		
2.	Projection Method	Ceiling Mount		
3.	Color light output	6,000 lumens or more		
4.	White light output	6,000 lumens or more		
5.	Contrast Ratio	50,000:1 (Full White 6500 lm / Full Black 0 lm)		
6.	Size (projected distance)	50 inches to 300 inches		
7.	Color Reproduction	Up to 1 billion colors		
8.	Keystone Correction	Vertical: ±45 degrees; horizontal: ±30 degrees		
9.	Projection Lens Type	Powered focus/zoom		
10.	Lens Focal Length	24.0 mm - 38.2 mm		
11.	Lens Zoom Ratio	Optical zoom 1 – 1.6x		
12.	Connectivity	HDBaseT x 1 DVI-D x1 HDMI x 1 Computer: D-sub 15 pin x 1 Component Video: BNC x 1 Audio-in: Mini stereo x 3 Audio Out x 1 Network: RJ-45 x 1, 100 Mbps Serial: RS-232c Hardwire remote jack x 1 Monitor Out: D-sub 15 pin x 1, Wireless Connectivity		
13.	Input Signals	NTSC/NTSC4.43/PAL/M-PAL/N-AL/PAL60/ SECAM/480i/576i/480p/576p/720p/1080i/1080p		
14.	Resolution	XGA		
15.	Lamp Life	Approx. 3,000 Hours durability in Normal mode & 4,000 Hours durability in Eco mode		
16.	Aspect ratio supports	4:3, 16:9, 16:10		
17.	Security Features	Security cable hole, lens lock, Kensington lock provision		
18.	Advance Features	Simultaneously project side-by-side from different sources with Split Screen Web-based remote management — control and		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		monitor projector status via a Web browser Multi-PC Projection — connect up to 50 Windows®, Mac®, iOS® or Android™ devices and display up to four screens simultaneously over the network (controlled via the Moderator4 function from your PC) advanced built-in Edge Blending, image warping and curved-surface correction technologies for a variety of applications		
19.	Mounting	Ceiling mount with fixed structure, with all accessories including of 30 mt cables		
20.	Other Features	• Fully Functional remote with battery • Power, source search selection, computer, video, A/V Mute, freeze, user ID, auto, aspect, color mode, number, page up and down, E-zoom, volume, help, menu, enter, esc and pointer functions		
21.	Accessories	carry bag, power cable, VGA/HDMI cable, remote control, User's manual (English)		
22.	Lamp warranty	Please specify		
23.	Projector Warranty	5 years comprehensive onsite back-to-back OEM warranty including service and parts		
24.	Specify the proposed Make			
25.	Specify the proposed Model No			

15.12 Projector-2 (3000 lumens)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Display Technology	Poly-silicon TFT 3LCD		
2.	Resolution	1080p, 16:10		
3.	Colours	16.7 million Colours		
4.	Brightness	3000 or more ANSI lumens (in Normal Mode)		
5.	Contrast Ratio	2000:1 or more		
6.	Video Input	HDMI, VGA, USB-A (Wi-Fi Adaptor), USB-B, Audio, S-video		
7.	Keystone Correction	Horizontal and vertical		
8.	Zoom and Focus	Manual Zoom and Focus		
9.	Audio	Internal speaker		
10.	Remote Operations	Full function Infrared Remote Control		
11.	Other features	Auto source detect, Auto-synchronisation, Keystone Correction		
12.	Mounting	Ceiling mount with fixed structure, with all accessories including of 15 mt cables		
13.	Lamp Life	Minimum 4000 Hours in Normal mode & 5000 Hours in Eco mode		
14.	Specify the proposed Make			
15.	Specify the proposed Model No			

15.13 Projector Screen 1 (200 Inch size)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Type	Portable Motorized Projection Screen with remote		
2.	Mounting Type	Manual Wall Mount		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
3.	Screen Size	200 inch diagonally		
4.	Supported Display Technology	1080p , 3D and 4K Technology		
5.	Aspect Ratio	16:9		
6.	Fabric	Matt white, high gain fabrics, flame retardant, uniform flat screen surface with less imperfection		
7.	Specify the proposed Make			
8.	Specify the proposed Model No			

15.14 Projector Screen 2 (100 Inch size)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
9.	Type	Portable Projection Screen		
10.	Mounting Type	Manual Wall Mount		
11.	Screen Size	100 inch diagonally		
12.	Supported Display Technology	1080p , 3D and 4K Technology		
13.	Aspect Ratio	16:9		
14.	Fabric	Matt white, high gain fabrics, flame retardant, uniform flat screen surface with less imperfection		
15.	Specify the proposed Make			
16.	Specify the proposed Model No			

15.15 55” LED Display Screen

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Display Size	55” inch diagonal		
2.	Technology	LED Backlit		
3.	Resolution pixel	(1920 x 1080) Full HD		
4.	Aspect Ratio	16:9		
5.	Brightness	350 nits or more		
6.	Native Contrast Ratio	1000:1		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
7.	Viewing Angle	178:178		
8.	Response time	8 ms or less		
9.	Screen Mirroring	Yes		
10.	Inbuilt Speakers	Yes		
11.	VGA Port	Yes		
12.	HDMI	Yes		
13.	USB	Yes		
14.	DVI-D	Yes		
15.	Display Port	Yes		
16.	Power Supply	230V AC, 50 Hz		
17.	Mounting	Want Mount		
18.	Certification	BIS		
19.	Should able to sync with centralized content management, Video wall , in premise presentation if necessary			
20.	Specify the proposed Make			
21.	Specify the proposed Model No			

15.16 Indoor Wifi Access Points (AP)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Architecture	The Access Point should support IEEE 802.11a/b/g/n/ac/ac Wave 2 standards		
2.		Frequency of Radio 1 shall be 2.4 GHz b/g/n 20/40 MHz (2x2:2 stream)		
3.		Frequency of Radio 2 shall be 5 GHz b/g/n/ac/ac Wave 2 20/40/80 MHz (2x2:2 stream)		
4.		Should have minimum 2 Internal Antennas		
5.		Should have minimum 1x GE RJ45		
6.		Should support Power over Ethernet (PoE) IEEE 802.3af PoE or 802.3at PoE+ & External DC Adapter Input		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
7.		Radio 1 should minimum Throughput: 300Mbps		
8.		Radio 2 should minimum Throughput: 800Mbps		
9.	Mobility	Should support wireless controller discovery		
10.		Should support minimum 16 SSIDs		
11.		Should support minimum 20 dBm Transmission Power on both Radio		
12.		Should support Wireless Mesh or equivalent technology		
13.	Security	User/Device Authentication with WPA and WPA2 with 802.1x or Pre-shared key, WEP.		
14.		Solution should have support for Captive portal for guest authentication		
15.		Solution should support devices authentication/Access List based on MAC address Filtering.		
16.		Should detect and suppress Rogue APs from day one		
17.		Solution should have security for application level filtering based on IP/Users/Group		
18.		Should have support for integration with existing security infrastructure.		
19.		Solution should have support two-factor authentication.		
20.	Management	It should be able managed by virtual/physical wireless controller.		
21.		Should support web-based secured management interface		
22.		Support Wall mounting option and necessary mounting kit should be provided with product.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
23.		Operating Temperature should be 0°C to 50°C		
24.		It should be WiFi /WiFi Alliance Certified		
25.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
26.	Warranty	Minimum **5 Years OEM Comprehensive** Replacement warranty with support & subscription of all modules/software/components if any required to utilize the product/solution with all features enabled.		
27.	Specify the proposed Make			
28.	Specify the proposed Model No			

15.17 8 ports Web Managed PoE+ Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	The switch shall have minimum 8 x RJ-45 auto-negotiating 10/100/1000 Gigabit 802.3at compatible PoE+ ports to power up the Access Points quoted above so can be utilized in Unrestricted mode / Max Powered Device mode.		
2.		Minimum 2 x 10000 SFP+ ports and 2 x 10G BASE-T RJ-45 ports Combo Uplink ports in addition to above fixed 8 ports.		
3.		Auto-negotiation for speed, duplex mode and flow control & Manual for 10M Half/Full 100M Half/Full.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
4.		Auto-MDI/MDIX.		
5.		IEEE 802.3X flow control.		
6.		Integrated LEDs for improved visual monitoring and analysis.		
7.	Switch Management	Must have IEEE 802.1Q Static & Trunk VLAN (4090 VLAN IDs) & Port-based VLAN.		
8.		Spanning Tree Protocol (STP) to support standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).		
9.		IEEE 802.3ad Link Aggregation Control Protocol (LACP).		
10.		IPv6 Host, Management, multicast and QoS.		
11.		SNMPv1, v2c, and v3.		
12.		Built-in switch Web-based GUI configuration utility for easy browser-based device configuration (HTTP/HTTPS) which Supports configuration, system dashboard, system maintenance, and monitoring.		
13.		IPv6 Host, Management, multicast and QoS		
14.		Layer 3 IPv4 and IPv6 static Routing.		
15.		Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
16.		Intuitive web interface to upload/download the Switch software to the switch.		
17.		Intuitive web interface to upload/download Configurations to and from the switch.		
18.		Availability of Port statistics through industry-standard RMON		
19.		Jumbo frame support for packets.		
20.		Broadcast storm control to help eliminate network traffic storms.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
21.		Must have Network traffic filtering and network control using MAC and IP-Binding based Access Control.		
22.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
23.	Warranty	5 Years OEM comprehensive Warranty with support.		
24.	Chassis	1U, rack-mounting kit must be included		
25.	Power	Power supply AC 230 V (50/60 Hz)		
26.	Specify the proposed Make			
27.	Specify the proposed Model No			

15.1824 ports Web Managed PoE+ Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	The switch shall have minimum 24 x RJ-45 auto-negotiating 10/100/1000 Gigabit 802.3at compatible PoE+ ports to power up the Access Points quoted above so can be utilized in Unrestricted mode / Max Powered Device mode.		
2.		Minimum 2 x 10000 SFP+ ports and 2 x 10G BASE-T RJ-45 ports Combo Uplink ports in addition to above fixed 24 ports.		
3.		Auto-negotiation for speed, duplex mode and flow control & Manual for 10M Half/Full 100M Half/Full.		
4.		Auto-MDI/MDIX.		
5.		IEEE 802.3X flow control.		
6.		Integrated LEDs for improved visual monitoring and analysis.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
7.	Switch Management	Must have IEEE 802.1Q Static & Trunk VLAN (4090 VLAN IDs) & Port-based VLAN.		
8.		Spanning Tree Protocol (STP) to support standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).		
9.		IEEE 802.3ad Link Aggregation Control Protocol (LACP).		
10.		IPv6 Host, Management, multicast and QoS.		
11.		SNMPv1, v2c, and v3.		
12.		Built-in switch Web-based GUI configuration utility for easy browser-based device configuration (HTTP/HTTPS) which Supports configuration, system dashboard, system maintenance, and monitoring.		
13.		IPv6 Host, Management, multicast and QoS		
14.		Layer 3 IPv4 and IPv6 static Routing.		
15.		Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
16.		Intuitive web interface to upload/download the Switch software to the switch.		
17.		Intuitive web interface to upload/download Configurations to and from the switch.		
18.		Availability of Port statistics through industry-standard RMON		
19.		Jumbo frame support for packets.		
20.		Broadcast storm control to help eliminate network traffic storms.		
21.		Must have Network traffic filtering and network control using MAC and IP-Binding based Access Control.		
22.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
23.	Warranty	5 Years OEM comprehensive Warranty with support.		
24.	Chassis	1U, rack-mounting kit must be included		
25.	Power	Power supply AC 230 V (50/60 Hz)		
26.	Specify the proposed Make			
27.	Specify the proposed Model No			

15.19 24 ports Web Managed Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	The switch shall have minimum 24 x RJ-45 auto-negotiating 10/100/1000 Gigabit ports		
2.		Minimum 2 x 10G SFP+ ports and 2 x 10G BASE-T RJ-45 ports Combo Uplink ports in addition to above fixed 24 ports.		
3.		Auto-negotiation for speed, duplex mode and flow control & Manual for 10M Half/Full 100M Half/Full.		
4.		Auto-MDI/MDIX.		
5.		IEEE 802.3X flow control.		
6.		Integrated LEDs for improved visual monitoring and analysis.		
7.	Switch Management	Must have IEEE 802.1Q Static & Trunk VLAN (4090 VLAN IDs) & Port-based VLAN.		
8.		Spanning Tree Protocol (STP) to support standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
9.		IEEE 802.3ad Link Aggregation Control Protocol (LACP).		
10.		IPv6 Host, Management, multicast and QoS.		
11.		SNMPv1, v2c, and v3.		
12.		Built-in switch Web-based GUI configuration utility for easy browser-based device configuration (HTTP/HTTPS) which Supports configuration, system dashboard, system maintenance, and monitoring.		
13.		IPv6 Host, Management, multicast and QoS		
14.		Layer 3 IPv4 and IPv6 static Routing.		
15.		Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
16.		Intuitive web interface to upload/download the Switch software to the switch.		
17.		Intuitive web interface to upload/download Configurations to and from the switch.		
18.		Availability of Port statistics through industry-standard RMON		
19.		Jumbo frame support for packets.		
20.		Broadcast storm control to help eliminate network traffic storms.		
21.		Must have Network traffic filtering and network control using MAC and IP-Binding based Access Control.		
22.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
23.	Warranty	5 Years OEM comprehensive Warranty with support.		
24.	Chassis	1U, rack-mounting kit must be included		
25.	Power	Power supply AC 230 V (50/60 Hz)		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
26.	Specify the proposed Make			
27.	Specify the proposed Model No			

15.20 48 ports Web Managed Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	The switch shall have minimum 48 x RJ-45 auto-negotiating 10/100/1000 Gigabit ports		
2.		Minimum 2 x 10G SFP+ ports and 2 x 10G BASE-T RJ-45 ports Combo Uplink ports in addition to above fixed 48 ports.		
3.		Auto-negotiation for speed, duplex mode and flow control & Manual for 10M Half/Full 100M Half/Full.		
4.		Auto-MDI/MDIX.		
5.		IEEE 802.3X flow control.		
6.		Integrated LEDs for improved visual monitoring and analysis.		
7.	Switch Management	Must have IEEE 802.1Q Static & Trunk VLAN (4090 VLAN IDs) & Port-based VLAN.		
8.		Spanning Tree Protocol (STP) to support standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).		
9.		IEEE 802.3ad Link Aggregation Control Protocol (LACP).		
10.		IPv6 Host, Management, multicast and QoS.		
11.		SNMPv1, v2c, and v3.		
12.		Built-in switch Web-based GUI configuration utility for easy browser-based device configuration (HTTP/HTTPS) which Supports		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		configuration, system dashboard, system maintenance, and monitoring.		
13.		IPv6 Host, Management, multicast and QoS		
14.		Layer 3 IPv4 and IPv6 static Routing.		
15.		Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
16.		Intuitive web interface to upload/download the Switch software to the switch.		
17.		Intuitive web interface to upload/download Configurations to and from the switch.		
18.		Availability of Port statistics through industry-standard RMON		
19.		Jumbo frame support for packets.		
20.		Broadcast storm control to help eliminate network traffic storms.		
21.		Must have Network traffic filtering and network control using MAC and IP-Binding based Access Control.		
22.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
23.	Warranty	5 Years OEM comprehensive Warranty with support.		
24.	Chassis	1U, rack-mounting kit must be included		
25.	Power	Power supply AC 230 V (50/60 Hz)		
26.	Specify the proposed Make			
27.	Specify the proposed Model No			

