Jaipur Smart City Limited

INVITATION FOR BID
(IFB)

Bid Reference No. JSCL/Smart City Works/06/2016 -17

Bidding Document for

Development of Smart Road (Package 2: ICT Works) in ABD area of Jaipur

January - 2017

Jaipur Smart City Limited

JMC Building, Pt. Deendayal Upadhyay Bhawan

LalKothi, Tonk Road, Jaipur-302016

Phone No. 0141-2741346/2741347

E-Mail ID: jscljaipur@gmail.com

Invitation for Bid

Development of Smart Road (Package 2: ICT Works) in ABD area of Jaipur

SINGLE STAGE TWO PART BID

Jaipur Smart City Limited

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Jaipur Smart City Limited

JMC Building, Pt Deendayal Upadhyay Bhawan,
LalKothi, Tonk Road, Jaipur – 302016
E-Mail ID: jscljaipur@gmail.com

NOTICE INVITING TENDER
Bid Reference No. JSCL/Smart City Works/06/2016-17

Jaipur Smart City Limited (JSCL), Jaipur invites online e-bids from reputed contracting firms who have experience in multidisciplinary urban Infrastructure Projects for the following work on Design – Build Basis.

Work No.	Name of Work	Estimated Project Cost	Earnest Money deposit(Rs.)	Tender document Fee	Bid processing fee	Period of Completion
1	Development of Smart Roads (Package 1: Civil Works) in ABD area of Jaipur	Rs.167.28 Crs	Rs. 3.35 Crs.(Rs. Three crores thirty five Lakhs)	Rs. 20,000 (Rupee Twenty Thousand Only)	Rs. 1000 (Rupee One Thousand Only)	24 months (twenty four months)
2	Development of Smart Roads (Package 2: ICT Works) in ABD area of Jaipur	Rs 58.84 Crs	Rs.1.18 Crs. (Rs. One crore eighteen Lakhs)	Rs. 20,000 (Rupee Twenty Thousand Only)	Rs. 1000 (Rupee One Thousand Only)	20 months (Twelve months)
3	Development of Smart Class Room in various locations in Jaipur	Rs 90 lakhs	Rs.1.80 Lakh (Rs. One Lakh Eighty Thousand)	Rs. 20,000 (Rupee Twenty Thousand Only)	Rs. 1000 (Rupee One Thousand Only)	9 months (nine months)
4	Development of Smart Solid Waste Sorting Centre in area of Jaipur	Rs 9.75 Crs	Rs 19.50 Lakhs (Rs. Nineteen Lakh fifty Thousand)	Rs. 20,000 (Rupee Twenty Thousand Only)	Rs. 1000 (Rupee One Thousand Only)	12 months (six months)

		Work 1	Work 2	Work 3	Work 4
(i)	Bid document Downloading Start Date And time	January 10, 2017 11:00 am	January 10, 2017 11:00 am	January 10, 2017 11:00 am	January 10, 2017 11:00 am
	Bid document Downloading End Date And time	Feb 8, 2017 5:00 pm	Feb 8, 2017 5:00 pm	Feb 8, 2017 5:00 pm	Feb 8, 2017 5:00 pm
(ii)	Pre bid Meeting (during office hours)	January 24, 2017	January 25, 2017	January 25, 2017	January 24, 2017
(iii)	Venue of Pre bid meeting	Jaipur Smart City Limited JMC Building, Pt DeendayalUpadhyay Bhawan, LalKothi, Tonk Road, Jaipur – 302016			
(iv)	Last date and time of Online submission of technical proposal and financial proposal	February 14, 2017 5:00 pm	February 14, 2017 5:00 pm	February 14, 2017 5:00 pm	February 14, 2017 5:00 pm
(v)	Last date and time of Physical submission of EMD, Bid document fee Bid processing fee & Power of Attorney	Feb 13, 2017, Upto 5:00 pm	Feb 13, 2017, Upto 5:00 pm	Feb 13, 2017, Upto 5:00 pm	Feb 13, 2017, Upto 5:00 pm

(vi)	Opening of bid online (Technical proposal only)	Feb 15, 2017 3:00 pm	Feb 15, 2017 3:00 pm	Feb 15, 2017 3:00 pm	Feb 15, 2017 3:00 pm

Terms:

a. Demand draft of EMD and Bid Cost are to be submitted in favour of Chief Executive Officer , Jaipur Smart City Limited , Jaipur & Bid Processing fee in favour of Managing Director, RISL,Jaipur.

b. This notice and bid documents are available on following internet site address for e tender www.eproc.rajasthan.gov.in or http://sppp.rajasthan.gov.in

c. A complete set of bid documents can be downloaded from above websites.

d. Bids shall remain valid for 120 days (one hundred and twenty days) from the date of submission of the bid

e. Any bid not accompanied by Bid document fee, Bid processing fee and Earnest Money as in the NIT will be rejected as nonresponsive.

f. Complete e-Tender must be submitted on-line on www.eproc.rajasthan.gov.in

g. Any addendum, clarification to the bidder's queries and corrigendum will be published on the www.eproc.rajasthan.gov.in or http://sppp.rajasthan.gov.in and will not be published in the Newspapers.

Chief Executive Officer
Jaipur Smart City Limited

Detailed BID DOCUMENT

Name & Address of the Procuring Entity	➢ Name: chief Executive Officer, Jaipur Smart City Limited JMC Building, Pt. Deendayal Upadhyay Bhawan LalKothi, Tonk Road, Jaipur-302016 Phone No. 0141-2741346/2741347 E-Mail ID: jscljaipur@gmail.com
Subject Matter of Procurement	➢ Development of Smart Road (Package 2: ICT Works) in ABD area of Jaipur
Bid Procedure	➢ Single-stage Two part open competitive e Bid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	➢ Least Cost Based Selection (LCBS)-L1
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	➢ Websites: www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in,
Website for online Bid application and payment *	➢ Website: www.eproc.rajasthan.gov.in, For participating in the Bid, the Bidder has to apply for this Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only. Bidding document fee: Rs. 20000.00 Rupees (Twenty Thousand only) RISL Processing Fee: Rs. 1000.00 (Rupees One Thousand only) Requisite Bid Security Deposit INR 58,84,00,000.00 (Rupees Fifty Eight Crores and Eighty Four Lacs Only).
Bid Security	➢ Amount (INR) :1.18 (One crore and Eighteen Lacs only), 0.5% of S.S.I. of Rajasthan, , 1% for Sick Industries, other than S.S.I., whose cases are pending with Board of Industrial & Financial Reconstruction In case of Departments' of the State Government and Undertakings, Corporations, Autonomous bodies, Registered Societies, Cooperative Societies which are owned or controlled or managed by the State Government and Government Undertakings of the Central Government shall submit a bid securing declaration in lieu of bid security.
Bid Security Deposit Date/ Time/ Place of Pre-	➢ Date / Time 25.01.2017 at 11.00 AM in Jaipur Smart City Limited JMC Building, Pt. Deendayal Upadhyay Bhawan LalKothi, Tonk Road, Jaipur-302016 Last date of submitting clarifications requests by the bidder 18/01/2017 by 05:00 PM addressed to the procurement entity at Jaipur Smart City Limited JMC Building, Pt. Deendayal Upadhyay Bhawan LalKothi, Tonk Road, Jaipur-302016
Bid doc downloading start and End date and time	➢ Start Date: 10/01/2017 at 11:00 AM onwards End Date: 08/02/2017 at 05:00 PM In case EMD in form BG Original Bank Guarantee is to be submitted Jaipur Smart City Limited by 13/02/2017 by 5:00 PM.
Bid Submission on e-Procurement Portal of GOR Date/ Time/ Place of	➢ 14/02/2012 at 05:00 PM onwards
Financial Bid Opening	Will be intimated later to the Technically qualified bidders
Bid Validity	➢ 120 days from the bid submission deadline

A Bid Security shall be provided as a part of the bid in the form of a Banker's Cheque or Demand Draft or Bank Guarantee of a Scheduled Bank in india, in specified format which shall remain valid for a period of 45(forty five) days beyond the validity of the bid.

Note:

1. Bidder (authorised signatory) shall submit their offer on-line in Electronic formats both for technical and financial proposal.

2. In case, any of the bidders fails to pay the Tender Fee, BSD, and RISL Processing Fee, online (subject to confirmation), its Bid shall not be accepted.

3. To participate in online bidding process, Bidders must procure a Digital Signature Certificate (Type III) as per Information Technology Act-2000 using which they can digitally sign their electronic bids. Bidders can procure the same from any CCA approved certifying agency, i.e. TCS, Safecrypt, Ncode etc. Bidders who already have a valid Digital Signature Certificate (DSC) need not procure a new DSC. Also, bidders must register on http://eproc.rajasthan.gov.in (bidders already registered on http://eproc.rajasthan.gov.in before 30-09-2011 must register again).

4. JSCL will not be responsible for delay in online submission due to any reason. For this, bidders are requested to upload the complete bid well advance in time so as to avoid 11th hour issues like slow speed; choking of web site due to heavy load or any other unforeseen problems.

5. Bidders are also advised to refer "Bidders Manual Kit" available at eProc website for further details about the e-Tendering process.

6. Training for the bidders on the usage of e-Tendering System (eProcurement) is also being arranged by DoIT&C, GoR on a regular basis. Bidders interested for training may contact e-Procurement Cell, DoIT&C for booking the training slot.
   Contact No: 0141-4022688 (Help desk 10 am to 6 pm on all working days) e-mail: eproc@rajasthan.gov.in

7. The procuring entity reserves the complete right to cancel the bid process and reject any or all of the Bids.

8. No contractual obligation whatsoever shall arise from the bidding document/ bidding process unless and until a formal contract is signed and executed between the procuring entity and the successful bidder.

9. Procurement entity disclaims any factual/ or other errors in the bidding document (the onus is purely on the individual bidders to verify such information) and the information provided therein are intended only to help the bidders to prepare a logical bid-proposal.

10. The provisions of RTPPA Act 2012 and Rules thereto shall be applicable for this procurement. Furthermore, in case of any inconsistency in any of the provisions of this bidding document with the RTPP Act 2012 and Rules thereto, the later shall prevail.

-Sd-
Chief Executive Officer
Jaipur Smart City Limited
Procuring Entity

Abbreviations & Definitions

JSCL	JAIPUR SMART CITY LIMITED
GOR	Government of Rajasthan
Act	The Rajasthan Transparency in Public Procurement Act, 2012 and Rules 2013, Government of Rajasthan, Rajasthan
Procurement/ Public Procurement	The acquisition by purchase, lease, license or otherwise of works, goods or services, including award of Public Private Partnership projects, by a procuring entity whether directly or through an agency with which a contract for procurement services is entered into, but does not include any acquisition without consideration, and ─procure☐ or ─procured☐ shall be construed accordingly
Procuring Entity /Purchaser/ Tendering Authority/ Buyer	Person or entity that is a recipient of a good or service provided by a Bidder / Supplier/Seller under a purchase order or contract of sale.
Bidder / Supplier/Seller	A company registered under Indian Companies Act, 1956 or a partnership firm registered under Partnership Act or a proprietorship firm.
Bidding Document	Documents issued by the procuring entity, including any amendments thereto, that set out the terms and conditions of the given procurement and includes the invitation to bid
Authorised Signatory	The bidder's representative/ officer vested (explicitly, implicitly, or through conduct) with the powers to commit the authorizing Organization to a binding agreement. Also called signing officer/ authority having the Power of Attorney (PoA) from the competent authority of the respective Bidding firm.
Bid/ eBid	A formal offer made in pursuance of an invitation by a procuring entity and includes any tender, proposal or quotation in electronic format
Bid Security Deposit	A security provided to the procuring entity by a bidder for securing the fulfilment of any obligation in terms of the provisions of the bidding documents. Also called as BSD.
Contract/ Procurement Contract	A contract entered into between the procuring entity and a successful bidder concerning the subject matter of procurement
Contract/ Project Period	The Contract/ Project Period shall commence from the date mention in the Work Order
AoC	Award of Contract
AoS	Award of Service
BoS/ BoQ	Bill of Service/Bill of Quantity
BG	Bank Guarantee
Day	A calendar day as per GoR/ GoI.
INR	Indian Rupee
ITB	Instruction to Bidders
LD	Liquidated Damages
MAF	Manufacturer's Authorization Certificate
NOC	Network Operations Centre
PAN	Permanent Account Number	

PBG	Performance Bank Guarantee	
PC	Procurement/ Purchase Committee	
PQ	Pre-Qualification	
PSD/ SD	Performance Security Deposit/ Security Deposit	
RISL	RajCOMP Information Services Ltd.	
Services	Any subject matter of procurement other than goods or works and includes physical, maintenance, professional, intellectual, consultancy and advisory services or any service classified or declared as such by a procuring entity and does not include appointment of any person made by any procuring entity	
SLA	Service Level Agreement is a negotiated agreement between two parties wherein one is the customer and the other is the service provider. It is a service contract where the level of service is formally defined. In practice, the term SLA is sometimes used to refer to the contracted delivery time (of the service) or performance.	
VAT/ CenVAT	Value Added Tax/ Central VAT	
WO/ PO	Work Order/ Purchase Order	
QGR	Quarterly Gross Receipt	

Section 1: Project Profile & Background Information

1.0   The JAIPUR SMART CITY LIMITED (JSCL) was established in the year 2016. JAIPUR SMART CITY LIMITED was created by the State government of Rajasthan with a vision to combat and maneuver the growing requirements of a large city in wake of the increasing population and to help give Jaipur a planned look compatible and comparable to any metropolitan city of repute. For this motive JAIPUR SMART CITY LIMITED was given powers and a green signal to speed up the development and progressive growth of the entire city.

2.0   The initiative of the e-governance projects the major work area is being rendered through IT based solutions. Many activities are now performed through IT support solutions.

3.0   JSCL is committed to working for the benefit of the citizens of Jaipur with planned implementation of development schemes and is consistently striving to take Jaipur to higher levels of progress. To meet its objective, JSCL intends to provide, safety and security solutions, cost effective and easy access to information, through multiple devices to residents of Jaipur.

4.0   The initiative of the e-governance projects the major work area is being rendered through IT based solutions. Many activities are now performed through IT support solutions.

5.0   JSCL initiated the process of developing Jaipur City as a Smart City with the use of IT/ICT based interventions Management Services at selected locations of Jaipur City.

6.0   The Public Wi-Fi and associated wired network in each of the key locations identified in the City is being built for the purpose of having a network infrastructure asset using which the government can, not only provide internet access to Citizens, but also transform the engagement between the government and citizens for greater citizen services. The government plans to use this foundational network for improving various operations of civil and city administration. The vision here is also to engage the citizens in inclusive governance.

7.0   Technology has enabled a paradigm shift with —Smartness☐ shaping up all future developments. JSCL has been working towards time bound development activities based on major scientific and hi-tech strategies to create a state-of-the-art city.

8.0   JSCL has started rendering multiple services through IT based e-governance platforms to deal with issues of land, public grievances, notifications, information, tendering, records and a whole ambit of development issues.

Section 2: Eligibility Criteria

The following criteria must strictly be fulfilled by the Bidder. The Bidder must submit documentary evidences in support of their claim for fulfilling the criteria. The bids received without the documentary evidences shall be rejected summarily. The condition from 1 to 9 mentioned below are mandatory to qualify technical bid, noncompliance of any condition shall lead to disqualification in Technical Bid.

S. No.	Basic requirement	Specific Requirements	Documents Required
1	General Requirement	Bidder should be an established IT System Integrator and should have been engaged in Supply, Installation, Commissioning and Operations & Maintenance Services of ICT projects for a period of at least 3 financial years as on 31.03.2016	Work Orders / Client Certificates confirming year and area of activity should be enclosed.
2	Bidder Entity	Consortium/Joint Venture is allowed, one of the parties in the consortium/JV partner will be the Prime Bidder/Lead Bidder. Prime Bidder/Lead Bidder shall treated as —Bidder□. The maximum nos. of consortium/JV partner should be 3. Any of the parties of the consortium /JV partner or the Prime Bidder/Lead Bidder may meet the technical criteria. However, the Prime Bidder/ Lead Bidder alone should meet the financial criteria. If the bidder does not have a Category B, ISP license or higher, then the bidder needs to tie up with at least one such ISP to provide Internet bandwidth. Both the Bidder and the ISP shall form a consortium/JV and should declare the Prime Bidder / Lead Bidder clearly at the time of bidding.	Copy of the consortium/JV Agreement. In case consortium/JV, clearly specifying the role and area of specialization of individual parties consortium/JV, duly signed by Consortium/JV parties on Rs. 100 non-judicial stamp paper should be enclosed. The agreement should clearly define the Prime Bidder/Lead Bidder should be individually jointly signed by each of the Consortium/JV parties. In such case, a tripartite agreement shall be executed between JSCL/ISP partner/Bidder. And the payment shall be made directly to ISP provider by JSCL on behalf of the Bidder
3	Legal Entity	Any legal entity duly registered in India is allowed. In case of consortium/JV, the	a) Certificates of incorporation and/ or

		Prime Bidder/ Lead Bidder should meet this criterion.	b) Registration Certificates	
4	Turnover	The Prime Bidder/Lead Bidder must have annual turnover of at least Rs. 75 Crores solely from ICT Business and IT Services during each of the last 3 financial years as on 31.03.2016.	Audited and Certified Balance Sheet and Profit/Loss Account for the last 3 Financial Years should be enclosed. CA certificate be enclosed.	
5	Technical Capability	The Bidder or any of the parties of the consortium/ JV partner must have successfully implemented, during last 3 financial years as on 31.03.2016, 1) One command and control centre with at least 4 of the smart components mentioned in the scope of work. AND 2) At least the following numbers of Wi-Fi Systems 2a) Two projects of similar nature for not less than 200 Access Points (AP) in a single work order OR 2b) Three projects of similar nature for not less than 100 Access Points (AP) in a single work order AND 3) One CCTV Surveillance System Project for not less than 100 IP Cameras in a single work Order	Copies of work order or Contract agreement and the client certificates/Project Sign-off Certificate from the client	
6	Net Worth	The Bidder or the Prime Bidder/Lead Bidder must have positive net worth & profit making in each of the last 3 financial years as on 31.03.2016	CA Certificate mentioning net profit should be enclosed.	
7	Certification	The Bidder or consortium/JV should possess below Certifications at the time of bidding:	The Bidder is required to furnish the copy of valid certification.	

		a) ISO 9001:2008 Certification for System Integration. b) ISO 20000:2011 for IT Service Management (Facility Management Services) c) ISO 27001:2005 for Information Security Management System	
8	Tax Registration	The Bidder or the Prime Bidder/Lead Bidder should have a registered number of a. VAT/Sales Tax where his business is Located b. Service Tax c. Income Tax PAN	Copies of relevant(s) Certificates of Registration.
9	Technical Specifications of BOQ items	The quoted product/item should fulfil all the technical specifications laid out in the tender document mentioned in the Annexure (Technical specifications of BOQ items). The Bidder is required to furnish Make, Model / Part number of the quoted item.	The Bidder should enclose Relevant catalogues, brochures, etc. in support of all the items quoted in the Bid.

- **Non-compliance of Eligibility Criteria:** Any bid failing to meet the above eligibility criteria shall be disqualified and will not be considered for Technical Evaluation. Bids received with any deviation will summarily be rejected.
- **Change in Eligibility Criteria:** If there is a change in the status of the bidder with reference to any of the eligibility criterion specified above, during the bid process till the award of the project, the bidder should immediately bring the same to the notice of JSCL.
- **Turnover Criteria:** For the purpose of the criterion, turnover of only the bidding entity will be considered. Turnover of any parent, subsidiary, associated or other related entity will not be considered.
- **Single Optimal Solution:** Bidders are requested to propose a single optimal solution and should refrain from suggesting multiple solutions or option which may lead to the rejection of the bid.
- **Project Experience: T**he Bidder should provide the experience details of Projects undertaken by it or its consortium members or JV entity as the case may be, only.

Section 3: Project Objective & Broad Scope of Work

Jaipur Smart City Limited is committed to working for the benefit of the citizens of Jaipur with planned implementation of development schemes and is consistently striving to take it to higher levels of progress. To meet its objective, the team intends to provide *Safety and Security solutions*, *Cost-effective and Easy access to Information*, *Smart ways to manage various citizen needs like Wi-Fi Access, Vehicle Parking, Public Transport, Traffic management etc.,* through multiple devices and platforms.

JSCL seeks to develop **Smart City solutions** and **State-of-art City Operation Centre of the City**, which will help to *deliver, monitor and manage the Smart City Services*.

Following are the identified *Smart City Services and Solutions* to be included as part of **JSCL's Smart City Initiative:**
1. Smart City Wi-Fi
2. Smart Lighting
3. Smart City Surveillance with Vehicle Identification& Counting
4. Smart Parking
5. Environmental Sensors
6. Smart Transport Solution
7. Smart Waste Management
8. Smart Communication
9. Integrated City Operation Center

It is important to note that network connectivity plays an important role in building Jaipur as a Smart City by bringing together different city management vertical solutions on a single foundational network infrastructure. The converged network facilitates information exchange between resources and applications across different domains. It is an end-to-end open platform enabling IOT (Internet of Things) services for cities. Its key objectives are to provide:
- IP connectivity to things, people, devices, and vehicles in the city street
- Wired and wireless, scalable, and highly secure network platform
- A data management framework to help enable data collection, organization, and sharing
- Distributed compute and storage services, location services, and security services

Scope Summary
Solution wise scope is summarized below:

#	Solutions/components	System Landscape
1)	Wi-Fi Solution	Minimum 48 Wi-Fi hotspots to cover the entire walled city area
2)	Smart Lighting Solution	Minimum 800 smart LED nodes for Smart Lighting solution on heritage poles and related Smart services
3)	City Surveillance of Strategic locations	144 Surveillance Cameras for Connected Safety & Security with Analytics

		Traffic Counting and Vehicle Identification licenses for 64 cameras deployed at Intersections
4)	Smart Parking Solutions	Smart Parking solution for 1200 four wheelers in 8 closed parking lots
5)	Environmental Sensors	16 Environment sensors
6)	Smart Transport Solution	160 Real time Bus and Passenger Information System
7)	Smart Waste Management	16 Smart bins and 16 collection vehicles
8)	Smart Communication	For JSCL Offices, Officers and Staff members
9)	Smart City – Integrated Operation Centre	Command Centre Application, City Infrastructure Management & Smart City Services for GIS Services, Lighting Services, Environmental-Sensor, Camera Alerts etc. along with City Network Operation Centre (NOC) and Data Centre (DC).
10)	Network and Connectivity solution	As per solution requirement

1. Smart City Planed Areas Details

a) The solution shall be designed for the entire Walled City Area

b) This proposal describes design, build, and implementation a common infrastructure with some key citizen centric amenities/solutions deployed at prime locations.

c) The architecture of set-up consists of number of locations which shall be operated /managed/controlled by Network Operations Centre (NOC) to be established at JSCL building at Jaipur.