15.2110G SFP+ LX Transceiver Module for 8 Port PoE+/24 Port PoE+/24 Port/48 Port Web Managed Switches

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-LX port; Bi-Directional Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
	Note: Bidder is required to quote for same make & model proposed for the switches			

15.22 DC Core Switch

#	Parameter	Minimum Specifications	Bidder Compliance (Yes/No)
1.	Switching Capacity	Minimum 3.0 Tbsp or Higher Switching Capacity	
2.	Ports	• 48 x 10G SFP+ ports with SR/LR/ZR transceivers • 24 x 10G BASE-T Copper ports • 16 x 40G QSFP+ Uplink ports • 2 Slots must be empty after configuring above	
3.	Architecture	• Modular architecture, minimum four slots for interface module • The switch should provide nonblocking, lossless CLOS architecture with VOQs and large buffers with the flexibility and scalability for future growth. • The switch should support modular operating system which brings native high stability, independent process monitoring, and restart through the modular design and multiple processes and support enhanced serviceability functions • The switch should support In-Service Software Upgrade (ISSU) to provide an upgrade of the entire	

		chassis, or an individual task or process, with zero packet loss • The switch should support virtualization of a physical switch into multiple logical devices, with each logical switch having its own processes, configuration, and administration.	
4.	Backplane	• Properly sized Switching fabric capacity (as per network configuration to meet performance requirements of wire speed switching for the connected devices)	
5.	Layer-2 Features	• Switch should Support IEEE 802.1Q VLAN encapsulation & must have feature to configure minimum 4090 VLAN IDs.	
		• The switch must support dynamic VLAN Registration or equivalent and Dynamic Trunking protocol or equivalent	
		• Switch should Support Ether Channelling - IEEE 802.3ad or port aggregation technologies (support of LACP)	
		• Switch should Support IEEE 802.3x flow control for full-duplex mode ports.	
		• Switch should Support IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP)	
		• Support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors.	
		• IGMP snooping v1, v2 and v3	
		• Should support 64k or more ARP/MAC Address table	
		• Should support Loop protection and Loop detection.	
6.	Layer-3 Features	• Must have Static, OSPFv3, BGP4, RIPv1, RIPv2 and Policy based routing protocols with IPV4 & IPv6 supported.	
		• Should support Dual IP stack which Maintains separate stacks for IPv4 and IPv6	
		• Should support Virtual Router Redundancy Protocol (VRRP).	

		• Should support Equal-Cost Multipath (ECMP) which provides equal-cost links in a routing environment to increase link redundancy.	
		• Support 802.1D, 802.1S, 802.1w, Rate limiting.	
		• Inter-VLAN IP routing for full Layer 3 routing between 2 or more VLANs.	
		• Inbuilt Feature of Dynamic Host Configuration Protocol (DHCP) Sever which simplifies the management of large IP networks and supports client and server system.	
		• L2/L3 VXLAN and EVPN support for virtualized environments	
7.	Network Security & QoS	• Standard 802.1p CoS and DSCP.	
		• Must have Network traffic filtering and network control using MAC and IP Binding based ACLs	
		• Support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.	
		• Should support TACACS+ and RADIUS authentication	
		• Support for Automatic Quality of Service for easy configuration of QoS features for critical applications.	
		• Broadcast storm control to help eliminate network traffic storms	
		• IEEE 802.1x to allow dynamic, port-based security, providing user authentication.	
		• VLAN ACLs (VACLs) on all VLANs to prevent unauthorized data flows from being bridged within VLANs. Port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports	
		• Standard and Extended IP security router ACLs to define security policies on routed interfaces for control- and data-plane traffic.	
		• Unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address.	

		• Unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.	
		• Support for SSHv2 and SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.	
		• Private VLAN to provide security and isolation between switch ports, helping ensure that users cannot snoop on other users' traffic.	
		• MAC address management to allow administrators for analysis of users added to or removed from the network.	
		• Multilevel security on console access to prevent unauthorized users from altering the switch configuration.	
		• IPv6 Host, Management, multicast and QoS.	
8.	Management	• Easy-to-use, Web-based management interface through either GUI based software utility or using standard web browser interface which Supports configuration, system dashboard, system maintenance, and monitoring.	
		• Should have accessibility using Telnet, SSH, Console access.	
		• Intuitive web interface to upload/download Configurations to and from the switch.	
		• Should have feature for easier software/firmware upgrade through network using TFTP/HTTP etc.	
		• Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.	
		• Availability of Port statistics through industry-standard RMON	
		• SNMPv1, SNMPv2 and SNMPv3.	
9.	Networking Passive Components	• All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.	

10.	Warranty:	• 5 Years Direct OEM Comprehensive Warranty with parts, Support.	
11.	Chassis:	• Device must have 1+1 redundant AC power input supply and must be included with switch from day 1 with necessary mounting kit.	
12.	Specify Make of proposed network switch		
13.	Specify Model of proposed network switch		

15.23 10G BASE-T RJ-45 Copper Transceiver Module for DC Core Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-T RJ-45 Transceiver Module for 10G SFP+ Slots		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
	Note: Bidder is required to quote for same make & model proposed for the DC Core switches			

15.24 10 G SFP+ LX transceiver module for DC Core Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-LX port; Bi-Directional Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
	Note: Bidder is required to quote for same make & model proposed for the DC Core switches			

15.25 40G QSFP+LX transceiver Module for DC Core Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	40G BASE-LX port; Bi-Directional Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
	Note: Bidder is required to quote for same make & model proposed for the DC Core switches			

15.26 DC Aggregation Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Switching Capacity	• Switching Capacity of minimum 640 Gbps or Higher		
2.	Ports	• Should have minimum 24 X 10G SFP+ ports. • Should have minimum 2 X 40G BASE-QSFP+ SX/LX/LR ports		
3.	Switch type	• Fully Managed & Advanced Layer 3 Core/Data Centre Switch & Non Chassis Based		
4.	Backplane	• Properly sized Switching fabric capacity (as per network configuration to meet performance requirements of wire speed switching for the connected devices)		
5.	Layer-2 Features	• Switch should Support IEEE 802.1Q VLAN encapsulation & must have feature to configure minimum 4090 VLAN IDs.		
		• The switch must support dynamic VLAN Registration or equivalent and		

		Dynamic Trunking protocol or equivalent		
		• Switch should Support Ether Channelling - IEEE 802.3ad or port aggregation technologies (support of LACP)		
		• Switch should Support IEEE 802.3x flow control for full-duplex mode ports.		
		• Switch should Support IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP)		
		• Support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors.		
		• IGMP snooping v1, v2 and v3		
		• Should support 32k or more ARP/MAC Address table		
		• Should support Loop protection and Loop detection.		
6.	Layer-3 Features	• Must have Static, OSPFv3, BGP4, RIPv1, RIPv2 and Policy based routing protocols with IPV4 & IPv6 supported.		
		• Should support Dual IP stack which Maintains separate stacks for IPv4 and IPv6		
		• Should support Virtual Router Redundancy Protocol (VRRP).		
		• Should support Equal-Cost Multipath (ECMP) which provides equal-cost links in a routing environment to increase link redundancy.		
		• Support 802.1D, 802.1S, 802.1w, Rate limiting.		
		• Inter-VLAN IP routing for full Layer 3 routing between 2 or more VLANs.		

		• Inbuilt Feature of Dynamic Host Configuration Protocol (DHCP) Sever which simplifies the management of large IP networks and supports client and server system.		
		• L2/L3 VXLAN and EVPN support for virtualized environments		
7.	Network Security & QoS	• Standard 802.1p CoS and DSCP.		
		• Must have Network traffic filtering and network control using MAC and IP Binding based ACLs		
		• Support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.		
		• Should support TACACS+ and RADIUS authentication		
		• Support for Automatic Quality of Service for easy configuration of QoS features for critical applications.		
		• Broadcast storm control to help eliminate network traffic storms		
		• IEEE 802.1x to allow dynamic, port-based security, providing user authentication.		
		• VLAN ACLs (VACLs) on all VLANs to prevent unauthorized data flows from being bridged within VLANs. Port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports		
		• Standard and Extended IP security router ACLs to define security policies on routed interfaces for control- and data-plane traffic.		

		• Unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address.		
		• Unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.		
		• Support for SSHv2 and SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.		
		• Private VLAN to provide security and isolation between switch ports, helping ensure that users cannot snoop on other users' traffic.		
		• MAC address management to allow administrators for analysis of users added to or removed from the network.		
		• Multilevel security on console access to prevent unauthorized users from altering the switch configuration.		
		• IPv6 Host, Management, multicast and QoS.		
8.	Management	• Easy-to-use, Web-based management interface through either GUI based software utility or using standard web browser interface which Supports configuration, system dashboard, system maintenance, and monitoring.		
		• Should have accessibility using Telnet, SSH, Console access.		
		• Intuitive web interface to upload/download Configurations to and from the switch.		
		• Should have feature for easier software/firmware upgrade through network using TFTP/HTTP etc.		

		• Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
		• Availability of Port statistics through industry-standard RMON		
		• SNMPv1, SNMPv2 and SNMPv3.		
9.	Networking Passive Components	• All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
10.	Warranty:	• 5 Years back to back OEM Warranty with parts		
11.	Chassis:	• Device must have 1+1 redundant AC power input supply and must be included with switch from day 1 with necessary mounting kit.		
12.	Specify Make of proposed network switch			
13.	Specify Model of proposed network switch			

15.2710G BASE-T RJ-45 Copper Transceiver Module for DC Aggregation Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-T RJ-45 Transceiver Module for 10G SFP+ Slots		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
	Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches			

15.28 10G SFP+ LX Transceiver Module for DC Aggregation Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-LX port; Bi-Directional Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
	Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches			

15.29 40G QSFP+ LX Transceiver Module for DC Aggregation Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	40G BASE-LX port; Bi-Directional Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
	Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches			

15.30 DC Application & Delivery Controller with Global Server Load Balancing.

#	Minimum Specifications	Compliance (Yes / No)	Remarks, if any
1	**OEM should have support Centre in India.**		
	Port		
2	Should have minimum 4 X 1G Base-T ports		
3	Should have minimum 2 X 1G Base-X SFP ports (SFP Transceivers/Modules must be provided/supplied with product) from day one.		
	Appliance Throughput		
4	Minimum 1 Gbps or higher L4/L7 throughput		
5	Minimum 1,00,000 Layer 4 Connections per second		
6	Maximum Layer 4 Concurrent Connection 5M (Million)		
7	Minimum 1000 RSA TPS, 2k Keys as SSL Performance		
8	Minimum 4 Gb Memory		

#	Minimum Specifications	Compliance (Yes / No)	Remarks, if any
	Global Server Load Balancing (GSLB)		
9	Should have Global data center DNS-based failover of web applications		
10	Should be able to Deliver local and global load balancing between multi-site SSL VPN		
11	DNS Access Control Lists		
	Layer 4 Application Load Balancing		
12	Should have Round robin, weighted round robin, least connections, shortest response		
13	Should have feature of L4 dynamic load balancing based on server parameters (CPU, Memory and disk)		
	Layer 7 Application Load Balancing		
14	Should be HTTP, HTTPS, HTTP 2.0 , FTP, SIP, RDP, RADIUS supported		
15	Should have feature of L7 content switching for HTTP Host, HTTP Request URL, HTTP Referrer, Source IP Address		
16	Should have feature of URL Redirect, HTTP request/response rewrite/modification		
17	Should have feature of Layer 7 DNS load balancing, security, and caching		
	Link Load Balancing		
18	Should have Inbound and outbound Link Load Balancing		
19	Support for Policy Route and Static NAT.		
	Networking		
20	IPv6 Support, IPv6 routing		
21	**License for Device**		
	• The proposed solution must be licensed per unit for **5 years** & there should not be any license limit on number of sessions, rules, no of nodes/desktops, no. of IPs, domains, etc. It must include minimum **5 years** subscription for above stated specifications. • Hardware must be latest released product from OEM and it must not be under the list end of sale, end of support from OEM till **5 years** from date of commissioning.		
	• All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
22	5 Years OEM comprehensive Warranty with support		
23	Specify the proposed Make		
24	Specify the proposed Model No		

15.31 Wireless LAN Controller for Indoor Wifi Access Point

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Hardware	Redundancy Features: Controller Must support Active- Active and Active-Passive.		
2.		Should Support minimum 50 x 802.11 ac Wave2 base Wifi Access Points		
3.		Should have minimum 1 x 10 G RJ45 Port		
4.		Should have minimum 1 x Management Port		
5.	General Feature Requirements	Ability to map SSID to VLAN.		
6.		Should support automatic channel selection – interference avoidance (Co-channel management, Adjacent Channel Management, Channel reuse management).		
7.		Should have System Internal Captive Portal for guest management		
8.	System Architecture	Centralized MAC addresses filtering		
9.		Should support onboard/ external DHCP server		
10.		Controller should support Onboard / External AAA server		
11.		The proposed architecture should be based on controller based Architecture within AP deployment. While Encryption / decryption of 802.11 packets should be performed at the AP.		
12.		Support roaming between access points deployed on same subnet and different subnets		
13.	QoS features	Per user bandwidth Rate Limiting		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
14.		Self-healing (on detection of RF interference or loss of RF coverage)		
15.		Should support per user, per device, and per application/TCP-port prioritization		
16.		Dynamic load balancing to automatically distribute clients to the least loaded 802.11 channel and AP; load balancing must not require any client specific configurations or software		
17.		Adaptive RF management that provides the capability to pause channel scanning / adjust RF scanning intervals based on application and load presence.		
18.		Capability to provide preferred access for –fast clients over – slow clients (11n vs. 11g) in order to improve overall network performance.		
19.	RF Management	Should be able to load balance clients across channels and access points		
20.		Should be able to load balance clients based on client count		
21.		Should be able to load balance clients based on effective throughput on AP		
22.		Should be able to use client and throughput as a measure to load balance between bands		
23.	Inline Security Features	Should allow authenticated client devices to roam securely from one access point to another, within or across subnets, without any perceptible delay Security during re association.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
24.		Controller should support AES-128 and AES-256 encryption		
25.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one..		
26.	Warranty:	5 Years OEM comprehensive Warranty with support		
27.	Specify the proposed Make			
28.	Specify the proposed Model No			

15.32 Servers for SMC Application Requirements

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Make	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Modular Servers or amongst the top 5 for World-wide Market share in terms of Revenue as per IDC for Server Market		
2.	Form factor	Rack		
3.	Processor	2 No. of Intel® Xeon® Gold 6130 2.1G,16C/32T, 10.4GT/s, 22M Cache,Turbo,HT (125W) DDR4-2666		
4.	RAM	• DIMM Slots must be supporting 2400 MHz/2666MHz memory frequency • Memory DIMM Slots must be supporting 8GB / 16GB / 32GB /64GB/128GB memory modules.		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		• Minimum 256 GB Memory per physical server		
5.	Chipset	Compatible latest series of chipset (specify chipset)		
6.	Internal Storage	Minimum 2 x 600 GB SAS (10k rpm) hot swap		
		Specify the No. of HDD Slots Supported		
7.	Storage Controllers	SAS RAID Controller supporting RAID 0,1 and 5 with minimum 512MB Cache memory with battery backup		
8.	Network interface	2 X 10GbE LAN ports for providing Ethernet connectivity		
9.	Storage Connectivity Interface	2 X Single-port 16Gbps FC HBA for providing FC connectivity		
10.	Power Supply	Minimum 750W Hot Swappable High Efficiency Redundant Power Supplies (1+1) capable to provide necessary power for fully loaded server with C14 to C13 PDU Power Cables		
11.	Mounting Kit	Sliding Rack mounting kit for 2U rack server		
12.	Virtualization	Shall support Industry standard virtualization hypervisor like Hyper-V, VMWARE, Oracle VM etc. OEM of the blade chassis / rack and servers offered.		
13.	Warranty	24 x 7 Five (5) years on-site back to back comprehensive warranty		
14.	Quantity	9 No.		
15.	Specify Make of proposed Server			
16.	Specify Model of proposed Server			