2. Project Deliverables, Milestones & Time Schedule:

a) The successful bidder is expected to carry out all ground work for Supply, Installation including documentation, coordination with JAIPUR SMART CITY LIMITED. However, bidder should take approval of templates of all the reports from JAIPUR SMART CITY LIMITED before submission of deliverables to purchaser. The complete work has been planned for execution / completion in 6 months.

b) O&M Phase - 5 years from the successful execution / completion of the Implementation phase

3. Payments Terms

a) Payment of 70% will be made against supply and inspection of the equipment on pro-rata basis, payment of 10% will be made against installation and commissioning and balance 20 % in five years in equal quarterly installments

b) The successful bidder will make the request for payment in writing, accompanied by invoices describing, as appropriate, the supply, and by the required documents submitted pursuant to the contract and upon fulfillment of all the obligations stipulated in the Contract.

c) The currency or currencies in which payments shall be made to the successful bidder under this Contract shall be Indian Rupees (INR) only.

d) All remittance charges will be borne by the successful bidder.

e) In case of disputed items, the disputed amount shall be withheld and will be paid only after settlement of the dispute.

f) Any penalties/liquidated damages, as applicable, for delay and non-performance, as mentioned in this bidding document, will be deducted from the payments for the respective running bill subject to bill amount.

4. Service Level Agreement
A. SERVICE AVAILABILITY
a. UPTIME (Wi-Fi, City Surveillance, Smart Lighting, Smart parking and Smart Communication Availability):
   a. SLA Requirement – Average uptime should be **≥ 97%** per site per quarter. Site means 75% of the equipment up.
   b. Report Requirement – Average Uptime (Availability) Report

Calculation Criteria	Amount of penalty
Average Uptime 97% or above	No penalty
Average Uptime between 93% - 97%	1% of the QGR amount
Average Uptime between 90% - 93%	2% of the QGR amount
Average Uptime below 90%	5% of the QGR amount

b. UPTIME (Data Center Core System Availability):
   a. SLA Requirement – Average uptime should be ≥ 97% per quarter.
   b. Report Requirement – Average Uptime (Availability) Report

Calculation Criteria	Amount of penalty
Average Uptime 97% or above	No penalty
Average Uptime between 93% - 97%	1% of the QGR amount
Average Uptime between 90% - 93%	2% of the QGR amount
Average Uptime below 90%	5% of the QGR amount

c. THROUGHPUT (Band Width):
   a. SLA Requirement – Average throughput should be ≥ 90% per quarter.
   b. Report Requirement – Average Throughput Report

Calculation Criteria	Amount of penalty
Average Throughput 90% or above	No penalty
Average Throughput between 80% - 90%	1% of the QGR amount
Average Throughput between 70% - 80%	2% of the QGR amount
Average Throughput below 70%	5% of the QGR amount

B. SLA Manpower Requirements:

The Bidder shall provide following minimum manpower resources for on-site requirement (at outdoor locations as well as at NOC) with no other responsibility to meet out the SLA:

S. No.	Professional	Minimum resource	Min Qualifications	Job description
1	Team Leader (8x7)	1	Experience on similar type of ICT based projects, of minimum 3 years	Overall project management and coordination
2	System / Network Administrator (16X6)	5	Experience on Windows and Linux administration, Virtualization, Storage, Application handling, Backups, etc., of minimum 3 years. Experience on configuration and deployment of Network Switches, Routers, WiFi Controllers & Access Points, Surveillance Cameras, Fire Wall Load Balancer, etc., of minimum 3 years	System Administration and Backup Management; Network & Security Management
3	Technical Support for outdoor location and NOC (16X7)	4	Experience on configuration and deployment of Network Switches, WiFi Access Points, Surveillance Cameras, etc., of minimum 3 years	Configuration, Troubleshooting and Support.
4	Security personnel for outdoor location (24x7)	As per site	Matriculation or higher.	Physical protection.

- In addition to above professionals, to meet out the SLA, the bidder shall provide professionals / personnel for site as well as at JAIPUR SMART CITY LIMITED NOC.

- The System/Network Administrator should be CCNA certified professionals and shall be under the control of JAIPUR SMART CITY LIMITED IT Cell.

- If the professionals to be deputed for the project remain absent, a suitable substitute shall immediately be provided. Penalty on non-availability of manpower resources is are:

Type of Professional	Penalty on non-availability of resource
System/Network Administrator	Rs. 1500.00 per resource per absent days

5.0 Project Objective and Scope

Supply, installation, testing and commissioning of all systems as per below sections and providing services for 5 Years. Below listed objectives are envisaged from this project;

5.1 Smart Wi-Fi Solution

City Wi-Fi serves as the foundation for creating a connected city to access the wireless internet service with ease and convenience. The City Wi-Fi allows for a confluence of data from static sensors as well as connected objects and people. This data can inform city processes and improve the delivery of urban services and the management of infrastructure.

City Wi-Fi helps cities to provide citizens with internet connectivity and access to a broad range of city-wide service which has following benefits:

Address critical Wi-Fi security, deployment, and control issues: Deliver scalable, manageable, and secure wireless connectivity with a low total cost of ownership (TCO). There by having more revenue and lower costs from infrastructure management.

Create a service delivery platform: Deliver a ubiquitous, high-fidelity Wi-Fi platform that offers a host of new, location-based services and enables the latest, revenue-sharing business models. Better city planning and development.

E-government services delivered to citizens, faster, and at a lower operating   expense;

Improved productivity and service: by providing location based services;

SMS/Token/Social Media based authentication: Any new connection on the highways will be free for some limited period and can be authenticated via SMS. After say 30 minutes or 60 minutes it has to be on paid basis where users will be directed to the payment gateway.

Platform must be provided so that advertisement can be pushed to the citizens whenever they enter into a shopping area or shopping mall or push a customized map to the citizens when any visitor visits the national park.

Access to city services and Internet connectivity. AP's must be configured in mesh architecture (based upon the feasibility study) to avoid need of numerous AP to switch connectivity.

The build Wi-Fi platform to be further use for monetizing by means smart City use cases, increased access to online services.

There will be 192 Hot Spot locations to start with spread across different key locations of Jaipur. Every hot spot location will have min 4 APs; the number of AP can be increased or decreased based upon the need. AAA solution must be considered with 20 user concentrations per AP simultaneously; the concurrency of users at each AP may go high in future hence the AAA platform must be highly scalable in nature.

Minimum 40 Mbps of bandwidth must be provisioned at each hot spot location to start with, with flexibility to increase it 80 Mbps bandwidth per hot spot location.
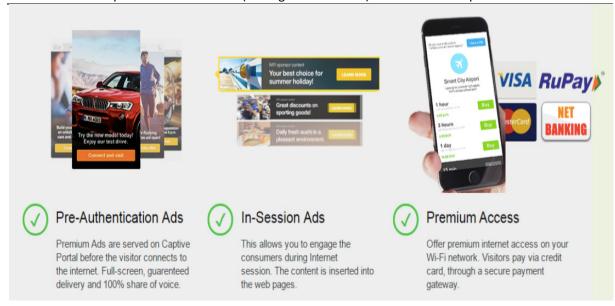
As free Wi-Fi services in any Smart City project needs strong monetization and analytics to make it more useful and financially feasible, JSCL also wishes to monetize its Wi-Fi Hotspots by showing Digital content and advertisements on the user sessions and devices and also by paid Internet once daily free quota gets over.

In this view, it is proposed to build, integrate and manage complete monetization of JSCL Wi-Fi, the bidder will be responsible for getting Digital Advertisements, run them and work on a revenue share model with JSCL.

Below is the Scope of work for the proposed model:

a. The successful bidder will have to ensure seamless integration of its monetization platform with wireless infrastructure.

b. The platform proposed by the bidder should be fully secured.

c. All the components required for successful delivery of advertisements would be supplied by the bidder without any cost to JSCL.

d. The bidder will be responsible for end to end process and operations of monetization including sourcing of digital content and advertisements. JSCL will only assist in getting content from State Government departments.

e. The ad-injecting platform proposed by the bidder should support following types of ad formats:

   i. Click to Site – An ad leading to a website when clicked.

   ii. Video – An ad showing the streaming video as an ad and successful redirect when clicked.

   iii. Mobile app push – Ad leading to the download page of the respective mobile app store when clicked.

   iv. Offers – An ad showing offer and discounts delivered directly to users' mailbox.

   v. Survey – An ad in a format of a user feedback or satisfaction survey.

   vi. Social Media – An ad leading a user to a social media action on Facebook or twitter.

f. Authentication, Authorization and Accounting (AAA), user data logs, reporting and complete ad analytics will the responsibility of the successful bidder without any extra cost to JSCL.

g. The successful bidder's platform should have payment and SMS gateway integrated for online payments of paid internet access and OTP delivery thru SMS.

h. The platform proposed should have inbuiltcustomizations like session limiting, bandwidth limiting, etc. from day one.

i. The payment gateway should offer users the choice of multiple payment options including M-Wallets.

j. The successful bidder will be responsible for end to end services management of free as well as paid Wi-Fi.

k. The bidder will dedicate one resource onsite for support and operations during the contract period.

l. The provided platform should have an uptime of 99.5% or more during the contract period.

m. The successful bidder will submit monthly reports of user logins, user sessions, user device and it's OS, location along with mobile numbers, etc.

n. A single platform must ensure that not only subscriber management functionality is achieved but monetization functionality is also provided by the same platform.

Typical Monetization Stream is mentioned below:

Below is the expected functional feature out of the billing & monetization platform:

A. Functional features:

- Concurrent session limits per SSID.
- Bandwidth limit per SSID and per connected user with upload and download
- Session and idle timeout customizations per SSID.
- Walled Garden.
- Session data logging – User Mobile number & MAC, Source IP, Device & OS details, AP MAC, session time, etc.
- Seamless Roaming between networks.
- Adaptive Splash Pages - BYOD Ready.

B. Monetization Features:

- Branded Splash Page – Customization of Logo, background, colors, etc.
- Ad push – Images and Videos.
- Pre-Authentication Ads.
- Social Media action – page like etc.
- Third party page diverts on successful login.
- Local language customization.
- In session ad push.
- Push Notifications.
- App push.
- Paid Access
- User analytics – Repeat user/Loyal user

5.2 Smart Lighting Solution

Jaipur Smart City Limited intends to implement an energy efficient LED based Street Light System bundled with motion & ambient light sensors along with Smart controllers in Walled City Area

Electric streetlights are essential elements of a municipal environment. They affect residents' sense of safety and place while influencing a city's ability to create an inviting

environment for business and tourism. Unfortunately, outdoor lights are also a major energy draw.

To reduce electrical demand, cities are moving a large percentage of outdoor lighting fixtures toward light-emitting diode (LED) technology. This global transition can be a gateway to adopting a common platform on which to launch a number of smart-city solutions.

Smart lighting should meet the following functional requirement:

a. The sensors based street lighting system shall capable of providing the real-time data

b. Cloud or on-premise Lighting Operation and Management platform shall integrate with City Infrastructure Platform

c. Ability to send commands to the smart street lighting system based on the data analytics to increase/decrease the luminosity as per the daylight and weather conditions.

d. Individual switch on/off, increase/decrease luminosity as per the command received from the Lighting Operations Management software

e. Policy based Operation via the Lighting Operations Management software, e.g., set up policies like light up alternate lights during low traffic density, increase the luminosity of the lights as per the dullness of the daylight

f. Real-time status of the Smart Lighting System on a city map view of the Lighting Operations Management software

g. The LED OEM identified must be able to provide the LEDs that can be integrated with lighting control nodes.

h. The smart street lighting system should be able to operate at any weather conditions

i. The smart street lighting system should be able to communicate to the Lighting Operations Management software hosted on the cloud (Preferably)

j. The smart street lighting system should have the capability to receive the instruction from the Lighting Operations Management software and act accordingly

k. The Lighting Operations Management software should be able to send commands to the smart street lighting system based on the data analytics to increase/decrease the luminosity as per the daylight and weather conditions.

l. The smart street lighting system should be able to operate the lights switch on/off, increase/decrease luminosity as per the command received from the Lighting Operations Management software

m. The city administration should be able to see the real-time status of the Smart Lighting System on a city map view of the Lighting Operations Management software

n. The city administration should also be able to operate the Smart Lighting System manually.

o. The smart lighting system should be able to communicate the system issue or failure to the Lighting Operations Management software.

p. The smart lighting system is a combination of LED lights and sensors.

q. The system should be able to provide dynamic lighting based on ambient light sensors, motion sensors and predefined lighting schedule.

r. The individual lights are to be monitored by electronic controller using a wireless communication technology

s. The controller should be able to operate autonomously as per the defined schedules and light level sensors

t. Should enable Over the Air (OTA) firmware update

u. The control nodes should have a provision to integrate other sensors to it and collect the sensor data and transmit to application in the cloud.

v. The control node should also have the ability to supply power to other devices which might be mounted on the same pole. Example a video camera or a Wireless access point etc.

w. The Lighting Management Software should have well-documented APIs for developing applications for Policy-based Management of Outdoor Lights

x. The poles that needs to be supplied as part of smart lighting solution should have heritage design

5.3 Smart City Surveillance

Protecting citizens and ensuring public safety is one of the topmost priorities for any Government agency. It requires advanced security solutions to effectively fight threats from activities of terrorism, organized crime, vandalism, burglary, random acts of violence, and all other forms of crime. CCTV based video surveillance is a security enabler to ensure public safety. As part of citizen safety an integrated security solution needs to be deployed which is intended to effectively monitor all the critical operational areas of the locations. The Video Surveillance System is required to ensure effective Security & surveillance of an area as well as create a tamper proof record for post event analysis. The Surveillance System shall provide an on-line display of video images on monitors at local security control room & also at any other place as defined for large locations as per requirement.

The City Surveillance solution is expected to enable the following: -
- This Solution helps to monitor public areas, analyze patterns, and track incidents and suspects, enabling quicker response.
- Traffic situation awareness
- Quicker response to incidents
- Improved planning and resource allocation
- Improved communications about incidents
- Enhancement of operational control by covering critical areas
- Recording of camera outputs for analyzing critical events

The City Surveillance should also have the functionality of analyzing traffic which can automatically counts and classifies vehicles on the road and/or particularly on junctions. It produces statistics for any configured turn possibilities at junctions. The detailed functionality is given as below:
- Automatically counts vehicles moving from source to sink regions
- Classifies vehicles into 4 classes: trucks, buses, passenger cars and motorcycles

- Simultaneously counts and classifies vehicles for unlimited combinations of source and sink regions
- Source and sink regions can be configured using a point-and-click interface
- Reliable counts in traffic congestion and stop-and-go situations
- Superimposes count results on video
- Exports statistics to Excel or .csv file
- Uses feature-based tracking algorithms to detect and analyze motion
- No calculation on the camera necessary, completely server-based
- Independent of camera manufacturer due to open interfaces
- Visualization can be provided as an MPEG4 RTSP stream to be integrated into any VMS just like any other camera

5.4 Smart Parking Solution

Jaipur Smart City Limited has envisioned the intelligent parking services that address city's parking issues through sensor-enabled parking management. This will enable citizens with real-time information about available parking and allows them to book spaces in advance using mobile applications. The results are low traffic congestions and a more effective partnership of city with citizens, local businesses, and parking enforcing agencies. The solution should improve parking guidance, parking enforcement, and parking administration as well as provide parking occupancy, utilization revenue, and enforcement reports through analytics. "Off Street Parking" shall mean closed area with single entry and exit access controlled through boom barrier. The main objectives of the Intelligent Parking Management (IPM) planned is to address the following:

1. Parking availability information to citizen through mobile application
2. The system should be able to detect the real-time occupancy status of each parking spot on the street or in the outdoor parking lot.
3. The system should use a sensor or a video analytics based technology to determine the occupancy status of the parking lot.
4. The operator should be able to view the current status of each parking spot in an on street parking on an online parking operations dashboard.
5. The consumer app should show availability of the parking slots, allow search and reserve/booking of parking
6. The system should provide a Smart Phone application for Citizens to get a real-time information about parking availability in the parking area.
7. The parking operations platform should make the data and policy management of parking available to other third party applications using well-documented APIs.
8. The parking system should allow access to real-time and historical parking occupancy data and policy management through APIs to other third party applications like City Command and Control Center
9. The parking system should have features for various reporting requirements like
    a. Real Time and Historical Occupancy Reports
    b. Violations and Overstay Reports
10. The Parking System should be able to integrate with a Payment Gateway, facilitating payment by Cash and all kind of cashless mode of payment.
11. The complete smart parking system should be able to handle pass system creating all types of passes – daily pass, weekly pass and monthly pass with auto-renewal facility

12. The system should be able to create enforce dynamic pricing such as peak hour pricing, peak day pricing, peak season pricing etc.
13. The system should be able to work in offline mode as well along with online mode
14. The entire solution should be an integrated one with consumer app and parking management system integrated with each other.
15. Consumer app should have payment facilities like online payments, wallet payments, payments via cards (Debit/Credit).
16. The system should have provisions to accept one-city NFC cards for parking payments.
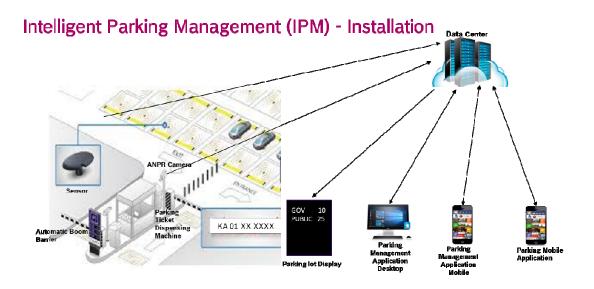17. Person with hand held device (POS) would need to be deployed to handle cash payments.

Figure 1: System Architecture (Representation only)

To enable the citizen to know the availability of parking slots at parking lots. ANPR Cameras mounted at the entry and exit of the parking lot to capture Vehicle Number Plate and check against the parking database for vehicle authentication and grant user access based on privileges. Parking Ticket Dispensing Machine installed at entry and dispense parking ticket on entry. The Parking Payment Machine installed at the exit to print the settlement receipt. The access to parking place is managed through Boom Barriers. The citizens should be able to know the parking availability through variable message signboards in the vicinity of parking place and also through mobile application. The parking management should be able to change the rates dynamically. The server, storage and connectivity is in scope of this project. The tenderer has to maintain all the hardware for a period of 5 years post the deployment of solution

5.5 Environmental Sensors

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

a. The environment sensors should have the following capabilities:

- They should be ruggedized enough to be deployed in open air areas, on streets and parks

- They should be able to read and report at least the following parameters: Temperature, Humidity, Ambient Light, Sound, Pressure, CO, NO2, O3, SO2 and compulsorily PM 2.5 and PM 10.

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

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

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

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

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

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

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

5.6 Smart Transport Management Solution

a. The software shall be web based and utilizes high resolution digital map to show real-time position of the vehicles. The software shall provide map based tracking and transit route line based tracking of vehicles by the control center operators.

b. The software is expected to have enterprise capabilities which enables multiple user type to be enabled to carry out various functions like, Alarm Management, Vehicle Schedule Tracking, Speed Management, Stoppage management, Route replays, bus tracking dashboard etc. as a standard functionality.

c. The software shall enable control center management staff quick decision making capability, which shall be achieved by providing graphical tools for visualization.

d. The software shall enable to drill and analyze information and online data in a multi-dimensional manner. Comprehensive analysis and reporting capabilities are expected to be part of the application delivery which matches the world standard capabilities of AVLS systems.

e. The software should have the capability to have a multi-screen based tracking system, so as to enable tracking staff to quickly analyze activities and have a better insight into operational data of all activities within the system.

f. Proposed AVL solution should have capability System should have Tracking buses in real time and predicting ETA at stops and disseminate this information to PIS and on board PIS systems.

g. Ability to define geofencing with Waypoint Entry & Exit both being of different radius
h. System should notify the operator of the communication error in case vehicle is 'untracked'
i. In the case of communication error vehicle should continue to operate autonomously, calculating schedule adherence, performing onboard next-stop announcements, and is able to start subsequent runs in the block or duty with all the necessary data loaded on the vehicle at the start of the day once assignments are known.
j. The system should store the running time whenever a vehicle transits between two waypoints, system should have the ability to accumulate and constantly refines a database of travel times that have occurred, to accurately predict the ETA
k. Ability measure vehicle's actual movements against these predicted values to determine how late or early a vehicle is running against the historical averages. These predictions that should be disseminated to PIS and other stakeholders.
l. The system should interface with data sources such as the schedule and planning tool to obtain operational route and timetable data. The system should also support a standard web-service interface for third-party consumers of real-time public transport information.
m. Solution should have On-vehicle hardware and software that provides AVL tracking and
n. integration with on-vehicle equipment including next stop displays, audio systems
o. The system should have track routes are being run, where the stops are located, the timetables for these routes at these stops all must be current and accurate.
p. System should have functionality to load each vehicle with the complete schedule for a shift when the operator dispatches the vehicle
q. System should automatically check for changes to any relevant service paths such as altered stop locations and will then update this information as required
r. Solutions should cover aspects for routes and vehicle such as:
    - All Stop characteristics (Name, Location, Number)
    - All Route characteristics (Shape, Ordering)
    - All Passenger information characteristic (Final & Mid-point Destination names numbering)
    - All Vehicle characteristics (Adding new/Retiring old)
    - All Crew characteristics (Activating new/Removing old)
    - Calendar schedule (Runs/Blocks/Shifts/Assignment)
s. The system should obtain crew and vehicle allocations through the schedule and planning system.
t. Dynamic changes that occur during the operational day should be communicated to the System and the changes disseminated to the affected vehicles
u. System GUI should provide the ability to perform assignments of crews and vehicles
v. System should have ability to automatically import Routes and timetables and validate against existing route and timetable data within the system and are tested for any timing or route changes
w. Ability to handle diversion with a message being sent to both the PIS displays that are not going to be serviced and all buses that are affected by the diversion. The types of actions possible include:
    - Change Route/Run
    - Change Vehicle Block
    - Change Route Destination.

x. System should provide the ability for controllers to apply a section or route diversion

y. system to ensures that PIS within the diverted region are not loaded with real-time information for the diverted runs but instead display the textual message chosen by the Controller

z. The solution should track the schedule adherence and calculate the timetable deviation based on received waypoint events. With the ability to compare deviation against historical running times instead of schedules.

aa. System should have mode such as headway-monitoring mode, in this, the headway differences are calculated centrally and stored for historical references

bb. Ability to track Bus and continually checks its interpolated position against a geo-fenced region that the run is to take.

cc. Route View in the system:
- System should have Linear Route View
- System should have Headway View
- System should have Timetable View
- System should have Deviation View
- System should have Layover View
- System should support Automatic Stop Announcements
- System should support Audio Announcements
- System should support Visual Announcements
- System should have Emergency Alarms
- Solution should ability to incorporates traffic signal priority interface

dd. The operations Management system installed and managed through integrated AVLS platform shall have functionalities (not limited to) (This is a partial list, SP will provide a full capable AVLS system based on best practices)

Maintenance Requirements

a. Device settings shall be updated including software/firmware updates through transmission via the secured communication network set up by the service provider. For reasons of security, device settings shall not be modifiable by the field staff of the service provider/others.

b. Any device settings modifications including software/firmware updates as well as business rules such as route fare settings, discounts etc. shall be done with prior authorization

c. A digital log of all changes of settings on each and every device shall be maintained and delivered

d. Any faulty equipment supplied by Service provider shall be replaced with a tested unit from the spares maintained by service provider.

e. AVLS device installed shall be monitored by Service Provider

f. Repair and testing of equipment shall be done at the Service provider's maintenance centre and not at site.

g. Only a maintenance engineer with maintenance access card shall be able to access maintenance mode of the device which shall allow the maintenance engineer to diagnose the faults and update the device settings directly, if required.

h. A repaired unit shall be tested for full functionality as at the time of initial deployment and certified before it is reinstalled at any site.