15.33 Servers for ICCC Requirements

(As Building block, to establishing computing solution for sub-systems/solutions)

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Make	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Modular Servers or amongst the top 5 for World-wide Market share in terms of Revenue as per IDC for Server Market		
2.	Form factor	Blade / Rack		
3.	Processor	Latest series/Generation of 64 bit Gold or Platinum x86 processor(s) with 8 or higher Cores Processor speed should be minimum 2.4 GHz Minimum 2 processors each physical server		
		Specify Processor Model		
		Specify Processor Speed		
		Specify No. of Cores		
		Specify Cache		
		Specify No. of Processors Proposed		
4.	RAM	• DIMM Slots must be supporting 2400 MHz/2666MHz memory frequency • Memory DIMM Slots must be supporting 8GB / 16GB / 32GB /64GB/128GB memory modules. • Minimum 64 GB Memory per physical server		
		Specify Maximum RAM supported		
		Specify Total RAM proposed		
5.	Chipset	Compatible latest series of chipset (specify chipset)		
6.	Internal Storage	Minimum 2 x 600 GB SAS (10k rpm) hot swap		
		Specify the No. of HDD Slots Supported		
		Specify the HDD Capacity Offered		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		Specify the HDD Composition proposed with capacity of each type of HDD		
7.	Storage Controllers	SAS RAID Controller supporting RAID 0,1 and 5 with minimum 512MB Cache memory with battery backup		
8.	Network interface	2 X 10GbE LAN ports for providing Ethernet connectivity		
9.	Storage Connectivity Interface	2 X Single-port 16Gbps FC HBA for providing FC connectivity		
10.	Power Supply (for Rack Server)	Minimum 750W Hot Swappable High Efficiency Redundant Power Supplies (1+1) capable to provide necessary power for fully loaded server with C14 to C13 PDU Power Cables		
11.	Virtualization	Shall support Industry standard virtualization hypervisor like Hyper-V, VMWARE, Oracle VM etc. OEM of the blade chassis / rack and servers offered.		
12.	Warranty	24 x 7 Five (5) years on-site back to back comprehensive warranty		
13.	Quantity	Specify the quantity of the proposed server as per the solution architecture		
14.	Specify Make of proposed Server			
15.	Specify Model of proposed Server			

15.34 Storage

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Make	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for General-Purpose Disk Arrays or amongst the top 5 for World-wide Market share in terms of Revenue as per		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		IDC for Enterprise Storage Market		
2.	Controllers	• At least 2 hot pluggable Controllers in active/active mode (for all required protocols) with automatic failover to each other in case of one controller failure. • The controllers / Storage nodes should be upgradable seamlessly, without any disruptions / downtime to production workflow for performance, capacity enhancement and software / firmware upgrades. • Minimum four Xeon 8 Core CPU across storage controllers • Controller must support Multipath I/O Architecture.		
3.	Storage Operating System	• Storage offered must be with the latest operating system		
4.	Cache	• Minimum 512 GB of useable cache across controllers. Cache must be controller cache and not SSD based cache. • Cache shall be used only for data and control operations and should not handle any overhead of operating system.		
5.	Host Interface Port	Minimum 4 nos. of 16 Gbps Fibre Channel Ports per Controller shall be available. Ports must be active and populated with SFP+ from day one.		
6.	Back and front port	The storage should support 8/16 Gbps on FC to connect SAN Switch, 10Gbps on iSCSI (SFP+/Base-T) to Connect on LAN switch within same controller pair.		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
7.	Scalability	System should support a minimum of 500 drives or more within the same set of controllers.		
8.	Disk Drive Support	System should have support for • SSD/Flash drives • SAS drives • Near-line SAS drives		
9.	RAID support	Should support various RAID Levels (RAID 0 / 1 / 5 / 6 / 10 or any combination of RAID level on single Storage system)		
10.	Solution/ Type	Bidder is required to offer corresponding ports both in server as well as storage controller based on the solution proposed (FC/iSCSI).		
11.	Storage	Bidder has to provide minimum 500 TB usable capacity across the storage with single or multiple expansion units. Out of 500 TB minimum 20% disk capacity shall be using Enterprise Grade SSD Disks, 40% disk capacity shall be on SAS Drives and 40% disk capacity shall be on NL-SAS Drives. Storage system should be configured and offered with required hot-spares for the different type and no. of disks configured, as per the system architecture best practices. (100 TB SSD, 200 TB SAS, 200 TB NL SAS)		
12.	Global Hot Spare	• System should have the capability to designate global hot spares that can be automatically be used to replace a failed drive anywhere in the system. • Storage system should be configured and offered with required Global Hot-spares for		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		the different type and no. of disks configured, as per the system architecture best practices.		
13.	Minimum LUNs	• Capacity to create minimum 2048 numbers of LUNs		
14.	Thin Provisioning	• Offered Storage System should have Thin Provisioning and Thin Reclamation.		
15.	Hardware Platform	• Rack mounted form-factor • Modular design to support controllers and disk drives expansion		
16.	On-line Expansion/RAID Group creation/ Expansion	• System should have online expansion and shrinking of RAID Group or addition and deletion of new RAID Group. Must be able to add and delete additional disks on the fly to expand or reduce the RAID group capacity or create new RAID Group.		
17.	Redundancy and High Availability	• The Storage System should be able to protect the data against single point of failure with respect to hard disks, Cache memory, Controller card, connectivity interfaces, fans and power supplies		
18.	Management software	• All the necessary software (GUI Based) to configure and manage the storage space, RAID configuration, logical drives allocation, snapshots etc. are to be provided for the entire system proposed from day-1. • Licenses for the storage management software should include disc capacity/count of the complete solution and any		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		additional disks to be plugged in in the future, upto max capacity of the existing controller/units. • A single command console for entire storage system. • Should also include storage performance monitoring and management software. This should provide detail of performance like IOPs utilization, response time and also provide capacity detail like amount of capacity allocated, capacity used and capacity free. • Should provide the functionality of proactive monitoring of Disk drive and Storage system for all possible disk failures • Should be able to take "snapshots" of the stored data to another logical drive for backup purposes • There should be a dedicated Ethernet port for management and it should not use the iSCSI host ports for management.		
19.	Data Protection	The storage array must have complete cache protection mechanism either by de-staging data to disk or providing complete cache data protection with battery backup for up to 4 hours		
20.	Perpetual software License	The software license supplied should be perpetual so that there will be no additional software cost while replacing the storage within the same class.		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
21.	Server Operating System Support	Must be completely supported by the server operating system offered by the bidder for all the features and technology		
22.	Virtualization Support	Storage System must be completely supported by the virtualization technology offered by the bidder for all the features and technology		
23.	Accessories	All the necessary tools & tackles licenses, cables/ connectors for Ethernet/ Fibre/USB/ Power etc. required for making the system operational shall be provided by the bidder.		
24.	SAN Switch	• Standard 24 Port 16Gbps SAN Switches x 2 Nos. • Each SAN switch with minimum 16 Activated ports from day one or if more active ports require as per proposed application architecture, bidder has to provide the same. • Necessary SFP modules, patch cables and other required accessories has to be provided.		
25.	Warranty	24 x 7 five (5) years on-site back to back comprehensive warranty		
26.	Specify Make of proposed Storage			
27.	Specify Model of proposed Storage			

15.35 42U Rack

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Dimension	Rack Width: 750mm to 800mm Rack Depth/Length: 1000 mm to 1200 mm		
2.		Rack Height : 42U		
3.		Color: Black		
4.		Rack Equipment Mounting should be as per EIA-310 standard: 19" along with 'U' marking.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		
5.		Rack should have minimum weight carrying Capacity of 500Kgs.		
6.	Doors	Front and Back doors should be perforated with at least 60% or higher perforations		
7.		Rack should have single front door and it should be able moved to the opposite side or interchanged with rear doors. Doors should be able to removed easily with simple lift-off design.		
8.		Rack should have Split rear doors to improve access and		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		
		serviceability to rear of rack mounted equipment.		
9.	Side Panels	Side Panels should be of Half-height on each side for easy access.		
10.		Side panels should be lockable utilizing a single key with the doors.		
11.	Cable access	It should have cable access slots in the roof for overhead cable egress.		
12.		It should have unobstructed cable access from bottom of the Rack through a raised floor.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		
13.	Wire managers	Two vertical wire/cable managers/panels should be provided in front and back of the rack for cable management.		
14.	Power Distribution Units	Rack must be supplied with 2 x PDUs/Rack - Vertically Mounted, 32AMPs with 25 Power Outputs. (20 Power outs of IEC 320 C13 Sockets & 5 Power outs of 5/15 Amp Sockets), Electronically controlled circuits for Surge & Spike protection 32AMPS MCB, 5 KV AC isolated input		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		
		to Ground & Output to Ground.		
15.		PDUs provided should have LAN/RJ-45 Port and it should be able to manage by assigning IP address to fetch the Information like current/voltage/power being drawn from the each port or total from PDU.		
16.		All types of Power Cables (like C13 to C14, e.t.c.) required to power up the various Network/Server devices should be supplied/provided with it from day one.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		
17.	Hardware/Accessories provided	Rack must be supplied with minimum 2 (two) nos of standard hardware pack/bag (which includes mounting nut-bolts, cable ties e.t.c) for mounting IT equipment and tools for enclosure adjustment.		
18.		Pre-installed full-enclosure height Integrated and adjustable rear accessory channel to accommodate PDUs and vertical cable organizers.		
19.		Rear accessory channel should be able to move to other		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		
		locations of the enclosure along the side brace to resituate cable management as per requirement.		
20.		1U Mountable Cable Manager as per site requirement needs to be supplied from Day one.		
21.	Warranty	5 Years repair or replacement warranty with parts		

15.36 Enterprise Security & Antivirus Software License for Server

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Enterprise Server Security Software shall provide server security, network security and application security covering Antivirus, Antimalware, IDS/IPS, Web Application Protection, etc. to ensure complete security		
2.	OEM should be listed in the Leader's Quadrant of Gartner Magic Quadrant for Endpoint Protection Platforms		
3.	Specify the Proposed Make		
4.	Specify the Proposed Model / Version No		
5.	Specify the Type of License (Socket based/Core based/VM based/Trust based)		
6.	Specify the quantity of the License (same to be specified in BOQ & Price Bid)		

15.37Call Center Management Solution

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	The contact centre solution should be able to route voice/ VOIP calls from centralized Interactive Voice Response System (IVRS) to respective call centre (s) along with interaction history of the calling party. The solution should able to integrate / route the call to existing Sitilink IVRS system for smooth operations. **Note:** Scope of EPBAX and PRI Lines are not in the scope of SI. However, the SI is required to co-ordinate with SMC for the smooth roll out of IVRS based call centre management solution.		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
2.	The callers should be able to access the various services through state-of-art centralized integrated Interactive Voice Response System (IVRS). The information is envisaged to be available to the customer through telephone (IVRS) and call centres agents.		
3.	The IVRS should establish two way communication on the same channel with customers through recorded synthesized voice in Hindi / English / Regional Language or in combination of languages to give information, reply to queries and provide other.		
4.	IVRS should be modular and scalable in nature for easy expansion without requiring any change in the software.		
5.	It should be possible to access IVRS through any of the access device such as Landline telephone, Mobile phone (GSM as well as CDMA) etc.		
6.	IVRS should support various means of Alarm indications in case of system failures, e.g. Functional error, missing voice message prompt, etc., and shall generate error Logs.		
7.	The system should have the ability to define business rules based upon which the system should quickly identify, classify and prioritize callers, and using sophisticated routing, to deliver interactions to the best qualified agent in the any of the connected local/remote call centre, regardless of interaction channel		
8.	The IVRS should be capable to capture usage details of each customer as the customer traverses through a call. The IVRS should have an interface through which usage details can be shared with other solutions.		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
9.	The application should provide CTI services such as: • Automatic display (screen pop) of information concerning a user/customer on the call agent screen prior to taking the call based on ANI, DNIS or IVR data. • Synchronized transfer of the data and the call to the call centre agent. • Transfer of data corresponding to any query raised by any IP agent regarding a query raised by a customer whose call is being attended by the call IP agent. • Call routing facilities such as business rule based routing, skills-based routing etc.		
10.	The application should support integration to leading CTI middleware vendors.		
11.	Should provide pre-integration with industry standard IVR servers and enhance routing & screen-pop by forwarding the information.		
12.	Should provide facilities for outbound calling list management, and software based predictive or preview dialling.		
13.	**Call Centre Agent's Desktop: The agents desktop shall have an application which shall fulfil the following functionalities :** • It should provide consistent agent interface across multiple media types like fax, SMS, telephone, email, and web call back. • The agent's desktop should have a "soft-phone" – an application that enables standard telephony functions through a GUI. • It should be possible for agents to escalate the query.		
14.	System should be able to integrate with e–mail / SMS gateway so that appropriate messages can be sent to the relevant stakeholders after the interaction and any updates thereon.		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
15.	Should intelligently and automatically routes inquires with skills based routing discipline to agents		
16.	Should have an Intelligent distribution of email to agents		
17.	**CTI (Computer Telephone Integration) Application Requirements** • The CTI link should allow a computer application to acquire control of the agent resources on the IP EPABX & change state of the agent phone through commands on the CTI link. • The CTI link should pass events & information of agent states & changes in agent states as well as incoming calls to the computer applications. • The CTI link should allow a computer application to take control of the call flow inside the IP EPABX & also allow the computer application to decide the most suitable action / agent for an incoming call. • Should be able to integrate with various domain systems of SMC to send/receive data like caller number, call duration, agent id, transfer details, etc. • Ability to generate and service requests • Call events should be handled from the system such as hold, retrieve hold, conference, transfer, etc. • CTI should be integrated with core call center system and update the IVR		
18.	**Automatic Call Distribution (ACD) Requirements** • The ACD solution should be able to route the call to any remote call centre agent using IP phones • Should able to Handle high call volumes efficiently		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	• Should allow calls to be transferred within the call center • Should support multiple groups for all call types • Should provide highly configurable system for adding/removing users • Should have an ability to queue or hold the call for an agent if none is immediately available. • Should have an ability to keep the callers informed as to the status of the call and providing information to callers while they wait in queue. • System should be able to perform prioritized call routing		
19.	**Supervisor Module** The call centre should provide a graphical console application program for the supervisor's workstation. This position shall facilitate the following features:- • Any supervisor shall be able to monitor or control any group in the call Centre. • It shall show the live activity of each agent in details as well as in a summarized fashion including information like total number of calls received, calls answered, average response time etc. • The Supervisor console shall also graphically display live status of the call session summary, number of call waiting in the queue, call traffic etc. • Live status of the group shall be shown, including waiting calls and calls being answered currently. • Access to the supervisor console shall be restricted. • It shall be possible for a supervisor to attend calls whenever necessary.		
20.	**Recording**		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	The solution should have provision for call recording, archival and retrieval. The recording should contain detailed call information and the solution must provide advanced searching capabilities		
21.	Proposed solution should not have any user license restriction. SMC/SSCDL should be able to create as many users as required. The performance of solution must not degrade with increase in number of users in the application		
22.	Should have a comprehensive audit trail detailing every user activity including system/security administrators with before and after image		
23.	**Security and Privacy** • Should be capable to protect the caller information and thus privacy of the caller. • System must maintain log including date, time, terminal number of each operation, done by every user/group and should have back up. • There should be a complete and comprehensive security from unauthorized access and misuse. • System should support the following - Forced password change - Display last login/logout - Failed login attempts - Inactivity time out - No concurrent login - Block/delete/relocate users - Password control (length, composition etc.) - Password not displayed when entered - Password change interval - Password change history		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	- Login session timeout - Allows password reset - Allows user to change password		
24.	**Reporting** • The daily, weekly, monthly MIS reports shall include all the following but not limited to: report on calls handled, call pending, average duration of calls, min. & max duration of calls, number of instances the operator found busy, calls abandoned due to breakdown, etc. The proposed solution must have comprehensive reports for various activities by the Contact Center: - Calls per week, month or other period. - Numeric and graphical representation of call volume - Calls for each interaction tracked by type - Number of dropped calls after answering - Calls that ended while on hold, indicating that the caller hung up - Reports must have restricted access based on user access privileges. - The ad-hoc reporting tool must enable reports to be exported to other formats like MS Excel and MS word format - Agent based/shift based and other suitable reporting shall be there		
25.	Specify the proposed Make		
26.	Specify the proposed Version No		

15.38 IP KVM with 17" Rack LED/LCD and USB VM Server Module Bundle

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	• 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide e.t.c.		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		

16 Annexure IV- Scope & requirements for Data Center & other Components

ICCC building is comprising of the Data Center Room at the 2nd floor. The dimensions of the same are 17,300 mm x 7620 mm. The drawing of the building is attached for reference.