5.7 Smart Waste Management

Smart waste management shall be done using latest GPS and RFID technologies and will help JSCL in for real time tracking and monitoring of operational vehicles at garbage collection process throughout the city as for the following activities:

- **Door to Door Collection**
  - Visual monitoring of routes being followed by vehicles
  - Report in case of points missed and area served
  - Tracking route repetition
  - Unwanted Idle time/Stoppage monitoring

- **Storage Bin Collection**
  - Efficient monitoring and management of waste collection bins
  - Identify deviations in operations

- **Fleet Status Monitoring**
  - Vehicle travel history record
  - Monitoring & Control of route violation
  - Elimination of Manual, error-prone data collection process
  - Need for real-time verification of what/when/where of the service has been stopped
  - Transparency in Association of Zone-Ward and Zone-Vehicles

- **Real time management of missed collection points**
  - Monitor and map all vehicles with real time recording of data.
  - Alert in case of missed points
  - Generate an alert if unauthorized movement occurs

- **Integration with Weighing System**
  - Real-time weighing details from dumping yard
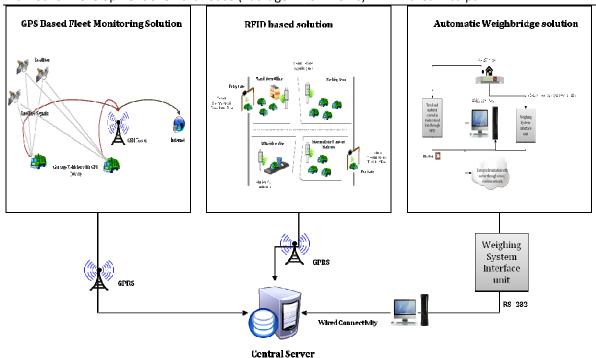 - Per vehicle garbage collection details

- **Contractor Payment Issues for rented fleet**
  - Vehicle wise distance travelled
  - Weight of garbage collected per vehicle at every turn
  - Optimize Capability of determining the real cost of waste transporting and disposal
  - Increase Transparency in the Process of providing the billing/credit of waste disposal or recycling

To achieve the Real time monitoring of Solid Waste Collection Process, following mandatory hardware shall be required:

- All garbage collecting & transferring vehicles need to be fitted with GPS devices and RFID Tags.
- RFID Tags on Door to Door Collection Points/Bins (Optional - if feasible)
- All Community Bins / Container Bins need to be fitted with RFID Tags.
- RFID Readers at strategic location such as Key Entry/Exit Points, Parking Areas, Waste Transfer Stations, Regional/Zonal Offices, Weighbridges, Dump Site and Waste Recycling Plants
- Automated Weighing Scales needs to be fitted and integrated with RFID Readers

Over all integrated solution architecture will be as per the below mentioned diagram;

Details for the above mentioned solution architecture is as follows;

1. **GPS based Fleet Monitoring Solution**

   • GSM Tower passes each and every vehicle information to Central Data Server
   • Central Data Server processes and stores the information and sends this information to clients on request via internet.

2. **Community BIN monitoring**

   • All sensors installed at Community Bins will send data to central server through controller unit. The Controller unit will filter out the local data and will send useful data at central server for further action.
   • Based on the level status of bins nearby bin lifting vehicle will be getting notification for garbage lifting location.
   • Once Bin will be at threshold level the sensor will send an alert to the system with bins geo location and identity. Based on the alert received at system, system will look for nearby vehicle and based on that data the notification for Bin lifting will be send to garbage bin lifting vehicle.
   • Vehicle will reach at the defined location as per the system and Empty the Bin and place it again at the same place.

3. **RFID based Solution**

   • Vehicle and bins are equipped with RFID tag.
   • RFID reader reads vehicle information at entry/exit point, parking yards, dump yards etc.
   • RFID reader sends this information to central server via GPRS connectivity.
   • RFID solution will be integrated with GPS based fleet monitoring solution and relevant report will be generated for the application.

4. **Integration with weighbridge solution**

   • RFID reader will be at every weighbridge site.
   • When vehicle arrives on weighbridge, RFID reader will identify the vehicle and sends information to Central server.
   • Weighing information will also be capture from Weighbridge Application (if any available) and same data will be interfaced with Central Server through broadband connectivity.

- Weigh bridge solution will be integrated with GPS based fleet monitoring solution and relevant report will be generated from the application.

For Weighbridge solution, the following bandwidth will be required:

- In case of wire line connectivity minimum 512 kbps broadband.
- In case of wireless 3G/4G data card would be required. Wireless connectivity shall be preferred for advertisements, if required to be displayed on LED Displays.

5.8 Smart Communications

Unified communications is an increasingly important investment for organizations looking to improve productivity and responsiveness while reducing their IT costs. The convergence of voice, video, and data communications around a shared IP-based infrastructure - allowing users to easily make a call, send a message, or join an audio or videoconference - is bringing benefits to businesses of every size, industry, and geography.

Unified communications is a rapidly evolving area, making it harder to predict future requirements. A narrow decision based on a single application - say, instant messaging (IM) - may limit your choices later when it comes to supporting smartphones, tablets, video, or social networking or being able to connect with users on different devices or systems.

The key is to build in sufficient flexibility to accommodate new developments as your needs evolve, while extending the value of your existing IT investments, establishing immediate value, and promoting end-user. The two components of unified communication are IP Telephony & Video Telephony. JSCL is looking at having a world class IP & Video Telephony/Conferencing solution for all of JSCL locations so that a seamless communication backbone network can be built upon using reliabel IP network.

Video Collaboration Solutions simplify working together, face to face, from the browser to the boardroom. Unifying video conferencing and collaboration experiences with the way people work means solutions are intuitive and easy to use, adapting to deliver high-quality interactions anywhere and connecting to more people, places, and processes. This allows you to extend your existing environment and scale the reach and impact of your team. The solutions are designed to be as easy as voice, accessible on any device, and able to deliver experiences that can be better than being there.

5.9 Integrated City Operation Center

The City administration intends to use operations applications for monitoring and operating each of the above services. While each agency delivering each of these solutions will have their own operations applications individually, the true value of Smart City is delivered when there is a consolidated and integrated view of all of these operations for the administrators. Also, when one agency application is able to use the data and intelligence gathered from operations of other agency, not necessarily controlling other agencies operations, civic services are delivered lot of efficiently and in an informed fashion. One of the examples is that when police come to know about the real time status of outdoor lighting, then they will be better informed on where to concentrate their patrolling on. Another example is of the citizens come to know about the good possibility of getting parking in the city center and they don't spend time looking for parking space and thus the traffic on the roads is reduced. The integrated operations platform is expected to enable such transformation of the city operations.

Proposed Solution architecture should have combination of data normalization software and City operation center software

5.9.1 Data Normalization Software

It is envisaged that the JSCL will implement multiple Smart City use cases over a period of time. The potential examples of Smart City use cases are:

- Public Wi-Fi and Urban Service Delivery over Public Wi-Fi
- Smart Outdoor Lighting
- Public Safety and Safe City Operations
- Smart Traffic Management
- Smart Parking
- Environmental Monitoring
- Smart Connected Public Transport Management
- Smart Waste Management
- Smart Communication
- Smart Energy Metering
- Social Media Analytics
- Smart Water Metering
- Kiosks for Citizen Information
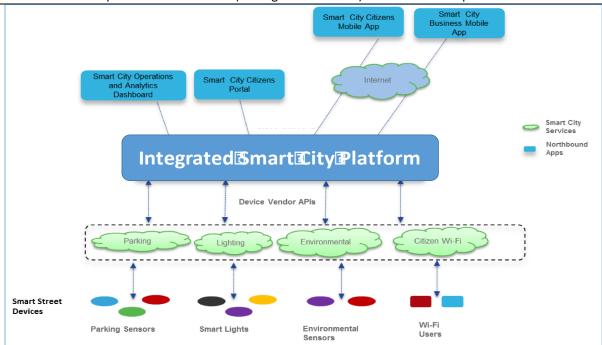- Citizen Interactive Kiosks for Urban Service Delivery

The platform should be able to integrate with any type of sensor platform being used for the urban services irrespective of the technology used.

The platform should be able to normalize the data coming from different devices of the same type (i.e. different lighting sensor from different OEMs, different energy meters from different OEMs etc.) and provide secure access to that data using data API(s) to application developers.

The Smart City Data Normalization Software OEM supplier should be an industry leader and belong to leader quadrant of the **"Navigant Research Leader Board Report for Smart City Supplier"**.

The proposed OEM solution for smart city platform (Data Normalization Software) should be deployed in atleast 1 city in India and 5 cities globally. Bidder to furnish OEM self-certification with the name of the cities.

Sensor platform OEM should provide online Developer Program tools that help City to produce new applications, and/or use solution APIs to enhance or manage existing solution free of cost. OEM should have technology labs via an online public facing web interface. These labs should be available 24X7.
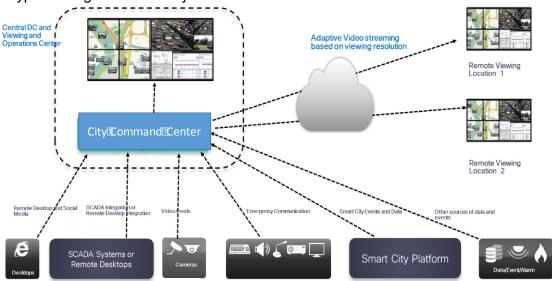
The Figure above represents the **Integrated City Operations Platform** which plays a role of the key middleware platform for delivering Urban Services.

This platform is expected to integrate various urban services devices at the street layer so that urban services applications can be developed on top of this platform independent of the technology that is used in the devices.

5.9.2 City operation center software

City operation center software should Integrate Smart City infrastructure by managing multiple city solutions for city challenges. It should enable data collection and synthesis by translating south-facing street level device data signals into a user-friendly language compatible with north-facing application/solution providers that can be turned around to manage the devices on the ground level.

A typical integration of a City Command Center is shown below:

5.9.3 Professional Services Implementation Requirement

All resources provided from **Bidder/System Integrator** and **OEM** shall be their own resources, i.e., resources provided by the OEM should be directly from the OEM and by Bidder should be directly from the Bidder/SI.

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

5.9.3.1 Project Implementation Scope

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

5.9.3.2 Technology planning& Design

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

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

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

5.9.3.3 Implementation

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

The OEM shall be responsible for Project Management of Complete Implementation phase which includes the following:

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

The SI shall be responsible for the following:

(1) Complete Implementation services
(2) Complete SATP

5.9.3.4 OEM Services Completion

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

5.9.4 Command and Control Center Infrastructure

With the rapid change in mobility and consumption models, organizationsare facing a huge challenge in terms of service delivery infrastructure. All the smart city services that are in discussion today need a robust and scalable data center to host applications, provide security of data and also ensure ease of manageability and scalability. Although it is almost impossible to predict what these services will look like seven years in the future, we can predict what kinds of attributes these services will have and infer from that the kind of infrastructure that will be needed. Following are what is clearly expected of the state of those services in near future.

- a)   All end-user service content will be on-demand
- b)   Users will have ubiquitous access to any access network from any device, with the ability to control and personalize services
- c)   There will be more and more varied over-the-top services from the cloud
- d)   Many of these services will have a short shelf-life
- e)   Service "blending"—where two or more services interact under a unified control scheme—will be the norm

With all these changes fast approaching, Cities need a far more flexible infrastructure, one that can handle any type of service change in a rapid and cost-effective manner. One primary way to address these challenges is consolidating and then virtualizing data center resources. The important points to be considered in designing the Smart City Data Center would be as below:

- a) A highly scalable network and compute infrastructure
- b) A converged infrastructure for ease of operation, management & reduced cost.
- c) Virtualized infrastructure for compute environment and storage
- d) Highly available network and compute infrastructure
- e) Redundant Data centerinfrastructure for business continuity

In this view, the data center will have to be designed with appropriate Switching, Security, Compute and Application infrastructure that will be Unified, Secured, Highly Scalable and most importantly will follow a Pay-As-You-Grow model.

Smart City Data Center Logical Architecture

__Note: The above diagram is for illustration purpose only__

There will be a pair of core switches at DC, where core infrastructure solutions will plug in. Core switches to be proposed with multiple numbers of 1G/10G interfaces so that depending upon the hardware interface requirement, devices can be plugged in. Both the core switches must be highly resilient, available in nature in order to cater existing as well as future requirements. Core switches must also support SDN (Software Defined Network) capabilities so that in future if JSCL wants to implement thecloud-based solution in the DC, it can be done easily.

In order to protect threats coming from the internet layer, Firewall with IPS capabilities must be proposed. The Firewall must have support for minimum 2 x 40G ports so that it can be utilized for future phases as well. Other than this Firewall with IPS, Anti Persistent Threat solution must also be proposed to make JSCL network fully protected from external unknown attacks. Internet routers & WAN routers must also be proposed on which Internet links& WAN links can be terminated respectively.

Connectivity from field-level/junction-network devices (like switches/routers) must also be proposed to the Network Operation Center/Data Center in a most optimal way.

5.9.5 Network Security

Today's advanced malware is increasingly stealthy; organizations can prevent breaches by closing critical security gaps. Attackers are constantly finding new vulnerabilities to exploit. The most advanced threats can disguise themselves in order to evade defenses, waiting for days or even months before striking. Signature-focused security technologies are unable to detect these attacks.

A. Next-Gen Firewall

With JSCL's business transformation towards becoming the Smart City along with transforming all traditional applications to digital footprint, come new attack vectors for adversaries. Mitigating the risk of subversion of JSCL's systems is critical when looking to protect sensitive data. The security solution that JSCL is looking for must include Next-

Gen Firewall (NGFW) in order to defend and increase threat visibility with advanced protection.

Proposed **Next-Gen Firewall** should be purpose-built to protect JSCL network against known and advanced threats and should provide following capabilities:

- **Firewalling:** Enterprise-class firewall, Network Address Translation (NAT) within solutions

- **Granular AVC:** Should support more than 4000 commercial application-layer and risk-based controls. Support capability which enables JSCL to quickly and cost-effectively develop application controls for custom

- **NGIPS:** Solution delivers threat prevention and full contextual awareness of users, infrastructure, applications, and context to detect multi-vector threats and automate defense response. It should passively and automatically recognize evolving network landscape by analyzing network traffic and detecting what's on network. This brings visibility to workstations, servers, mobile devices, VoIP phones, networked printers, virtual machines, routers, switches, and more on JSCL network. This visibility even extends to the OSs on networked devices. With this capability, IPS signatures are auto-tuned to environment thus protecting JSCL network without slowing it down.

- **Security Intelligence:** Security Intelligence provides further data and details for threat analytics and correlation. It includes intelligence based on known bad and suspect IP addresses, URLs, and DNS servers, providing and an additional layer of threat protection.

- **On-box SSL decryption and re-encryption:** Solution can decrypt this traffic to detect attacks, applications, and malware. It also enables re-encryption after inspection where required.

- **Threat Containment:** It should have capability to identify a compromised endpoint and alerts NAC. In turn, Network Access Control (NAC) should be able to quarantine the affected endpoint.

- **Reputation- and category-based URL filtering:** Should blocks high-risk web addresses (for example, gambling and pornographic websites) and offers alerting and control over suspect web traffic. It enforces policies on more than 280 million URLs in more than 80 categories.

B. Anti-APT

Targeted security breaches happen every day. Security teams can defend against these highly damaging attacks by addressing the full attack continuum. Anti-APT solution extends beyond point-in-time capabilities and addresses the full lifecycle of the advanced malware problem—before, during, and after an attack.

Anti-APT offers deep visibility and control to rapidly detect, contain, and remediate threats if they evade front-line defenses. Proposed solution must include the capabilities that extend beyond point-in-time detection to protect across the entire attack continuum. It provides visibility and control to protect against highly sophisticated, targeted, zero-day, and persistent advanced malware threats.

Anti-APT capabilities are expected to be:

- **Advanced detection and blocking:** Detects and blocks malware-infected files attempting to enter or cross the network.
- **Continuous analysis and retrospective alerts:** Provides ongoing analysis and retrospective alerting of infected files. These alerts allow you to take action during and after attacks.
- **Persistent tracking:** Identifies the point of entry, propagation, users, protocols used, and affected host by tracking malware that has entered the network.
- **Contextual data:** Correlates malware-related events with broader security events and contextual data to clearly present malicious activity.

5.9.6 Command Center Workstations

In order to have efficient monitoring of the Smart City Infrastructure and services components, workstations for different profiles are required in order to perform the monitoring, management and support of the various smart city services. Based on the above requirements, a City Operation Center requires the following workstation profiles:

S.NO.	Workstations Profiles	Current Requirement	Future expendability provisioning
1.	2 Screen –Operators Client Workstations for City Operation Centre (Police/Fire/Other Department etc.)	0	4
2.	2 Screen –Operators Client Workstations for Major Smart City Services	4	6
3.	2 Screen – Video Surveillance Operators (for incident based monitoring)	1	2
4.	1 Screen – for Administrator	1	1
5.	2 Screen – WarRoom and Meeting Room with VC Facility (15 person sitting capacity)	1	0
6.	2 Screen – for Training Room	1	1
7.	1 Screen – for Helpdesk Operation	2	1
	Total	**10**	**15**

Section 4: Instructions to Bidder (ITB)

1. **Sale of Bidding/ Tender Documents**

   a) The sale of bidding documents shall be commenced from the date of publication of Notice Inviting Bids (BID DOCUMENT) and shall be stopped three days prior to the date of opening of Bid. The complete bidding document shall also be placed on the State Public Procurement Portal and e-Procurement portal as well as on JAIPUR SMART CITY LIMITED website.

   b) Bidding documents purchased by Principal of any concern may be used by its authorised sole selling agents/ marketing agents/ distributors/ sub-distributors and authorised dealers or vice versa.

3. **Changes in the Bidding Document**

   a) At any time, prior to the deadline for submission of Bids, the procuring entity may for any reason, whether on its own initiative or as a result of a request for clarification by a bidder, modify the bidding documents by issuing an addendum in accordance with the provisions below.

   b) In case, any modification is made to the bidding document or any clarification is issued which materially affects the terms contained in the bidding document, the procuring entity shall publish such modification or clarification in the same manner as the publication of the initial bidding document.

   c) In case, a clarification or modification is issued to the bidding document, the procuring entity may, prior to the last date for submission of Bids, extend such time limit in order to allow the bidders sufficient time to take into account the clarification or modification, as the case may be, while submitting their Bids.

   d) Any bidder, who has submitted his Bid in response to the original invitation, shall have the opportunity to modify or re-submit it, as the case may be, within the period of time originally allotted or such extended time as may be allowed for submission of Bids, when changes are made to the bidding document by the procuring entity: Provided that the Bid last submitted or the Bid as modified by the bidder shall be considered for evaluation.

4. **Period of Validity of Bids**

   a) Bids submitted by the bidders shall remain valid during the period specified in the BID DOCUMENT/ bidding document. A Bid valid for a shorter period shall be rejected by the procuring entity as non-responsive Bid.

   b) Prior to the expiry of the period of validity of Bids, the procuring entity, in exceptional circumstances, may request the bidders to extend the bid validity period for an additional specified period of time. A bidder may refuse the request and such refusal shall be treated as withdrawal of Bid and in such circumstances bid security shall not be forfeited.

c) Bidders that agree to an extension   of the period of validity of their Bids shall extend or get extended the period of validity of bid securities submitted by them or submit new bid securities to cover the extended period of validity of their bids. A bidder whose bid security is not extended, or that has not submitted a new bid security, is considered to have refused the request to extend the period of validity of its Bid.

4. Format and Signing of Bids

a) Bidders must submit their bids online at e-Procurement portal i.e. http://e-eproc.rajasthan.gov.in.

b) All the documents uploaded should be digitally signed with the DSC of authorized signatory.

c) A Single stage Two part/ cover system shall be followed for the Bid: -

   (i)   Technical Bid, including fee details, eligibility & technical documents

   (ii)   Financial Bid

d) The technical bid shall consist of the following documents: -

S. No.	Documents Type	Document Format
1.	All the documents mentioned in the —Eligibility Criteria□, in support of the eligibility	As Per Annexure-3: Technical Bid Evaluation Check List (As per the format mentioned against The respective eligibility criteria clause).

e) Financial bid shall include the following documents: -

S. No.	Documents Type	Document Format
1.	Financial Bid	As per BoQ(.XLS) format available on e-Procurement portal

f) The bidder should ensure that all the required documents, as mentioned in this bidding document, are submitted along with the Bid and in the prescribed format only. Non- submission of the required documents or submission of the documents in a different format/ contents may lead to the rejections of the Bid submitted by the bidder.

5. Cost & Language of Bidding

a) The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the procuring entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

b) The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the procuring entity, shall be written only in English Language. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate

translation of the relevant passages in English/ Hindi language, in which case, for purposes of interpretation of the Bid, such translation shall govern.