The SI shall build, operate, and maintain the DC during the contract period. The minimum specified work to be undertaken by the Prime Vendor for setting up and operating and maintaining DC has been summarized as under:

Design of the Data Centre

- Physical Infrastructure comprising of Civil, Electrical & Mechanical works required to build a Data Centre. This shall also include site preparation.
- Multi-layer security infrastructure to prevent unauthorized access to the Data Centre.
- Networking and other associated IT Components in the Data Centre.

Supply/ Installation

- All active and passive components.
- Physical infrastructure components such as Air-Conditioning System, Fire Detection and Suppression System, Lighting system, Rodent Control, Water leakage detection system, Access Control System, Electrical Cabling, etc.
- IT Infrastructure components such as necessary Servers, storage, Databases, Networking & Security components, Software and other IT components required as per the scope of the RFP.
- Commissioning & Acceptance Testing shall involve the completion of the Data Centre site preparation, supply and installation of the required components and making the Data Centre for carrying out live operations.
- SSCDL will provide the space of approximately 1400 sq.ft. The DC hosting space is designed to house 30 racks and the selected SI will be required to supply, install and commission 15 racks which will be used to host the server, storage and network equipments proposed as part of this project. This rack space will also host SSCDL/SMC's own IT infrastructure. Further existing racks pertaining to other operational systems like AFCS, ITMS, ITCS, etc. will be shifted to DC on successful commissioning of the DC.
- The general requirement for the Data Centre is mentioned here after and system wise requirement / scope of work / specification are as per the details below. The Prime Vendor must adhere to the design criteria and specification.
    - All Civil & Interior work and Furnishing works
    - Earthing & wiring.
    - Integration with existing UPS System
    - Integration with existing DG Sets
    - Adequate LED Lighting

- Electrical works within the Data Center
- Precision Air conditioning
- Intelligent Smoke & Fire Detection system
- Fire Suppression System
- Electromagnetic door lock
- Biometric Access Control System for the server room
- Proximity card reader solution
- Access Card
- Automatic water Leak Detection system
- Rodent Repellent System
- Data Center Management system
- Networking Components
- IP KVM switches
- Any other items required for this purpose

- The design should include Civil works, electrical and data cabling, wiring and connections, Precision Air conditioning and comfort air-conditioning, etc.
- Provide necessary services and maintenance of Data Centre environmental infrastructure and supplied components during the contract period so as to ensure maximum uptime and SLA adherence as per RFP.
- Provide Fire Alarm, Fire detection and suppression, Rodent control, Water leakage detection and control, BMS, Raised floor area, false sealing, lighting services, airconditioning and environmental control equipments, access control and building management devices, fire suppression devices, Fire rated material, etc.
- The DC build should also include LAN cabling, power cabling, termination and distribution points, patch panels etc.
- The area will also host Security components. The security architecture will provide controlled access to the hosting area including a comprehensive BMS system which maintain adequate log of physical access and security. The logs would be stored for 12 months.
- The top false ceiling would be created leaving appropriate space from the true ceiling of the floor. This false ceiling will house cables of Electrical lighting, Firefighting, Rodent Control and CCTV components.
- The false flooring will house electrical cabling, Data Cabling (Passive), Rodent Control, etc. Network and electrical cables should be separately laid and should maintain a gap of minimum 2 feet between them so as to avoid electro-magnetic interference.
- Providing and fixing Access flooring system (False floor) HPL panel with edge support rigid grid under structure system. The system shall provide for suitable Floor tiles, pedestals and stringers designed to withstand various static loads and live loads. The entire Access floor system shall be made from steel cementations infilled. Access Floor tiles shall provide for adequate fire properties, acoustic barrier and air leakage resistance. The system shall be able

to accept an approved laminated floor covering i.e. Anti-static High pressure laminates with PVC beading on the edges of the tiles. The rate shall be inclusive of wire manager & tile lifter etc. The SI will be required to provide the Aluminium Floor False Panel (with minimum 50% open area in each panel) in required number as per industry standard considering the datacentre area and capacity in terms of 30 racks.

- Supply & Fixing of Antistatic Laminate skirting matching with floor tiles with thick MDF Board / Bison Board.
- Providing and fixing in position gypsum board false ceiling/metal false ceiling with approved G.I/Al/Steel Frame work and hangers including openings for lights etc. to be framed with teak wood members of requisite section/size. The sidewalls should be covered with heat protected materials.
- Anti-termite treatment of the entire critical area.
- Cutting and chipping of existing floors: The existing floor shall be cut utilizing mechanical cutters and then chipped gently using chisel and hammer without causing any damages to existing structure. The operation shall be carried out after taking prior permission.
- Trench works: TRENCH may be required to be made for cables. The bed of the trench shall be truly and evenly dressed throughout. The bed of the trench has to be filled in with sand and brick. Enough care should be taken not to damage any existing pipes, wires, cables that comes in the way of trench. Cost of any damage done to the existing structure has to be borne by the vendor.
- Masonry works: Any brick work, if required, has to be done by the Prime Vendor. The bricks have to be of fine quality.
- Hardware and Metals: The hardware throughout shall be of high quality and ISI mark wherever possible. Fitting generally shall be brass oxidized, unless otherwise specified and shall be suitable for their intended purpose. Screws are to match the finish of the article to be fixed, and to be round or flat headed or counter sunk as required. Aluminum and stainless steel shall be of reputed manufacturer and suitable for its particular application.
- Doors and Locking: DC doors should be of minimum 5ft wide, 7ft high and 2 inch thickness, without doorsills, hinged to open outward or slide side-to-side, or be removable. Doors shall be fitted with locks and have either no centre posts or removable Centre posts to facilitate access for large equipment. Entry and Exit door of data Centre should be separate. Door frame should be Powder coated. Doors should be Fire-resistant steel minimum 180 minutes integrity.
- Fire proofing all surfaces: Existing walls of the data center shall be protected from fire by installation of the Fire Resistance Rated Gypsum Boards with a view to prevent any spread of fire.
- Galvanization: Galvanized coating for materials such as ceiling grids, raised floor supports, etc. should be electroplated galvanized. This is to avoid zinc whiskers or metallic contamination.

- Plumbing Work: No water or drain piping should be routed through the data Centre that is not associated with data Centre equipment. Water or drain piping, if required, should be routed within the data Centre and should be either encased or provided with a leak protection jacket. A leak detection system should be provided to notify building operators in the event of a water leak.
- Drainage Piping: Provision for floor drain(s) within the computer room to collect and drain the pre-action sprinkler water after a discharge has to be made. The floor drain(s) should receive the condensate drain water and humidifier flush water from the computer room air conditioning units. Piping material should be type –L copper with soldered joints Combustible piping should not be used. 4.43 Pest Control: The treatment shall be carried out generally in accordance with the stipulation laid down procedure as per IS: 6313 (Part II)-1971 Part II Preconstructional chemical treatment measures I (code of practice for Anti-termite measures in building part II pre constructional chemical.
- Pest Control: Necessary pest control measures and treatment shall be carried out in accordance with industry best practice/standards at the time of site preparation so as to make sure the DC environment pest free and the treatment effectively fights the pest.
- Circuits fed from distinct sources of supply or from different distribution boards or M.C.Bs shall not be bunched in one conduit. In large areas and other situations where the load is divided between two or three phases, no two single-phase switches connected to difference phase shall be mounted at appropriate distance.
- All splicing shall be done by means of terminal blocks or connectors and no twisting connection between conductors shall be allowed.
- Electrical cabling: Cable ducts should be of such dimension that the cables laid in it do not touch one another. If found necessary the cable shall be fixed with clamps on the walls of the duct. Cables shall be laid on the walls/on the trays as required using suitable clamping/ fixing arrangement as required. Cables shall be neatly arranged on the trays in such manner that a criss-crossing is avoided and final take off to switch gear is easily facilitated.
- Neoprene rubber gaskets shall be provided between the covers and channel to satisfy the operating conditions imposed by temperature weathering, durability etc.
- Necessary earthing arrangement shall be made alongside the rising mains enclosure by Mean of a GI strip of adequate size bolted to each section and shall be earthed at both ends. The rising mains enclosure shall be bolted type.
- Electrical Lights: It is provisioned to have energy efficient Lights (preferably LED) in Date Centre to enable low power consumption and reduce cooling loads in the critical areas of data Centre.
- The electrical cabling Work shall include the following.
    - Power cabling
    - Power Supply Distribution Board
    - Power Cabling for Utility component and Utility Points etc.

- Earthing
- Cabling from Power Supply Distribution Board to racks

- Specifications for Electrical Cabling: Fire retardant cables of rated capacity exceeding the power requirement of fully blown configuration of the existing and proposed component to be used. Multiple power points (2 points) from redundant source (UPS) to be provided at each server racks. All materials used shall conform to IS standards as per industry practice.
- Drawing of Conductors: The drawing Aluminum / Copper conductor wires shall be executed with due regards to all required precautions while drawing insulated wires in to conduits. Care shall be taken to avoid scratches and kinks, which cause breakages.
- Joints: All joints shall be made at main switches, distribution boards, socket outlets, lighting outlets and switch boxes only. No joints shall be made inside conduits and junctions boxes. Conductors shall be continuous from outlet to outlet.
- Load Balancing: Balancing of circuits in three-phase installation shall be planned before the commencement of wiring.
- Color Code of the Conductors: Color code shall be maintained as black for neutral and green for earth (or bare earth).
- Fixing of the Conduits: Conduits junction boxes shall be kept in position and proper holdfasts shall be provided. Conduits shall be so arranged as to facilitate easy drawing of the wires through them. Adequate junction boxes of approved shape & size shall be provided.
- Switch-Outlet Boxes and Junction Boxes: All boxes shall conform to prevailing Indian Standards. The cover plates shall be of best quality Hylam sheets or ISI grade Urea Formaldehyde Thermosetting insulating material, which should be mechanically strong and fire retardant. Proper support shall be provided to the outer boxes to fix the cover plates of switches as required. Separate screwed earth terminals shall be provided inside the box for earthing purpose.
- Inspection Boxes – Rust proof inspection boxes of required size having smooth external and internal Finish shall be provided to permit periodical inspection and to facilitate removal and replacement of wires when required.

16.1 Painting

- Fire retardant paint of pre-approved make and shade to give an even shade over a primer coat after applying painting putty to level and plumb and finishing with 2 coats of fire retardant paint. Base coating shall be as per manufacturer's recommendation for coverage of paint.
- For all vertical Plain surface.
- For fireline gyp-board ceiling.
- POP punning over cement plaster in perfect line and level with thickness of 10 – 12 mm including making good chases, grooves, edge banding, scaffolding pockets etc.

- Fire retardant coating on all vertical surfaces, furniture etc. as per manufacturer's specification

16.2 PVC Conduit

#	Description	Compliance (Yes/No)	Remarks, if any
1.	The conduits for all systems shall be high impact rigid PVC heavy-duty type and shall comply with I.E.E regulations for non-metallic conduit 1.6 mm thick as per IS 9537/1983.		
2.	All sections of conduit and relevant boxes shall be properly cleaned and glued using appropriate epoxy resin glue and the proper connecting pieces, like conduit fittings such as Mild Steel and should be so installed that they can remain accessible for existing cable or the installing of the additional cables.		
3.	No conduit less than 20mm external diameter shall be used. Conduit runs shall be so arranged that the cables connected to separate main circuits shall be enclosed in separate conduits, and that all lead and return wire of each circuit shall be run to the same circuit.		
4.	All conduits shall be smooth in bore, true in size and all ends where conduits are cut shall be carefully made true and all sharp edges trimmed. All joints between lengths of conduit or between conduit and fittings boxes shall be pushed firmly together and glued properly.		
5.	Cables shall not be drawn into conduits until the conduit system is erected, firmly fixed and cleaned out. Not more than two right angle bends or the equivalent shall be permitted between draw and junction boxes. Bending radius shall comply with I.E.E regulations for PVC pipes.		
6.	Conduit concealed in the ceiling slab shall run parallel to walls and beams and conduit concealed in the walls shall run vertical or horizontal.		
7.	The chase in the wall required in the recessed conduit system shall be neatly made and shall be of angle dimensions to permit the conduit to be fixed in the manner desired. Conduit in chase shall be hold by steel hooks of approved design of 60cm centre the chases shall be filled up neatly after erection of conduit and brought to the original finish of the wall with cement concrete mixture 1:3:6 using 6mm thick stone aggregate and course sand.		

16.3 Wiring

#	Description	Bidder Compliance (Yes/No)
1.	PVC insulated copper conductor cable shall be used for sub circuit runs from the distribution boards to the points and shall be pulled into conduits. They shall be stranded copper conductors with thermoplastic insulation of 650 / 1100 volts grade. Colour code for wiring shall be followed.	
2.	Looping system of wring shall be used, wires shall not be jointed. No reduction of strands is permitted at terminations.	
3.	Wherever wiring is run through trunking or raceways, the wires emerging from individual distributions shall be bunched together with cable straps at required regular intervals. Identification ferrules indication the circuit and D.B. number shall be used for sub main, sub circuit wiring the ferrules shall be provided at both end of each sub main and sub-circuit.	
4.	Where, single phase circuits are supplied from a three phase and a neutral distribution board, no conduit shall contain wiring fed from more than one phase in any one room in the premises, where all or part of the electrical load consists of lights, fans and/or other single phase current consuming devices, all shall be connected to the same phase of the supply.	
5.	Circuits fed from distinct sources of supply or from different distribution boards or M.C.B.s shall not be bunched in one conduit. In large areas and other situations where the load is divided between two or three phases, no two single-phase switches connected to difference phase shall be mounted within two meters of each other.	
6.	All splicing shall be done by means of terminal blocks or connectors and no twisting connection between conductors shall be allowed.	
7.	Metal clad sockets shall be of die cast non-corroding zinc alloy and deeply recessed contact tubes. Visible scraping type earth terminal shall be provided. Socket shall have push on protective cap.	
8.	All power sockets shall be piano type with associate's switch of same capacity. Switch and socket shall be enclosed in a M. S. sheet steel enclosure with the operating knob projecting. Entire assembly shall be suitable for wall mounting with Bakelite be connected on the live wire and neutrals of each circuit shall be continuous everywhere having no fuse or switch installed in the line excepting at the main panels and boards. Each power plug shall be connected to each separate and individual circuit unless specified otherwise. The power wiring shall be kept separate and distinct from lighting and fan	

#	Description	Bidder Compliance (Yes/No)
	wiring. Switch and socket for light and power shall be separate units and not combined one.	
9.	Balancing of circuits in three phases installed shall be arranged before installation is taken up. Unless otherwise specified not more than ten light points shall be grouped on one circuit and the load per circuit shall not exceed 1000 watts.	

16.4 Cable Work

#	Description	Compliance (Yes/No)	Remarks, if any
1.	Cable ducts should be of such dimension that the cables laid in it do not touch one another. If found necessary the cable shall be fixed with clamps on the walls of the duct. Cables shall be laid on the walls/on the trays as required using suitable clamping/ fixing arrangement as required. Cables shall be neatly arranged on the trays in such manner that a criss-crossing is avoided and final take off to switch gear is easily facilitated.		
2.	All cables will be identified close to their termination point by cable number as per circuit schedule. Cable numbers will be punched on 2mm thick aluminium strips and securely fastened to the. In case of control cables all covers shall be identified by their wire numbers by means of PVC ferrules. For trip circuit identification additional red ferrules are to be used only in the switch gear / control panels, cables shall be supported so as to prevent appreciable sagging. In general distance between supports shall not be greater than 600mm for horizontal run and 750mm for vertical run.		
3.	Each section of the rising mains shall be provided with suitable wall straps so that same the can be mounted on the wall.		
4.	Whenever the rising mains pass through the floor they shall be provided with a built-in fire proof barrier so that this barrier restricts the spread of fire through the rising mains from one section to the other adjacent section. Neoprene rubber gaskets shall be provided between the covers and channel to satisfy the operating conditions imposed by temperature weathering, durability etc.		

#	Description	Compliance (Yes/No)	Remarks, if any
5.	Necessary earthling arrangement shall be made alongside the rising mains enclosure by Mean of a GI strip of adequate size bolted to each section and shall be earthed at both ends. The rising mains enclosure shall be bolted type.		
6.	The space between data and power cabling should be as per standards and there should not be any criss-cross wiring of the two, in order to avoid any interference, or corruption of data.		

16.5 Earthing

All electrical components (whichever supplied as part of this RFP) are to be earthen by connecting two earth tapes from the frame of the component ring and will be connected via several earth electrodes. The cable arm will be earthen through the cable glands. Earthling shall be in conformity with provision of rules 32, 61, 62, 67 & 68 of Indian Electricity rules 1956 and as per IS-3043. The entire applicable IT infrastructure in the Control Rooms shall be earthed.

- Earthing should be done for the entire power system and provisioning should be there to earth UPS systems, Power distribution units, AC units etc. so as to avoid a ground differential. Necessary space will be required to prepare the earthing pits.
- All metallic objects on the premises that are likely to be energized by electric currents should be effectively grounded.
- The connection to the earth or the electrode system should have sufficient low resistance in the range of 0 to 25 ohm to ensure prompt operation of respective protective devices in event of a ground fault, to provide the required safety from an electric shock to personnel & protect the equipment from voltage gradients which are likely to damage the equipment.
- The neutral to earth voltage in all electrical points should be less than 0.5 volts.
- The Earth resistance shall be automatically measured on an online basis at a pre-configured interval and corrective action should be initiated based on the observation. The automatic Earthing measurements should be available on the UPS panel itself in the UPS room.
- There should be enough space between data and power cabling and there should not be any cross wiring of the two, in order to avoid any interference, or corruption of data.
- The earth connections shall be properly made .A small copper loop to bridge the top cover of the transformer and the tank shall be provided to avoid earth fault current passing through fastened bolts, when there is a lighting surge, high voltage surge or failure of bushings.

- A complete copper mesh earthing grid needs to be installed for the server farm area, every rack need to be connected to this earthing grid. A separate earthing pit need to be in place for this copper mesh.
- Provide separate Earthing pits for Servers, UPS & Generators as per the standards.

16.6 Fire Detection and Alarm System

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	**System Description** Solution should be an automatic zone single loop addressable fire detection and alarm system and must be installed as per NFPA 72 guidelines.		
2.	It should support Detection by means of automatic heat and smoke detectors located throughout the Control Room (ceiling, false floor and other appropriate areas where fire can take place) with break glass units on escape routes and exits.		
3.	**Control and Indicating Component** All controls of the system shall be via the control panel only.		
4.	The system status shall be made available via panel mounted LEDs and a backlit alphanumeric liquid crystal display.		
5.	The system should include a detection verification feature. The user shall have the option to action a time response to a fire condition. This time shall be programmable up to 10 minutes to allow for investigation of the fire condition before activating alarm outputs. The operation of a manual call point shall override any verify command		
6.	**System should support following Manual Controls** • Start sounders • Silence sounders • Reset system • Cancel fault buzzer • Display test • Delay sounder operation • Verify fire condition • Disable loop		
7.	**Smoke detectors:**		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	Smoke detectors shall be of the optical or ionisation type. The detectors shall have twin LEDs to indicate the device has operated and shall fit a common addressable base.		
8.	**Heat detectors** Heat detectors shall be of the fixed temperature (50° C) or rate of temperature rise type with a fixed temperature operating point.		
9.	The detectors shall have a single LED to indicate the device has operated and shall fit a common addressable base.		
10.	**Addressable detector bases** All bases shall be compatible with the type of detector heads fitted and the control system component used. Each base shall comprise all necessary electronics including a short circuit isolator.		
11.	Detector bases shall fit onto an industry standard conduit box		
12.	**Audible Alarms** Electronic sounders shall be coloured red with adjustable sound outputs and at least 3 sound signals. The sounders should be suitable for operation with a 24V DC supply providing a sound output of at least 100dBA at 1 meter. The sounder frequency shall be in the range of 500Hz to 1000Hz.		
13.	**Commissioning** The fire detection and alarm system will be programmable and configurable via an alpha numeric keypad on the control panel.		
14.	**Regulatory Requirements** National Electrical Code (NEC) Factory Mutual Local Authority having Jurisdiction		
15.	Specify the proposed Make		
16.	Specify the proposed Model No		

16.7 Aspirating Smoke Detector System

This specifications covers the requirements of design, supply of materials, installation, testing and commissioning of Aspirating Smoke Detection System. The system shall include all equipment's,

appliances and labour necessary to install the system, complete with high sensitive LASER-based Smoke Detectors with aspirators connected to network of sampling pipes

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	**Codes and standards** The entire installation shall be installed to comply one or more of the following codes and standards • NFPA Standards, US • British Standards, BS 5839 part :1		
2.	**Approvals** All the equipment's shall be tested, approved by any one or more: • LPCB (Loss Prevention Certification Board), UK • FM Approved for hazardous locations Class 1,Div 2 • UL (Underwriters Laboratories Inc.), U • ULC (Underwriters Laboratories Canada), Canada • Vds (Verband der Sachversicherer e.V), Germany		
	Design Requirements		
3.	The System shall consist of a high sensitive LASER-based smoke detector, aspirator, and filter.		
4.	It shall have a display featuring LEDs and Reset/Isolate button. The system shall be configured by a programmer that is either integral to the system, portable or PC based		
5.	The system shall allow programming of: • Multiple Smoke Threshold Alarm Levels. • Time Delays. • Faults including airflow, detector, power, filter block and network as well as an indication of the urgency of the fault. • Configurable relay outputs for remote indication of alarm and fault Conditions.		
6.	It shall consist of an air sampling pipe network to transport air to the detection system, supported		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	by calculations from a computer-based design modelling tool.		
7.	Optional equipment may include intelligent remote displays and/or a high level interface with the building fire alarm system, or a dedicated System Management graphics package.		
8.	Shall provide very early smoke detection and provide multiple output levels corresponding to Alert, Action, Fire 1 & 2. These levels shall be programmable and shall be able to set sensitivities ranging from 0.025 – 20% obscuration / meter		
	Display & Detector Assembly		
9.	The detector will be provided with LED indicators.		
10.	Each Detector shall provide the following features: Alert, Alarm, Fire 1 and Fire 2 corresponding to the alarm thresholds of the detector/Smoke Dial display represents the level of smoke present, Fault Indicator, Disabled indicator		
11.	**Sampling Pipe** The pipe shall be identified as Aspirating Smoke Detector Pipe along its entire length at regular intervals not exceeding the manufacturer's recommendation or that of local codes and standards.		
12.	**Installation** **The SI shall install the system in accordance with the manufacturer's recommendation**. • Where false ceilings are available, the sampling pipe shall be installed above the ceiling, and Capillary Sampling Points shall be installed on the ceiling and connected by means of a capillary tube.		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	• Air Sampling Piping network shall be laid as per the approved pipe layout. Pipe work calculations shall be submitted with the proposed pipe layout design for approval. • The bidder shall submit computer generated software calculations for design of aspirating pipe network, on award of the contract.		
13.	Specify the proposed Make		
14.	Specify the proposed Model No		

16.8 Water leak detection System

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	**Water leak detection System** Water leak detection System should be designed to protect the Air-conditioned premises and to alert the personnel about the leak in the AC systems. The system should be capable of interfacing to Water leak detection sensors, condensation sensors & I/O modules.		
2.	Events should be clearly reported on LCD/LED display with full English language description of the nature of the fault in the panel. The successful bidder should make detailed working drawings and coordinate them with other agencies at site. Water Leak Detection systems should be integrated with Data center Management System.		
3.	The Water leak detection system should comprise of Tape Sensors, Water Leak detection modules, Condensation detectors, I/O modules and sounders all connected to a Control Panel		
4.	**CONTROL PANEL** The control panel should be computerized 4/8/12 zone multiplex controller with a facility to add on dialer and speech processor. The system should be programmed, armed or disarmed through a control key pad. The control key pad should have a LCD display for viewing various events. The code to arm or disarm the system should be changed only by entering a master code.		
	The system should have 4/8/12 zones and all the detectors should be connected through a 2 core cable. Each area of the premises should be divided into		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	specific zones such that any zone should be isolated by the user if required.		
5.	The entire system should be backed up by a maintenance free rechargeable battery to take care of system's power requirements whenever power fails		
6.	The system should be totally tamper proof and should activate an alarm if the control panel is opened, the sensors tampered with or if the system cables are cut even in the disarmed state.		
7.	The system should be able to log 500 events.		
8.	The Detectors, I/O Modules, Remote Keypads and other Devices should be connected to a system on a single 2/4/6 Core Cable Bus to avoid individual cabling of zones.		
9.	The system should have a Buffer memory of minimum 250 events and log each event with exact date and time.		
10.	The controller should have a Serial Port for connecting to a computer		
11.	The controller should work on 230 AC power supply and it should also have a built in battery backup.		
12.	The memory inside the controller should be backed up by a lithium battery. The controller should work effectively over a temperature range of 0 Deg. C to + 55 Deg. C. and 0 to 90% of Humidity.		
13.	**WATER LEAK DETECTION SENSOR** Water Leak Detection sensors should be able to mount in DIN rails, inside AHU's, power distribution units or other equipment where localized leak detection is required. The detectors should be resistant to oxidation and erosion. The detector should have relay output for connection to the controller. LED alarm indication should also be provided. The detectors should operate in AC or DC supply.		
14.	**TAPE SENSORS** Tape sensors are used to detect water leaks usually under floors. Tape sensors for use with water leak detectors should be covered with plastic netting to prevent short circuits when used in metal trays or conduits and enables the tape to be folded at right angles to allow easy routing		
15.	**HOOTER / SOUNDER** The hooter / sounder should give audible alarm when any sensor operates. It should be complete with electronic oscillations, magnetic coil (sound coil) and accessories ready for mounting (fixing). The sound output from the Hooter should not be less than 85 decibels at the source point.		
16.	Specify the proposed Make		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
17.	Specify the proposed Model No		

16.9 Access Control System

The Access Control System shall be deployed with the objective of allowing entry and exit to and from the premises to authorized personnel only. The system deployed shall be based on Biometric Technology. An access control system consisting of a central PC, intelligent controllers, power supplies and all associated accessories is required to make a fully operational on line access control system. Access control shall be provided for entry / exit doors. These doors shall be provided with electric locks, and shall operate on fail-safe principle. The lock shall remain unlocked in the event of a fire alarm or in the event of a power failure. The fire alarm supplier shall make potential free contacts available for releasing the locks in a fire condition especially for staircase and main doors. Entry to the restricted area shall be by showing a proximity card near the reader and biometric authentication and exit shall be using a push button installed in the secure area. The system shall monitor the status of the doors through magnetic reed contacts. The proximity cards shall be of industry standard and will be warranted against defects in materials and workmanship. Total 100 proximity card to be provided as part of the solution. The system should be designed and implemented to provide following functionality:

- Controlled Entries to defined access points
- Controlled exits from defined access points
- Controlled entries and exits for visitors
- Configurable system for user defined access policy for each access point
- Record, report and archive each and every activity (permission granted and / or rejected) for each access point.
- User defined reporting and log formats
- Fail safe operation in case of no-power condition and abnormal condition such as fire, theft, intrusion, loss of access control, etc.
- Day, Date, Time and duration based access rights should be user configurable for each access point and for each user.
- One user can have different policy / access rights for different access points.

16.10 Rodent Repellent

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Solution should have Digital Controller with necessary transducer		
2.	Solution should support Operating Frequency Above 20 KHz (Variable)		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
3.	Controller should work in Auto & Manual Modes of Operation		
4.	Controller should have support for Third Party Data center Management System integration		
5.	Controller should have minimum 5 Wave Speed Options		
6.	Controller should have minimum 4 Wave Density Options		
7.	Controller should have minimum 4 Frequency Bands		
8.	Solution should support Cable Connection between Controller and Transducers either via Dedicated or via Looping wiring.		
9.	Solution should support minimum 20 nos of Transducers		
10.	Transducer Sound Output should be 50 db to 110 db		
11.	Power Supply : 230 V AC 50 Hz		
12.	Power output : 800 mW per transducer		
13.	Mounting : Wall / Table Mounting		
14.	Solution should be provided with minimum 3 years of comprehensive warranty & support for all parts/controller/tranducers/software.		
15.	Specify the proposed Make		
16.	Specify the proposed Model No		

16.11 Fire Suppression System

The SI shall design, install, and configure the Fire Suppression System for the Data Center area. The Fire Suppression System shall have a clean agent fire suppression system cylinder, seamless cylinders, discharge hose, fire detectors and panels, and all other accessories required to provide a complete operational system, meeting applicable requirements of NFPA 2001 Clean Agent Fire Extinguishing Systems, NFPA 70 National Electric Code, NFPA 72 National Fire Alarm Code, or ISO standards. These standards shall be used to ensure the performance as a system with UL/FM approvals and installed in compliance with all applicable requirements of the local codes and standards.