6. **Bid Security (EMD):** Every bidder, if not exempted, participating in the procurement process will be required to furnish the bid security as specified in the BID DOCUMENT.

a) In lieu of bid security, a bid securing declaration shall be taken from Departments of the State Government, Undertakings, Corporations, Autonomous bodies, Registered Societies and Cooperative Societies which are owned or controlled or managed by the State Government and Government Undertakings of the Central Government. This bid security exemption certificate from appropriate authority shall be uploaded on JAIPUR SMART CITY LIMITED website portal along with receipt of Bid cost and RISL fees.

b) Bid security instrument or cash receipt of bid security or a bid securing declaration shall necessarily accompany the technical bid.

c) Bid security of a bidder lying with the procuring entity in respect of other bids awaiting decision shall not be adjusted towards bid security for the fresh bids. The bid security originally deposited may, however, be taken into consideration in case bids are re- invited.

d) The bid security may be given in the form of bank guarantee, in specified format as given in the bidding document, of a scheduled bank. The bid security must remain valid thirty days beyond the original or extended validity period of the bid.

e) The issuer of the bid security and the confirmer, if any, of the bid security, as well as the form and terms of the bid security, must be acceptable to the procuring entity.

f) Prior to presenting a submission, a bidder may request the procuring entity to confirm the acceptability of proposed issuer of a bid security or of a proposed confirmer, if required. The procuring entity shall respond promptly to such a request.

g) The bank guarantee presented as bid security shall be got confirmed from the concerned issuing bank. However, the confirmation of the acceptability of a proposed issuer or of any proposed confirmer does not preclude the procuring entity from rejecting the bid security on the ground that the issuer or the confirmer, as the case may be, has become insolvent or has otherwise ceased to be creditworthy.

h) The bid security of unsuccessful bidders shall be refunded soon after final acceptance of successful bid and signing of Agreement and submitting performance security.

i) The Bid security taken from a bidder shall be forfeited, including the interest, if any, in the following cases, namely: -

(i) when the bidder withdraws or modifies its bid after opening of bids;

(ii)   when the bidder does not execute the agreement, if any, after placement of supply / work order within the specified period;

(iii)   when the bidder fails to commence the supply of the goods or service or execute work as per supply / work order within the time specified;

(iv)   when the bidder does not deposit the performance security within specified period after the supply / work order is placed; and

(v)   if the bidder breaches any provision of code of integrity, prescribed for bidders, specified in the bidding document.

j)   Notice will be given to the bidder with reasonable time before bid security (EMD) deposited is forfeited.

k)   No interest shall be payable on the bid security (EMD).

l)   In case of the successful bidder, the amount of bid security may be adjusted in arriving at the amount of the Performance Security, or refunded if the successful bidder furnishes the full amount of performance security.

m)   The procuring entity shall promptly return the bid security after the earliest of the following events, namely:-

(i)   the expiry of validity of bid security;

(ii)   the execution of agreement for procurement and performance security is furnished by the successful bidder;

(iii)   the cancellation of the procurement process; or

(iv)   the withdrawal of bid prior to the deadline for presenting bids, unless the bidding documents stipulate that no such withdrawal is permitted.

7. **Deadline for the submission of Bids** - Bids shall be received online at e-Procurement portal and up to the time and date specified in the BID DOCUMENT.

8. **Withdrawal, Substitution, and Modification of Bids**

a)   If permitted on e-Procurement portal, a Bidder may withdraw its Bid or re-submit its Bid (technical and/ or financial cover) as per the instructions/ procedure mentioned at e-Procurement website under the section "Bidder's Manual Kit".

b)   Bids withdrawn shall not be opened and processes further.

9. **Opening of Bids**

a)   The Bids shall be opened by the Bid Opening Committee on the date and time mentioned in the BID DOCUMENT in the presence of the bidders or their authorised representatives who choose to be present.

b)   The committee may co-opt experienced persons in the committee to conduct the process of Bid opening.

c)   The committee shall prepare a list of the bidders or their representatives attending the opening of Bids and obtain their signatures on the same. The list

shall also contain the representative's name and telephone number and corresponding bidder's names and addresses. The authority letters, if any, brought by the representatives shall be attached to the list. The list shall be signed by all the members of Bid opening committee with date and time of opening of the Bids.

d) All the documents comprising of Technical Bid / Cover shall be opened & downloaded from the e-Procurement website (only for the bidders who have submitted the prescribed fee(s) to JAIPUR SMART CITY LIMITED).

e) The committee shall conduct a preliminary scrutiny of the opened technical Bids to assess the prima-facie responsiveness and ensure that the: -

(i)   bid is accompanied by bidding document fee, bid security or bid securing declaration, and processing fee (if applicable);

(ii)   bid is valid for the period, specified in the bidding document;

(iii)   bid is unconditional and the bidder has agreed to give the required performance security; and

(iv)   other conditions, as specified in the bidding document are fulfilled.

(v)   any other information which the committee may consider appropriate.

f) No Bid shall be rejected at the time of Bid opening except the Bids not accompanied with the proof of payment or instrument of the required price of bidding document, processing fee and bid security.

g) The Financial Bid cover shall be kept unopened and shall be opened later on the date and time intimated to the bidders who qualify in the evaluation of technical Bids.

10.   **Selection Method:** The selection method is Least Cost Based Selection (LCBS or L1).

11.   **Clarification of Bids**

a) To assist in the examination, evaluation, comparison and qualification of the Bids, the bid evaluation committee may, at its discretion, ask any bidder for a clarification regarding its Bid. The committee's request for clarification and the response of the bidder shall be in writing.

b) Any clarification submitted by a bidder with regard to its Bid that is not in response to a request by the committee shall not be considered.

c) No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the committee in the evaluation of the financial Bids.

d) No substantive change to qualification information or to a submission, including changes aimed at making an unqualified bidder, qualified or an unresponsive submission, responsive shall be sought, offered or permitted.

e) All communications generated under this rule shall be included in the record of the procurement proceedings.

12. **Evaluation & Tabulation of Technical Bids**

 Determination of Responsiveness

  The bid evaluation committee shall determine the responsiveness of a Bid on the basis of bidding document and the provisions of eligibility criteria of the bidding document.

  A responsive Bid is one that meets the requirements of the bidding document without any material deviation, reservation, or omission where: -

  i. —deviation is a departure from the requirements specified in the bidding document;

  ii. —reservation is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and

  iii. —Omission is the failure to submit part or all of the information or documentation required in the bidding document.

  A material deviation, reservation, or omission is one that,

  i. if accepted, shall:-

   1. affect in any substantial way the scope, quality, or performance of the subject matter of procurement specified in the bidding documents; or

   2. limits in any substantial way, inconsistent with the bidding documents, the procuring entity's rights or the bidder's obligations under the proposed contract; or

  ii. if rectified, shall unfairly affect the competitive position of other bidders presenting responsive Bids.

  The bid evaluation committee shall examine the technical aspects of the Bid in particular, to confirm that all requirements of bidding document have been met without any material deviation, reservation or omission.

  The procuring entity shall regard a Bid as responsive if it conforms to all requirements set out in the bidding document, or it contains minor deviations that do not materially alter or depart from the characteristics, terms, conditions and other requirements set out in the bidding document, or if it contains errors or oversights that can be corrected without touching on the substance of the Bid.

 Non-material Non-conformities in Bids

  The bid evaluation committee may waive any non-conformity in the Bid that do not constitute a material deviation, reservation or omission, the Bid shall be deemed to be substantially responsive.

☐ The bid evaluation committee may request the bidder to submit the necessary information or document like audited statement of accounts/ CA Certificate, Registration Certificate, VAT/ CST clearance certificate, ISO/ CMMi Certificates, etc. within a reasonable period of time. Failure of the bidder to comply with the request may result in the rejection of its Bid.

☐ The bid evaluation committee may rectify non-material nonconformities or omissions on the basis of the information or documentation received from the bidder under (b) above.

☐ **Technical Evaluation Criteria:** Bids shall be evaluation based on the documents submitted as a part of technical bid. Technical bid shall contain all the documents as asked in the clause —Format and Signing of Bids☐

☐ **Tabulation of Technical Bids**

☐ If Technical Bids have been invited, they shall be tabulated by the bid evaluation committee in the form of a comparative statement to evaluate the qualification of the bidders against the criteria for qualification set out in the bidding document.

☐ The members of bid evaluation committee shall give their recommendations below the table as to which of the bidders have been found to be qualified in evaluation of Technical Bids and sign it.

☐ The number of firms qualified in technical evaluation, if less than three and it is considered necessary by the procuring entity to continue with the procurement process, reasons shall be recorded in writing and included in the record of the procurement proceedings.

☐ The bidders who qualified in the technical evaluation shall be informed in writing about the date, time and place of opening of their financial Bids.

13. **Evaluation & Tabulation of Financial Bids:** Subject to the provisions of —Acceptance of Successful Bid and Award of Contract☐ below, the procuring entity shall take following actions for evaluation of financial Bids:-

a) The financial Bids of the bidders who qualified in technical evaluation shall be opened online at the notified time, date and place by the Bid Opening Committee in the presence of the bidders or their representatives who choose to be present

b) The process of opening of the financial Bids shall be similar to that of technical Bids.

c) the names of the bidders, the rates given by them and conditions put, if any, shall be read out and recorded;

d) Conditional Bids are liable to be rejected;

e) The evaluation shall include all costs and all taxes and duties applicable to the bidder as per law of the Central/ State Government/ Local Authorities, and the evaluation criteria specified in the bidding documents shall only be applied;

f) The offers shall be evaluated and marked L1, L2, L3 etc. L1 being the lowest offer and then others in ascending order in case price is the only criteria, or evaluated and marked H1, H2, H3 etc. in descending order.

g) The bid evaluation committee shall prepare a comparative statement in tabular form in accordance with rules along with its report on evaluation of financial Bids and recommend the lowest offer for acceptance to the procuring entity

h) The members of bids evaluation committee shall give their recommendations below the table regarding lowest Bid or most advantageous Bid and sign it.

i) It shall be ensured that the offer recommended for sanction is justifiable looking to the prevailing market rates of the goods, works or service required to be procured.

14. **Correction of Arithmetic Errors in Financial Bids:** The bid evaluation committee shall correct arithmetical errors in substantially responsive Bids, on the following basis, namely-

a) multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the bid evaluation committee there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

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

c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to clause (a) and (b) above.

15. **Comparison of rates of firms outside and those in Rajasthan:** While tabulating the financial Bids of those firms which are not entitled to price preference, the element of Rajasthan Value Added Tax (RVAT) shall be excluded from the rates quoted by the firms of Rajasthan and the element of Central Sales Tax (CST) shall be included in the rates of firms from outside Rajasthan for financial bid evaluation purpose.

16. **Price/ purchase preference in evaluation:** Price and/ or purchase preference notified by the State Government (GoR) and as mentioned in the bidding document shall be considered in the evaluation of Bids and award of contract.