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	**Kyoto Protocols** • The clean agent system considered for total flooding application shall be in compliance with the provisions of Kyoto Protocol.		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	• Care shall be taken that none of the greenhouse gases identified in the Kyoto Protocol is used for fire suppression application		
2.	Zero-ozone depleting potential		
3.	Global-warming potential not exceeding one		
4.	Atmospheric lifetime not exceeding one week		
5.	The clean agent fire suppression system with FK-5-1-12 and inert gas-based systems are accepted as a replacement of HCFC and HFC in accordance with Kyoto Protocol.		
6.	The clean agent considered for the suppression system shall be suitable for occupied areas with No Observable Adverse Effect Level of 10% as compared to the design concentration to ensure high safety margin for the human who might be present in the hazard area.		
7.	The minimum design standards shall be in accordance with NFPA 2001, 2004 edition or latest revisions.		
8.	Care shall be given to ensure early warning detection system with minimum sensitivity of 0.03% per foot obscuration in accordance with NFPA 318 and NFPA 72 to ensure a very early warning signal to allow investigation of the incipient fire with significant time before the other detectors activate the fire suppression system automatically.		
9.	All system components furnished and installed shall be warranted against defects in design, materials, and workmanship for the full warranty period, which is standard with the manufacturer, but in no case less than operational readiness closure period.		
10.	Fire suppression system shall deploy NOVEC-based gas suppression systems with cross-zoned detector systems for all locations. These detectors shall be arranged in a manner such that they activate the suppression system in zones to cater to only the affected area.		
11.	Illuminated signs indicating the location of the extinguishers shall be placed high enough to be seen over tall cabinets and racks across the room. A linear heat detection cable shall be placed along all wire pathways in the ceiling. This cable shall not directly trigger the suppression system; rather, it shall prompt the control system to sound an alarm.		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
12.	The SI shall give a certificate stating that their NOVEC system is approved by UL/FM/VdS/LPC/CNPP for use with seamless steel cylinders, including component and system approval.		
13.	The SI shall also provide a letter that the OEM has NOVEC flow calculation software suitable for seamless steel cylinder bided for in accordance with the List of Major Components and that such software shall be type approved by UL/FM/VdS/LPC/CNPP.		
14.	The storage container offered shall be of seamless type, meant for exclusive use in NOVEC systems, with UL/FM/VdS/LPC/CNPP-component approval. Welded cylinders are not permitted.		
15.	The NOVEC valve shall be differential pressure design and shall not require an explosive- or detonation-type consumable device to operate it.		
16.	The NOVEC valve operating actuators shall be of electric (solenoid) type and shall be capable of resetting manually. The valve shall be capable of being functionally tested for periodic servicing requirements and without any need to replace consumable parts.		
17.	The individual NOVEC bank shall also be fitted with a manual mechanism operating facility that shall provide actuation in case of electric failure.		
18.	The system flow calculation is to be carried out on certified software, suitable for the seamless steel cylinder being offered for this project. Such system flow calculations shall be also approved by UL/FM/VdS/LPC/CNPP.		
19.	The system shall utilize 42-bar/high-pressure (600 psi) technology that allows for a higher capacity to overcome frictional losses, higher distances of the agent flow, and better agent penetration in enclosed electronic equipment such as server racks and electrical panels.		
20.	The designer shall study and address possible fire hazards within the protected volume at the design stage. The delivery of the NOVEC system shall provide for the highest degree of protection and minimum extinguishing time. The design shall be strictly in accordance with NFPA standard NFPA 2001.		
21.	The suppression system shall provide for a high-speed release of NOVEC-based on the concept of total flooding protection for enclosed areas. A		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	uniform extinguishing concentration shall be 7% (v/v) of NOVEC for 21 degrees Celsius or higher as recommended by the manufacturer.		
22.	The system discharge time shall be 10 seconds or less, in accordance with NFPA standard 2001.		
23.	Sub-floor and the ceiling void to be included in the protected volume.		
24.	The NOVEC systems to be supplied by The SI shall satisfy all the requirements of the authority having jurisdiction over the location of the protected area and shall be in accordance with the OEM's product design criteria.		
25.	The detection and control system that shall be used to trigger the NOVEC suppression shall employ cross-zoning of photoelectric and ionization smoke detectors. A single detector activated in one zone shall cause an alarm signal to be generated. Another detector activated in the second zone shall generate a pre-discharge signal and start the pre-discharge condition.		
26.	The discharge nozzles shall be located in the protected volume in compliance to the limitation with regard to the spacing, floor and ceiling covering. The nozzle locations shall be such that the uniform design concentration will be established in all parts of the protected volumes. The final number of the discharge nozzles shall be according to the OEM's certified software, which shall also be approved by third-party inspection and certified such as UL/FM/VdS/LPC/CNPP.		
27.	The cylinder shall be equipped with differential pressure valves and no replacement parts shall be necessary to recharge the NOVEC containers.		
28.	NOVEC shall be discharged through the operation of an electric solenoid-operated device or pneumatically operated device, which releases the agent through a differential pressure valve.		
29.	The NOVEC discharge shall be activated by an output directly from the NOVEC gas release control panel, which will activate the solenoid valve. NOVEC agent is stored in the container as a liquid. To aid release and more effective distribution, the container shall be super pressurized to 600 psi (g) at 21°C with dry Nitrogen.		
30.	The releasing device shall be easily removable from the cylinder without emptying the cylinder. While removing from cylinder, the releasing device		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	shall be capable of being operated with no replacement of parts required after this operation.		
31.	Upon discharge of the system, no parts shall require replacement other than gasket, lubricants, and the NOVEC agent. Systems requiring replacement of disks, squibs, or any other parts that add to the recharge cost will not be acceptable.		
32.	The manual release device fitted on the NOVEC cylinders shall be the manual-lever type and a faceplate with clear instruction of how to mechanically activate the system. In all cases, NOVEC cylinders shall be fitted with a manual mechanical operating facility that requires two-action actuation to prevent accidental actuation.		
33.	NOVEC storage cylinder valve shall be provided with a safety rupture disc. An increase in internal pressure due to high temperature shall rupture the safety disc and allow the content to vent before the rupture pressure of the container is reached. The contents shall not be vented through the discharge piping and nozzles.		
34.	NOVEC containers shall be equipped with a pressure gauge to display internal pressure.		
35.	Brass Discharge nozzles shall be used to disperse the NOVEC. The nozzles shall be brass with female threads and available in sizes as advised by the OEM system manufacturer. Each size shall come in 180° and 360° dispersion patterns.		
36.	All the major components of the NOVEC system such as the cylinder, valves and releasing devices, nozzles, and all accessories shall be supplied by one single manufacturer under the same brand name.		
37.	Manual gas discharge stations and manual abort stations, in conformance with the requirements of NFPA 2001, shall be provided.		
38.	Release of NOVEC agent shall be accomplished by an electrical output from the FM-200 gas release panel to the solenoid valve and shall be in accordance with the requirements set forth in the current edition of NFPA 2001.		
39.	A high-sensitivity smoke-detection system shall provide an early warning of fire in its incipient stage, analyse the risk, and set off an alarm and actions appropriate to the risk. The system shall include, but not be limited to, a display control panel, detector assembly, and properly designed sampling pipe network		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
40.	Specify the proposed Make		
41.	Specify the proposed Model No		

16.12Precision Air Conditioning

The Data Centres Area shall be provided with fully redundant, microprocessor-based, gas-based, Precision Air-Conditioning system. Cool air feed to the Data Centres shall be bottom-charged or downward flow type using the raised floor as supply plenum through perforated aluminium tiles for airflow distribution. The return airflow shall be through the false ceiling to cater to the natural upwardly movement of hot air. Cooling shall be done by the Precision Air-Conditioning system only. Forced cooling using fans on the false floor is not acceptable. Air conditioning shall be capable of providing sensible cooling capacities at the design ambient temperature and humidity with adequate airflow. The Precision Air-Conditioning system shall be capable to be integrated with the Data center Management System for effective monitoring.

The SI shall assess, design, supply, transport, store, unpack, erect, and test the successful commissioning and satisfactory completion of trial operations of the Precision Air-Conditioning system for the Data Centres. The SI shall follow ASHRAE Standard for the HVAC and Ducting. The SI shall be responsible for:

- Connecting the indoor unit with the mains electrical point
- Connecting indoor and outdoor units mechanically (with 18-gauge-hard copper piping).
- Connecting indoor and outdoor unit electrically
- Nitrogen pressure testing, triple vacuum, and final gas charging
- Connecting the humidifier feed line with the point provided
- Connecting the drain line with the point provided
- Commissioning and handing over the unit to the customer
- Operation and routine maintenance training for up to two persons nominated by the CLIENT while commissioning the units at site

1. PAC Make, Capacity & quantity

The SI will be required to provide 4 number of PACs of Uniflair/Stulz/Emerson make each of 10 tonne capacity with 5 years comprehensive onsite warranty and support. The warranty and support will include all parts including the gas filling during the contract period. SI will be required to carry out necessary preventive and breakdown maintenance including periodic service on a regular basis (atleast once a quarter) to ensure maximum uptime.

2. Temperature Requirements

The environment inside the Primary and Secondary Data Centres shall be continuously maintained between 20°C to 25 degrees Celsius. The temperature and humidity shall be controlled at desired levels. The necessary alarms for variation in temperatures shall be monitored on a 24/7

basis and logged for providing reports.

3. Indicating Lamps

- Indicating lamps assembly shall be screw type with built in resistor having non-fading colour lens. LED type lamps are required.
- Wiring for Remote ON, OFF, TRIP indicating lamps is required.
- ON indicating lamp: Red
- OFF indicating lamp: Green
- TRIP indicating lamp: Amber
- PHASE indicating lamp: Red, Yellow, Blue
- TRIP circuit healthy lamp: Milky

4. Relative Humidity (RH) requirements

Ambient RH levels shall be maintained at 50% ± 5 non-condensing. Humidity sensors shall be deployed. The necessary alarms for variation in RH shall be monitored on a 24/7 basis and logged for providing reports.

5. Temperature and Relative Humidity Recorders

Temperature and relative humidity recorders shall be deployed for recording events of multiple locations within the Data Centres. Records of events for the past 7 days shall be recorded and presentable whenever required. Sensors shall be located at various locations within the Data Centres to record temperature and humidity automatically.

6. Air Quality Levels

The Data Centres shall be kept at highest level of cleanliness to eliminate the impact of air quality on the hardware and other critical devices. The Data Centres shall be deployed with efficient air filters to eliminate and arrest the possibility of airborne particulate matter which may cause air-flow clogging, gumming up of components, causing short-circuits, or blocking the function of moving parts.

7. Additional Points

- The precision air conditioners shall be capable of maintaining a temperature range of 23 degrees Celsius with a maximum of ±1 degree variation and relative humidity of 50% with a maximum variation of ±5%.
- The precision air conditioners shall have two (2) independent refrigeration circuits, each comprised of one scroll compressor, refrigeration circuit and condenser, and dual blowers for flexibility of operations and better redundancy.

- The unit casing shall be in double-skin construction for longer life of the unit and low noise level.
- For close control of the Data Centres temperature and relative humidity (RH) environment conditions, the controller shall have proportional integration and differential (PID).
- The precision unit shall be air-cooled, refrigerant-based system to avoid chilled water in critical space.
- The internal rack layout design shall follow the cold aisle and hot aisle concept as recommended by ASHRAE.
- The refrigerant used shall be environmentally friendly HFC, R-407-C or equivalent in view of the long-term usage of the Data Centres equipment as well as the availability of spares and refrigerant.
- The system shall include fully deployed Dynamic Smart Cooling with auto sequencing and auto power management features to switch the air conditioner on and off automatically and alternately as per preset/configuration for effective usage.
- Thermal and computational fluid dynamics (CFD) analysis diagrams shall be provided
- The fan section shall be designed for an external static pressure of 25 Pa. The fans shall be located downstream of the evaporator coil and be of the electronically commuted, backward, curved, centrifugal type, double-width, double-inlet, and statically and dynamically balanced. Each fan shall be direct-driven by a high efficiency direct current (DC) motor.
- The evaporator coil shall be A-shape coil for down flow, incorporating draw-through air design for uniform air distribution. The coil shall be constructed of rifled bore copper tubes and louvered aluminium fins with the frame and drip tray fabricated from heavy gauge aluminium. Face area of coil shall be selected corresponding to air velocity not exceeding 2.5 m/sec.
- Dehumidification shall be achieved by either reducing effective coil area by solenoid valve arrangement or using the dew point method of control. Whenever dehumidification is required, the control system shall enable a solenoid valve to limit the exchange surface of the evaporating coil, thereby providing a lower evaporating temperature.
- The humidifier and heaters shall be built-in features in each machine individually. Humidification shall be provided by boiling water in a high-temperature, polypropylene steam generator. The steam shall be distributed evenly into the bypass airstreams of the environment control system to ensure full integration of the water vapour into the supply air without condensation. The humidifier shall have an efficiency of not less the 1.3 kg/kw and be fitted with an auto-flush cycle activated on demand from the microprocessor control system. The humidifier shall be fully serviceable with replacement electrodes. Wastewater shall be flushed from the humidifier by the

initiation of the water supply solenoid water valve via a U-pipe overflow system. Drain solenoid valves shall not be used. A microprocessor shall control the humidification and heating through suitable sensors.

- **The following microprocessor controls features shall be displayed on the units:**

  a. Room temperature and humidity
     i. Supply fan working status
     ii. Compressor working status
     iii. Condenser fans working status
     iv. Electric heaters working status
     v. Humidifier working status
     vi. Manual/Auto unit status
     vii. Line voltage value

  b. Temperature set point
     i. Humidity set point
     ii. Working hours of main component i.e. compressors, fans, heater, humidifier.
     iii. Unit working hours
     iv. Current date and time
     v. Type of alarm (with automatic reset or block)
     vi. The last 10 intervened alarms

- **The microprocessor shall be able to perform following functions:**

  a. Testing of the working of display system
  b. Password for unit calibration values modification
  c. Automatic restart of program
  d. Cooling capacity control
  e. Compressor starting timer
  f. Humidifier capacity limitation
  g. Date and time of last 10 intervened alarm
  h. Start/Stop status storage
  i. Random starting of the unit.
  j. Outlet for the connection to remote system
  k. Temperature and humidity set point calibration
  l. Delay of general alarm activation
  m. Alarm calibration

- **Following alarms shall be displayed on screen of microprocessor unit:**

a. Air flow loss
b. Clogged filters
c. Compressor low pressure
d. Compressor high pressure
e. Smoke /ire
f. Humidifier low water level
g. High/Low room temperature
h. High/Low room humidity
i. Spare external alarms
j. Water under floor

- **The control system shall include the following settable features:**
  a. Unit identification number
  b. Start-up delay, cold start delay, and fan run on timers
  c. Sensor calibration
  d. Remote shutdown and general alarm management
  e. Compressor sequencing
  f. Return temperature control
  g. Choice of modulating output types
- **The unit shall incorporate the following protections:**
  a. Single phasing preventers
  b. Reverse phasing
  c. Phase misbalancing
  a. Phase failure
  b. Overload tripping (MPCB) of all components

16.13Datacentre Management System / Building Control System

The building management system shall be implemented for effective management, monitoring and Integration of various components like PAC, Access Control systems, fire detection system etc.

The BMS shall perform the following general functions including but not limited to:

- Building Management & Control
- Monitoring of all data center devices through a single portal/dashboard
- Data Collection & archival
- Alarm Event & Management

- Reports & MIS Generation

The scope of work shall include designing supplying and installing of Building management System. The work shall consist of integrating with various datacenter components with necessary software/hardware support for interfacing with other systems. It shall include laying of cabling duct, conduits and power supply etc., necessary for installation of the system with supply of appropriate type products as indicated in the specification. SI shall design & provide a datacenter management system that comprises the following general functional sub systems.

- PAC Management & Control
- Temperature monitoring and controls at all specified positions/locations
- Safety & Security Systems Integration
- Fire Alarm System Integration
- Aspirating Smoke Detector System Integration
- Access Control System integration
- Water leakage Detection System

17 Annexure V- Common guidelines regarding compliance of systems/equipment

1. The specifications mentioned for various IT / Non-IT components are indicative requirements and should be treated for benchmarking purpose only. SIs are required to undertake their own requirement analysis and may propose higher specifications that are better suited to the requirements.
2. In case of addition/update in number of license for the Integrated Command and Control Center (CCC) software, the SI is required to meet of technical specifications contained in the RFP and for the upward revisions and/or additions of licenses are required. The software licenses provided should be perpetual and at enterprise level such that SSCDL/SMC (or any entity as determined by SSCDL/SMC) can use the software products irrespective of number of users and number of field devices (Sensors, cameras, etc.) or number of cores of computer. Additions to users or filed devices or number cores will have to be done at no additional cost.
3. Any manufacturer and product name mentioned in the Tender should not be treated as a recommendation of the manufacturer / product.
4. None of the additional IT / Non-IT equipment's proposed by the SI 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 Tender, where-in the OEM will certify that the product is not end of life product & shall support for at least 6 years from the date of Bid Submission.
5. Technical Bid should be accompanied by OEM's product brochure / datasheet. SIs should provide complete make, model, part numbers and sub-part numbers for all equipment/software quoted, in the Technical Bid.
6. SIs 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.
7. All equipment, parts should be original and new.
8. The user interface of the system should be a user friendly Graphical User Interface (GUI).
9. Critical core components of the system should not have any requirements to have proprietary platforms and should conform to open standards.
10. For custom made modules, industry standards and norms should be adhered to for coding during application development to make debugging and maintenance easier. Object oriented programming methodology must be followed to facilitate sharing, componentizing and multiple-use of standard code. Before hosting the application, it shall be subjected to application security audit (by any of the CERTIN empanelled vendors) to ensure that the application is free from any vulnerability; and approved by the SSCDL/SMC.
11. All the Clients Machines / Servers shall support static assigned IP addresses or shall obtain IP addresses from a DNS/DHCP server.

12. The Successful SI should also propose the specifications of any additional servers / other hardware, if required for the system.
13. The indicative architecture of the system is given in this RFP. The Successful SI must provide the architecture of the solution it is proposing.
14. The system servers and software applications will be hosted in Data Centers as specified in the Bid. It is important that the entire set of Data Center equipment are in safe custody and have access from only the authorized personnel and should be in line with the requirements & SLAs defined in the Tender.
15. SI is required to ensure that there is no choking point / bottleneck anywhere in the system (end-to-end) and enforce performance and adherence to SLAs. SLA reports must be submitted as specified in the Bid without fail.
16. All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). SSCDL/SMC reserves the right to ask replacement of any hardware / software if it is not from a reputed brand and conforms to all the requirements specified in the tender documents.
17. System Integrator shall place orders on various OEMs directly and not through any sub-contractor / partner. All licenses should be in the name of the SSCDL/SMC.

18 Annexure VI- Approved List of Banks

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

1. Indian Bank
2. State Bank of India
3. Punjab National Bank
4. Bank of Baroda
5. Union Bank of India
6. Bank of India
7. Oriental Bank of Commerce
8. Canara Bank
9. Central Bank of India
10. Corporation Bank
11. Allahabad Bank
12. Indian Overseas Bank
13. Dena Bank
14. Syndicate Bank
15. Andhra Bank
16. Punjab & Sind Bank
17. Bank of Maharashtra
18. Vijaya Bank
19. United Bank of India
20. UCO Bank or Any other Nationalized Bank
21. IDBI
22. HDFC
23. AXIS BANK
24. ICICI Bank Limited
25. The Surat People's Co—operative Bank Ltd.
26. The Mehsana Urban Co-operative Bank Ltd.
27. Kotak Mahindra Bank
28. The Kalupur Commercial Co-operative Bank Ltd.
29. Rajkot Nagrik Sahkari Bank Ltd.
30. The Ahmedabad Mercantile Co-operative Bank Ltd.
31. Development Credit Bank Ltd.
32. YES Bank Ltd

19 Annexure VII- Master Service Agreement

(To be printed on Rs. 100/- Stamp Paper)

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

MASTER SERVICE AGREEMENT

FOR

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

This **AGREEMENT** is made at 115, Smart City Cell, Surat Municipal Corporation Head Quarter, Muglisara Main Road, Surat, Gujarat on this _____ day of _____, 2018.

BETWEEN

(1) Surat Smart City Development Limited, a company incorporated under the Companies Act, 2013 with CIN : U74999GJ2016PLC091579 and having its Registered Office at Smart City Cell Room NO. 115, Surat Municipal Corporation, Muglisara, Surat-395003 (hereinafter called **"the Company"** or **"the SPV"** or **"the Client"** or **"SSCDL"** which expression unless repugnant to the context therein, shall include its successors, administrators, executors and permitted assignees) of the **FIRST PART** represented by **CEO / Director / GM (IT) of the Company**

AND

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

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

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

And whereas M/s. _____., has submitted its proposal for "**Selection of Implementing Agency for Integrated Command and Control Center (ICCC) in Surat"**;

AND whereas SSCDL has selected M/s. _____., *as successful bidder and issued Letter of Intent No.* _____**2018** *to the successful bidder who in turn signed and returned the same as a token of acceptance of Letter of Intent*. As required, the System Integrator has furnished Security Deposit of Rs. _____ (_____) as Bank Guarantee No. _____, dated _____, _____for performance of the Project.

AND Whereas the SSCDL has adopted the System Integrator's tender for the project through the Project Committee established by the Board of Directors of the Company (hereinafter referred as

"The Project Management Committee") vide Resolution No._____ having of tender Amount of Rs. _____ Ps (_____)

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

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

1. Definitions

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

(a) "SSCDL" means Surat Smart City Development Limited;

(b) "SPV" means Special Purpose Vehicle

(c) "SCP" means Smart City Proposal

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

(e) "Systems Integrator" means M/s. _____, interchangeably referred to as "SI" in the contract; and

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

(g) *"Go Live or successful completion of implementation of the project" date means the 16th day after the date on which the proposed project stream becomes operational after successful conclusion of all acceptance tests to the satisfaction of SSCDL.*

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

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

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

2. Interpretation

The documents forming this Agreement are to be taken as mutually explanatory of one another. The following order shall govern the priority of documents constituting this Agreement, in the event of a conflict between various documents, the documents shall have priority in the following order:

- this Agreement;
- Scope of Services for the Systems Integrator (hereby annexed as **Annexure I**)
- Detail Commercial proposal of the Systems Integrator accepted by SSCDL (hereby annexed as **Annexure II**)
- SLA to be adhered by the Systems Integrator (hereby annexed as **Annexure III**)
- Clarification & Corrigendum Documents published by SSCDL subsequent to the RFP for this work (hereby annexed as **Annexure IV**)
- RFP Document of SSCDL for this work (hereby annexed as **Annexure V**)
- LoI issued by the SSCDL to the successful bidder (hereby annexed as **Annexure VI**); and
- Successful bidder's "Technical Proposal" and "Commercial Proposal" submitted in response to the RFP (hereby annexed as **Annexure VII**).

3. Term of the Agreement

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

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

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

4. Work Completion Timelines and Fees

The Work Completion timelines is as per section 8 of the RFP and subsequent Addendum & Corrigendum.

4.1 Payment Terms

The Payment terms is as per section 8 of the RFP and subsequent Addendum & Corrigendum.

4.2 Timeline for Project Execution

The Timeline for ICCC Project is as per section 8 of the RFP and subsequent Addendum & Corrigendum

5. Scope Extension

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

6. Service Level Agreement (SLA)

System Integrator is required to comply with the SLA as mentioned in Section 9 of the RFP and subsequent Addendum & corrigendum.

7. Insurance

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

i. Insurance during the Contract Period

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

- Hardware delivered and installed to the extent possible at the replacement value with Authority as beneficiary.
- Fire and allied natural calamities for the Central Control Centre limited to the scope of supply at replacement value with the Authority as beneficiary;
- System Integrator's all risk insurance with the Authority as co-beneficiary;
- Comprehensive third party liability insurance with the SMC/SSCDL as co-beneficiary;
- Workmen's compensation insurance with the SMC/SSCDL as co-beneficiary;
- Any other insurance that may be necessary to protect the System Integrator, its employees and the Project against loss, damage or destruction at replacement value including all Force Majeure Events that are insurable and not otherwise covered in items (a) to (e) with the Authority as beneficiary/co-beneficiary;

ii. Evidence of Insurance Cover

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

iii. Application of Insurance Proceeds

- All moneys received under insurance policies shall be promptly applied by the System Integrator towards repair or renovation or restoration or substitution of the Project or any hardware/equipment/device thereof which may have been damaged or required repair/modification.
- The System Integrator shall carry out such repair or renovation or restoration or substitution to the extent possible in such manner that the Project , or any part thereof, shall, after such repair or renovation or restoration or substitution be as far as possible in the same condition as they were before such damage or destruction, normal wear and tear excepted.
- For insurance policies where the Authority is the beneficiary and where it received the insurance proceeds, only such sums as are required from the insurance proceeds for restoration, repair and renovation of the Project .

iv. Validity of Insurance Cover

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

8. Use & Acquisition of Assets during the term

System Integrator shall

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

- keep all the tangible Assets in good & serviceable condition (reasonable wear & tear excepted) &/or the intangible Assets suitably upgraded subject to the relevant standards as stated in of the RFP to meet the SLAs mentioned in the contract & during the entire term of the Agreement.
- ensure that any instructions or manuals supplied by the manufacturer of the Assets for use of Assets & which are provided to the system integrator will be followed by the System integrator & any person who will be responsible for the use of the Asset;
- take such steps as may be recommended by the manufacturer of the Assets & notified to the system integrator or as may be necessary to use the Assets in a safe manner;
- provide a well-prepared documentation for users in the manual, a clear plan for training, education & hand holding the users & shall form part of hand holding phase until bringing up the users to use software solution with speed & efficiency;
- To the extent that the Assets are under the control of the system integrator, keep the Assets suitably housed & in conformity with any statutory requirements from time to time applicable to them,
- Provide and facilitate access to SSCDL or its nominated agencies & any persons duly authorized by him/her to enter any land or premises on which the Assets are for the time being sited so as to inspect the same, subject to any reasonable requirements;
- Not, knowingly or negligently use or permit any of the Assets to be used in contravention of any statutory provisions or regulation or in any way contrary to law;
- Use the Assets exclusively for the purpose of providing the Services as defined in the contract;
- Use the Assets only in accordance with the terms hereof & those contained in the SLAs;
- Maintain standard forms of comprehensive insurance including liability insurance, system & facility insurance & any other insurance for the Assets, data, software, etc in the joint names of SSCDL & the System Integrator, where SI shall be designated as the 'loss payee' in such insurance policies; SI shall be liable to pay premium for the insurance policy & shall ensure that each & every policy shall keep updated from time to time.
- Ensure the integration of the software with hardware to be installed and the current Assets in order to ensure the smooth operations of the entire solution architecture to provide efficient services to SSCDL of this Project in an efficient and speedy manner; &
- Obtain a sign off from SSCDL or its nominated agencies at each stage as is essential to close each of the above considerations.

Ownership of the Assets shall vest with SSCDL on Go Live of the project. Ownership of any asset, created during the contractual period after go Live, shall also vest with SSCDL upon creation of such asset. System Integrator shall not use SSCDL data to provide services for the benefit of any third party, as a service bureau or in any other manner. Six months prior to the expiry of the contract (of the respective work streams), there shall be joint inspection by a team of SSCDL and SI to assess the damages to the assets, if any. If damage to the assets is found

unacceptable to the SSCDL, then corresponding penalty/liquidated damages shall be recovered from SI from the fees payable.

9. Security and safety

- The System Integrator will comply with the directions issued from time to time by SSCDL and the standards related to the security and safety in so far as it applies to the provision of the Services.
- System Integrator shall also comply with the SSCDL Project's information technology security and standard policies in force from time to time as applicable.
- System Integrator shall use reasonable endeavors to report forthwith in writing to all the partners / contractors about the civil and criminal liabilities accruing due to by unauthorized access (including unauthorized persons who are employees of any Party) or interference with SSCDL's data, facilities or Confidential Information.
- The System Integrator shall upon reasonable request by SSCDL or his/her nominee(s) participate in regular meetings when safety and information technology security matters are reviewed.
- System Integrator and its partners / sub-contractors shall promptly report in writing to each other and SSCDL any act or omission which they are aware that could have an adverse effect on the proper conduct of safety and information technology security at SSCDL's Facilities.

10. Indemnity

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

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

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

persons other than System Integrator or its sub-contractors; (B) Third Parties (i.e., other than System Integrator or sub-contractors) at the direction of SSCDL, or

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

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

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

11. Third Party Claims

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

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

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

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

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

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

v. system integrator hereby indemnify & hold indemnified the SSCDL harmless from & against any & all damages, losses, liabilities, expenses including legal fees & cost of litigation in connection with any action, claim, suit, proceedings as if result of claim

made by the third party directly or indirectly arising out of or in connection with this agreement.

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

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

ix. In the event that the Indemnifying Party is obligated to indemnify an Indemnified Party pursuant to this Article, the Indemnifying Party will, upon payment of such indemnity in full, be subrogated to all rights & defenses of the Indemnified Party with respect to the claims to which such indemnification relates;

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

12. Publicity

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

13. Warranties

a. The System Integrator warrants and represents to SSCDL that:
   i. It has full capacity and authority and all necessary approvals to enter into and to perform its obligations under this Agreement;
   ii. This Agreement is executed by a duly authorized representative of the System Integrator;
   iii. It shall discharge its obligations under this Agreement with due skill, care and diligence so as to comply with the service level agreement.

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

   - the System Integrator has full capacity and authority and all necessary approvals to enter into and perform its obligations under the SLAs and to provide the Services;

- The SLAs have been executed by a duly authorized representative of the System Integrator;

- The System Integrator is experienced in managing and providing works similar to the Services and that it will perform the Services with all due skill, care and diligence so as to comply with service level agreement;

- The Services will be provided and rendered by appropriately qualified, trained and experienced personnel as mentioned in the RFP;

- System Integrator has and will have all necessary licenses, approvals, consents of third Parties free from any encumbrances and all necessary technology, hardware and software to enable it to provide the Services;

- The Services will be supplied in conformance with all laws, enactments, orders and regulations applicable from time to time;

- System Integrator will warrant that the goods supplied under the contract are new, unused, of the most recent higher version /models and incorporate all recent improvements in design and materials unless provided otherwise in the contract. The System Integrator further warrants that the goods supplied under this contract shall have no defects arising from design, materials or workmanship.

- The overall system design shall be such that there is no choking point / bottleneck anywhere in the system (end-to-end) which can affect the performance / SLAs.

Subject to the fulfillment of the obligations of the System Integrator as provided for in sub clause (viii) above, in the event that such warranties cannot be enforced by SSCDL, the System Integrator will enforce such warranties on behalf of SSCDL and pass on to SSCDL, the benefit of any other remedy received in relation to such warranties.

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

14. Force Majeure & Vandalism

In the event that any Damages to items due to Vandalism (physical Majeure attack by public, tampering of equipment by SMC / SSCDL staff or School staff and damage due to accidents) or due to Force Majeure events (such as earthquake, fire, natural calamities, war, act of God) of any kind during 5 years of comprehensive warranty(3 years) and O&M support(2 years) shall be the liability of SSCDL. In such case, SSCDL/Authority shall request the successful Bidder to

repair/replace the damaged unit and reinstall the same. All costs towards the same shall be reimbursed by SSCDL/Authority to the successful Bidder less of insurance proceeds if need of replacement so arise then replacement shall be on tender rates only.

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

For the SI to take benefit of this clause it is a condition precedent that the SI must promptly notify the SSCDL, in writing of such conditions and the cause thereof within 2 calendar days of the Force Majeure event arising. SSCDL, or the consultant / committee appointed by the SSCDL shall study the submission of the SI and inform whether the situation can be qualified one of Force Majeure. Unless otherwise directed by the SSCDL in writing, the SI shall continue to perform its obligations under the resultant Agreement as far as it is reasonably practical, and shall seek all reasonable alternative means for performance of services not prevented by the existence of a Force Majeure event.

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

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

15. Resolution of Disputes

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

If the SI doesn't agree with the opinion of the Chairman, SSCDL, matter shall be referred to two Arbitrators: one Arbitrator to be nominated by SSCDL and the other one to be nominated by the SI. In the case of the said Arbitrators not agreeing, then the matter will be referred to an umpire to be appointed by the Arbitrators in writing before proceeding with the reference. The award of the Arbitrators, and in the event of their not agreeing, the award of the Umpire appointed by them shall be final and binding on the parties. Proceedings under this clause shall be subject to applicable law of the Arbitration and Reconciliation Act, 1996 and the venue of such arbitration shall be Surat. Cost of arbitration shall be borne by each party proportionately.

However, expenses incurred by each party in connection with the preparation, presentation shall be borne by the party itself. The provisions of this clause shall survive termination of this Agreement.

16. Limitation of Liability towards SSCDL

The SI's liability under the resultant Agreement shall be determined as per the Law in force for the time being. The SI shall be liable to the SSCDL for loss or damage occurred or caused or likely to occur on account of any act of omission on the part of the SI and its employees, including loss caused to SMC / SSCDL on account of defect in goods or deficiency in services on the part of SI or his agents or any person / persons claiming through or under said SI. However, such liability of SI shall not exceed 50% of the total CAPEX + OPEX value.

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

17. Conflict of Interest

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

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

18. **Safety Regulation, Accident and Damage**

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

facilities and land and property owners and occupiers and crops, trees and vegetation as aforesaid, with the intent that the Bidder shall be exclusively responsible for any accident, loss, damage, alteration, displacement, disturbance or destruction as aforesaid resultant directly or indirectly from any breach by the Bidder of his obligation aforesaid or upon any operation, act or omission of the bidder his Sub-contractor(s) or agent(s) or servant(s).

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

19. Data Ownership

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

20. Intellectual Property Rights

(A) For the customized solution developed for the project, IPR of the solution would belong exclusively to the SSCDL. The SI shall transfer the source code to SSCDL at the stage of successful implementation of the respective smart element. SI shall also submit all the necessary instructions for incorporating any modification / changes in the software and its compilation into executable / installable product. SSCDL may permit the SI, right to use the customized software for any similar project being executed by the same SI, with payment of reasonable royalty to SSCDL for the same.

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

use, copy, modify (or have modified), use and copy derivative works for the benefit of and internal use of SSCDL.

21. Fraud and Corruption

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

a. "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of SSCDL in contract executions.
b. "Fraudulent practice" means a mis-presentation of facts, in order to influence a procurement process or the execution of a contract, to SSCDL, and includes collusive practice among bidders (prior to or after Proposal submission) designed to establish Proposal prices at artificially high or non-competitive levels and to deprive SSCDL of the benefits of free and open competition.
c. "Unfair trade practices" means supply of services different from what is ordered on, or change in the Scope of Work which is given by the SSCDL in RFP.
d. "Coercive Practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the execution of contract.

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

22. Exit Management

(i) Exit Management Purpose

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

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

(ii) Confidential Information, Security and Data

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

a) Information relating to the current services rendered and performance data relating to the performance of the services; Documentation relating to Surveillance Project, Project's Intellectual Property Rights; any other data and confidential information related to the Project;

b) Project data as is reasonably required for purposes of the Project or for transitioning of the services to its Replacing Successful Bidder in a readily available format.
c) All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable the SSCDL and its nominated agencies, or its Replacing Vendor to carry out due diligence in order to transition the provision of the Services to SSCDL or its nominated agencies, or its Replacing Vendor (as the case may be).

(iii) Employees

Promptly on reasonable request at any time during the exit management period, the Successful Bidder shall, subject to applicable laws, restraints and regulations (including in particular those relating to privacy) provide to SSCDL a list of all employees (with job titles and communication address) of the Successful Bidder, dedicated to providing the services at the commencement of the exit management period; To the extent that any Transfer Regulation does not apply to any employee of the Successful Bidder, SSCDL or Replacing Vendor may make an offer of contract for services to such employee of the Successful Bidder and the Successful Bidder shall not enforce or impose any contractual provision that would prevent any such employee from being hired by the SSCDL or any Replacing Vendor.

(iv) Rights of Access to Information

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

(v) Exit Management Plan

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

a) A detailed program of the transfer process that could be used in conjunction with a Replacement Vendor including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer;
b) Plans for the communication with such of the Successful Bidder, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on Project's operations as a result of undertaking the transfer;
c) Plans for provision of contingent support to the Surveillance Project and Replacement Vendor for a reasonable period (minimum one month) after transfer.

d) Successful Bidder shall re-draft the Exit Management Plan annually to ensure that it is kept relevant and up to date.
e) Each Exit Management Plan shall be presented by the Successful Bidder to and approved by SSCDL or its nominated agencies.
f) The terms of payment as stated in the Terms of Payment Schedule include the costs of the Successful Bidder complying with its obligations under this Schedule.
g) During the exit management period, the Successful Bidder shall use its best efforts to deliver the services.
h) Payments during the Exit Management period shall be made in accordance with the Terms of Payment Schedule.

(vi) Transfer Cost

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

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

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

23. Termination of Contract

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

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

Prior to providing a notice of termination to the SI, SSCDL shall provide the SI with a written notice of 30 days instructing the SI to cure any breach/ default of the Contract, if SSCDL is of the view that the breach may be rectified.

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

Consequences of Termination

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

Plans and drawings

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

24. Miscellaneous

a) Confidentiality

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

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

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

b. Each Party agrees as to any Confidential Information disclosed by a Party to this Agreement (the "Discloser") to the other Party to this Agreement (the "Recipient") &
   i. to take such steps necessary to protect the Discloser's Confidential information from unauthorized use, reproduction & disclosure, as the Recipient takes in relation to its own Confidential Information of the same type, but in no event less than reasonable care;
   ii. to use such Confidential Information only for the purposes of this Agreement or as otherwise expressly permitted or expressly required by this Agreement or as otherwise permitted by the Discloser in writing; &
   iii. not, without the Discloser's prior written consent, to copy the Confidential Information cause or allow it to be copied, directly or indirectly, in whole or in part, except as otherwise expressly provided in this Agreement, or as required in connection with Recipient's use as permitted under this Article, or as needed for the purposes of this Agreement, or as needed for the purposes of this Agreement, provided that any proprietary legends & notices (whether of the Discloser or of a Third Party) are not removed or obscured; &
   iv. Not, to disclose, transfer, publish or communicate the Confidential Information in any manner, without the Discloser's prior written consent, to any person except as permitted under this Agreement.

c. The restrictions of this Article shall not apply to confidential Information that:
   i. is or becomes generally available to the public through no breach of this Article by the Recipient; &
   ii. Was in the recipient's possession free of any obligation of confidence prior to the time of receipt of it by the Recipient hereunder; &
   iii. Is developed by the Recipient independently of any of discloser's Confidential Information; &
   iv. Is rightfully obtained by the Recipient from third Parties authorized at that time to make such disclosure without restriction; &
   v. is identified in writing by the Discloser as no longer proprietary or confidential; or vi. Is required to be disclosed by law, regulation or Court Order, provided that the recipient gives prompt written notice to the Discloser of such legal & regulatory requirement to disclose so as to allow the Discloser reasonable opportunity to contest such disclosure.

d. to the extent that such disclosure is required for the purposes of this Agreement, either Party may disclose Confidential Information to:
   i. its employees, agents & independent contractors & to any of its affiliates & their respective independent contractors or employees; &
   ii. its professional advisors & auditors, who require access for the purposes of this Agreement, whom the relevant Party has informed of its obligations under this Article & in respect of whom the relevant Party has informed of its obligations under this Article has used commercially reasonable efforts to ensure that they are contractually obliged to keep such Confidential Information confidential on terms

substantially the same as set forth in this Article. Either Party may also disclose confidential Information or any entity with the other Party's prior written consent.

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

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

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

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

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

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

A Non-disclosure agreement shall be signed separately between the Systems Integrator and SSCDL.

b) Standards of Performance

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

c) Sub Contracts

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

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

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

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

d) Care to be taken while working at Public Place

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

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

e) Compliance with Labor regulations

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

f) Independent Contractor

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

g) Waiver

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

h) Notices

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

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

SSCDL:

Chief Executive Officer
Surat Smart City Development Ltd.

115, Smart City Cell,

Surat Municipal Corporation Head Quarter

Muglisara Main Road, Surat

Tel: 0261 2277429

Fax: 0261 2277043

Systems Integrator:

_____

_____

_____

_____

_____

Any notice or other document shall be deemed to have been given to the other Party when delivered (if delivered in person) if delivered between the hours of 9.30 am and 5.30 pm at the address of the other Party set forth above or on the next working day thereafter if delivered outside such hours, and 7 calendar days from the date of posting (if by letter).

i) Performance Guarantee

The SI shall submit performance guarantee which is unconditional & irrevocable equal to 10% of the order value of the contract in the format prescribed in RFP issued by any of the Nationalized Banks Only. The performance guarantee shall be valid for the term agreement & shall be renewed & maintained by the SI for the term of the agreement & extension, if any. The performance guarantee shall be forfeited / liquidated by the SSCDL as a penalty in the event of failure to complete obligations or breach of any of the conditions by the SI.

j) Personnel/Employees

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

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

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

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

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

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

k) Variations & Further Assurance

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

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

l) Severability & Waiver

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

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

right, remedy or provision preclude any other or further exercise or enforcement of any other right, remedy or provision.

m) Entire Agreement

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

n) Survivability

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

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

p) Deliverables will be deemed to be accepted by SSCDL if no communication from the department is made to the SI after 30 days of delivery, provided the delivery is made to the designated officer and clearly highlighted in at least 3 weekly project progress reports

25. Applicable Law

The contract shall be governed by the laws and procedures prescribed by the Laws prevailing and in force in India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing. All legal disputes are subject to the jurisdiction of Surat courts only.

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

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

Witnesses:

(1)_____

(2)_____

_____ _____

Deputy General Manager
Surat Smart City Development Ltd.

Signed, sealed and delivered

Name & Designation ----------
For and on behalf of the "Systems Integrator",

_____

Chief Executive Officer
Surat Smart City Development Ltd

The common seal of the Company was affixed on the.....day of month of.....2018 in presence of (1) and (2) members of the Project Committee of the Company.

(1)_____

(2)_____

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

Attachments to the Agreement:

1) Scope of Services for the Systems Integrator (Annexure I)
2) Detail Commercial proposal of the Systems Integrator accepted by SSCDL (Annexure II)
3) SLA to be adhered by the Systems Integrator (Annexure III)
4) Corrigendum Document published by SSCDL subsequent to the RFP for this work (Annexure IV)
5) RFP Document of SSCDL for this work (Annexure V)
6) LoI issued by the SSCDL to the successful bidder (Annexure VI)

The successful bidder's "Technical Proposal" and "Commercial Proposal" submitted in response to the RFP (Annexure VII)

20Annexure VIII - Format for Performance Bank Guarantee

<< To be printed on Rs. 100/- Stamp Paper >>

IN CONSIDERATION OF bid document submitted by_____ Through _____ for _____

SURAT Smart City Development Ltd (SSCDL) for Selection of Agency for Setting up Integrated Command and Control Center in Surat City (hereinafter referred to as the "said work") on the terms and conditions of the AGREEMENT dated the _____day of _____ 2018 executed between SSCDL on the one part and _____(the Company) on the other part (hereinafter referred to as "the said AGREEMENT) and on the terms and conditions specified in the Contract, Form of Offer and Form of acceptance of Offer, true and complete copies of the offer submitted by the Company, the said Acceptance of Offer and copy of the said AGREEMENT are annexed hereto.

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

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

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

AND FOR THE consideration aforesaid, we do hereby undertake to pay to SSCDL on demand without delay demur the said sum of Rs. <(PBG Amount in Word and Figure)> only together with interest thereon at the rate prescribed under <as per RBI based lending rate (9%)> from the date of demand till payment or such lesser sum, as may be demanded by SSCDL from us as and by way of indemnity on account of any loss or damage caused to or suffered by SSCDL by reason of any breach, non-performance or default by the Company of the terms, covenants and conditions contained in the said AGREEMENT or in the due and punctual payment of the moneys payable by the Company to SSCDL thereunder and notwithstanding any dispute or disputes raised by the Company in any suit or proceeding filed before the Court relating thereto our liability hereunder being absolute and unequivocal and irrevocable AND WE do hereby agree that –

a) The guarantee herein contained shall remain in full force and effect during the

subsistence of the said AGREEMENT and that the same will continue to be enforceable till all the claims of SSCDL are fully paid under or by virtue of the said AGREEMENT and its claims satisfied or discharged and till SSCDL certifies that the terms and conditions of the said AGREEMENT have fully and properly carried out by the Company.

b) We shall not be discharged or released from liability under this Guarantee by reason of
   a. any change in the Constitution of the Bank or
   b. any arrangement entered into between SSCDL and the Company with or without our consent;
   c. any forbearance or indulgence shown to the Company,
   d. any variation in the terms, covenants or conditions contained in the said AGREEMENT;
   e. any time given to the Company, OR
   f. any other conditions or circumstances under which in a law a surety would be discharged.

c) Our liability hereunder shall be joint and several with that of the Company as if we were the principal debtors in respect of the said sum of Rs. <(PBG Amount in Word and Figure)> Only.

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

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

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

g) SSCDL shall have the fullest liberty and the Bank hereby gives its consent without

any way affecting this guarantee and discharging the Bank/Guarantor from its liability hereunder, to vary or modify the said AGREEMENT or any terms thereof or grant any extension of time or any facility or indulgence to the Company and Guarantee shall not be released by reason of any time facility or indulgence being given to the Company or any forbearance act or omission on the part of SSCDL or by any other matter or think whatsoever which under the law, relating to sureties so releasing the guarantor and the Guarantor hereby waives all suretyship and other rights which it might otherwise be entitled to enforce.

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

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

1.....

2.....

Being respectively the <Branch Manager of the Bank>, who in token thereof, has hereto set his respective hands in the presence of –

1.....

2.....