17. **Negotiations**

a) Except in case of procurement by method of single source procurement or procurement by competitive negotiations, to the extent possible, no negotiations shall be conducted.

b) Negotiations may, however, be undertaken only with the lowest or most advantageous bidder when the rates are considered to be much higher than the prevailing market rates.

c) The bid evaluation committee shall have full powers to undertake negotiations. Detailed reasons and results of negotiations shall be recorded in the proceedings.

d) The lowest or most advantageous bidder shall be informed in writing either through messenger or by registered letter and e-mail (if available). A minimum time of seven days shall be given for calling negotiations. In case of urgency the bid evaluation committee, after recording reasons, may reduce the time, provided the lowest or most advantageous bidder has received the intimation and consented to regarding holding of negotiations.

e) Negotiations shall not make the original offer made by the bidder inoperative. The bid evaluation committee shall have option to consider the original offer in case the bidder decides to increase rates originally quoted or imposes any new terms or conditions.

f) In case of non-satisfactory achievement of rates from lowest or most advantageous bidder, the bid evaluation committee may choose to make a written counter offer to the lowest or most advantageous bidder and if this is not accepted by him, the committee may decide to reject and re-invite Bids or to make the same counter-offer first to the second lowest or most advantageous bidder, then to the third lowest or most advantageous bidder and so on in the order of their initial standing and work/ supply order be awarded to the bidder who accepts the counter-offer. This procedure would be used in exceptional cases only.

g) In case the rates even after the negotiations are considered very high, fresh Bids shall be invited.

18. Exclusion of Bids/ Disqualification

a) A procuring entity shall exclude/ disqualify a Bid, if: -

- the information submitted, concerning the qualifications of the bidder, was false or constituted a misrepresentation; or

- the information submitted, concerning the qualifications of the bidder, was materially Inaccurate or incomplete; and

- the bidder is not qualified as per pre-qualification/ eligibility criteria mentioned in the bidding document;

- the Bid materially departs from the requirements specified in the bidding document or it contains false information;

- the bidder, submitting the Bid, his agent or any one acting on his behalf, gave or agreed to give, to any officer or employee of the procuring entity or other governmental authority a gratification in any form, or any other thing of value, so as to unduly influence the procurement process;

☐ a bidder, in the opinion of the procuring entity, has a conflict of interest materially affecting fair competition.

b) A Bid shall be excluded / disqualified as soon as the cause for its exclusion/disqualification is discovered.

c) Every decision of a procuring entity to exclude a Bid shall be for reasons to be recorded in writing and shall be: -

☐ communicated to the concerned bidder in writing;

☐ published on the State Public Procurement Portal, if applicable.

19. Lack of competition

a) A situation may arise where, if after evaluation of Bids, the bid evaluation committee may end-up with one responsive Bid only. In such situation, the bid evaluation committee would check as to whether while floating the BID DOCUMENT all necessary requirements to encourage competition like standard bid conditions, industry friendly specifications, wide publicity, sufficient time for formulation of
Bids, etc., were fulfilled. If not, the BID DOCUMENT would be re-floated after rectifying deficiencies. The bid process shall be considered valid even if there is one responsive Bid, provided that: -

☐ the Bid is technically qualified;

☐ the price quoted by the bidder is assessed to be reasonable;

☐ the Bid is unconditional and complete in all respects;

☐ there are no obvious indicators of cartelization amongst bidders; and

☐ the bidder is qualified as per the provisions of pre-qualification / eligibility criteria in the bidding document

b) The bid evaluation committee shall prepare a justification note for approval by the next higher authority of the procuring entity, with the concurrence of the accounts member.

c) In case of dissent by any member of bid evaluation committee, the next higher authority in delegation of financial powers shall decide as to whether to sanction the single Bid or re-invite Bids after recording reasons.

d) If a decision to re-invite the Bids is taken, market assessment shall be carried out for estimation of market depth, eligibility criteria and cost estimate.

20. Acceptance of the successful Bid and award of contract

a) The procuring entity after considering the recommendations of the bid evaluation committee and the conditions of Bid, if any, financial implications, trials, sample testing and test reports, etc., shall accept or reject the successful Bid. If any member of the bid evaluation committee has disagreed or given its note of dissent, the matter shall be referred to the next higher authority, as per delegation of financial powers, for decision.

b) Decision on Bids shall be taken within original validity period of Bids and time period allowed to procuring entity for taking decision. If the decision is not taken within the original validity period or time limit allowed for taking decision, the matter shall be referred to the next higher authority in delegation of financial powers for decision.

c) Before award of the contract, the procuring entity shall ensure that the price of successful Bid is reasonable and consistent with the required quality.

d) A Bid shall be treated as successful only after the competent authority has approved the Procurement in terms of that Bid.

e) The procuring entity shall award the contract to the bidder whose offer has been determined to be the lowest or most advantageous in accordance with the evaluation criteria set out in the bidding document and if the bidder has been determined to be qualified to perform the contract satisfactorily on the basis of qualification criteria fixed for the bidders in the bidding document for the subject matter of procurement.

f) Prior to the expiration of the period of bid validity, the procuring entity shall inform the successful bidder, in writing, that its Bid has been accepted.

g) As soon as a Bid is accepted by the competent authority, its written intimation shall be sent to the concerned bidder by registered post or email and asked to execute an agreement in the format given in the bidding documents on a non-judicial stamp of requisite value and deposit the amount of performance security or a performance security declaration, if applicable, within a period specified in the bidding documents or where the period is not specified in the bidding documents then within fifteen days from the date on which the letter of acceptance or letter of intent is dispatched to the bidder.

h) If the issuance of formal letter of acceptance is likely to take time, in the meanwhile a Letter of Intent (LOI) may be sent to the bidder. The acceptance of an offer is complete as soon as the letter of acceptance or letter of intent is posted and/ or sent by email (if available) to the address of the bidder given in the bidding document. Until a formal contract is executed, the letter of acceptance or LOI shall constitute a binding contract.

i) The bid security of the bidders who's Bids could not be accepted shall be refunded soon after the contract with the successful bidder is signed and its performance security is obtained.

21. **Information and publication of award:** Information of award of contract shall be communicated to all participating bidders and published on the respective website(s) as specified in BID DOCUMENT.

22. **Procuring entity's right to accept or reject any or all Bids:** The Procuring entity reserves the right to accept or reject any Bid, and to annul (cancel) the bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the bidders.

23. Right to vary quantity

a) At the time of award of contract, the quantity of goods, works or services originally specified in the bidding documents may be increased as per RTPP Act-2012 and Rules-2013. It shall be without any change in the unit prices or other terms and conditions of the Bid and the bidding documents.

b) If the procuring entity does not procure any subject matter of procurement or procures less than the quantity specified in the bidding documents due to change in circumstances, the bidder shall not be entitled for any claim or compensation except otherwise provided in the bidding document.

c) Repeat orders for extra items or additional quantities may be placed, if it is provided in the bidding document, on the rates and conditions given in the contract if the original order was given after inviting open competitive bids. Delivery or completion period may also be proportionally increased. The limits of the repeat order shall be as under:-

    1. 50% of the quantity of the individual items and 50% of the value of original contract in the case of works; and

    2. 50% of the value of goods or services of the original contract.

24. Performance Security:

a) Prior to execution of agreement, Performance security shall be solicited from all successful bidders except the departments of the State Government and undertakings, corporations, autonomous bodies, registered societies, co-operative societies which are owned or controlled or managed by the State Government and undertakings of the Central Government. However, a performance security declaration shall be taken from them. The State Government may relax the provision of performance security in particular procurement or any class of procurement.

b) The amount of performance security shall be 10% of the contract amount. In case of Small Scale Industries (SSI) of Rajasthan, it shall be 1% of the amount of quantity ordered for supply of goods and in case of sick industries, other than SSI, whose cases are pending before the Board of Industrial and Financial Reconstruction (BIFR), it shall be 2% of the amount of supply order.

c) Performance security shall be furnished in any one of the following forms: -

    ☐ Bank Draft or Banker's Cheque of a scheduled bank;

    ☐ National Savings Certificates and any other script/ instrument under National Savings Schemes for promotion of small savings issued by a Post Office in Rajasthan, if the same can be pledged under the relevant rules. They shall be accepted at their surrender value at the time of bid and formally transferred in the name of procuring entity with the approval of Head Post Master;

    ☐ Bank guarantee/s of a scheduled bank. It shall be got verified from the issuing bank. Other conditions regarding bank guarantee shall be same as mentioned in the bidding document for bid security (EMD);

☐ Fixed Deposit Receipt (FDR) of a scheduled bank and discharged by the bidder in advance. The procuring entity shall ensure before accepting the FDR that the bidder furnishes an undertaking from the bank to make payment/premature payment of the FDR on demand to the procuring entity without requirement of consent of the bidder concerned. In the event of forfeiture of the performance security, the Fixed Deposit shall be forfeited along with interest earned on such Fixed Deposit.

d) Initially the Performance security f o r 1 0 % amount o f t h e C o n t r a c t v a l u e s ha l l b e furnished in the form specified as above, which shall be kept valid upto 90 days beyond the schedule date of completion of the project i.e. 6 months as specified in the BID DOCUMENT; which shall be released after successful implementation of the project and thereafter another Performance Security @10% of the 30% of the Contract Value shall be submitted valid upto 90 days beyond the schedule date of completion of 5 years O&M period after successful completion of the project.

e) Forfeiture of Security Deposit: Security amount in full or part may be forfeited, including interest, if any, in the following cases:-

☐ When any terms and condition of the contract is breached.

☐ When the bidder fails to make complete supply satisfactorily.

☐ if the bidder breaches any provision of code of integrity, prescribed for bidders, specified in the bidding document.

f) Notice will be given to the bidder with reasonable time before PSD deposited is forfeited.

g) No interest shall be payable on the PSD.

25. Execution of agreement

a) A procurement contract shall come into force from the date on which the letter of acceptance or letter of intent is dispatched to the bidder.

b) The successful bidder shall sign the procurement contract within 15 days from the date on which the letter of acceptance or letter of intent is dispatched to the successful bidder.

c) If the bidder, who's Bid has been accepted, fails to sign a written procurement contract or fails to furnish the required performance security within specified period, the procuring entity shall take action against the successful bidder as per the provisions of the bidding document and Act. The procuring entity may, in such case, cancel the procurement process or if it deems fit, offer for acceptance the rates of lowest or most advantageous bidder to the next lowest or most advantageous bidder, in accordance with the criteria and procedures set out in the bidding document.

d) The bidder will be required to execute the agreement on a non-judicial stamp of specified value at its cost and to be purchase from anywhere in Rajasthan only.

26.   Confidentiality

a) Notwithstanding anything contained in this bidding document but subject to the provisions of any other law for the time being in force providing for disclosure of information, a procuring entity shall not disclose any information if such disclosure, in its opinion, is likely to: -

  ☐ impede enforcement of any law;

  ☐ affect the security or strategic interests of India;

  ☐ affect the intellectual property rights or legitimate commercial interests of bidders;

  ☐ affect the legitimate commercial interests of the procuring entity in situations that may include when the procurement relates to a project in which the procuring entity is to make a competitive bid, or the intellectual property rights of the procuring entity.

b) The procuring entity shall treat all communications with bidders related to the procurement process in such manner as to avoid their disclosure to competing bidders or to any other person not authorized to have access to such information.

c) The procuring entity may impose on bidders and sub-contractors, if there are any for fulfilling the terms of the procurement contract, conditions aimed at protecting information, the disclosure of which violates (a) above.

d) In addition to the restrictions specified above, the procuring entity, while procuring a subject matter of such nature which requires the procuring entity to maintain confidentiality, may impose condition for protecting confidentiality of such information.

27.   Cancellation of procurement process

a) If any procurement process has been cancelled, it shall not be reopened but it shall not prevent the procuring entity from initiating a new procurement process for the same subject matter of procurement, if required.

b) A procuring entity may, for reasons to be recorded in writing, cancel the process of procurement initiated by it -

  ☐ at any time prior to the acceptance of the successful Bid; or

  ☐ after the successful Bid is accepted in accordance with (d) and (e) below.

c) The procuring entity shall not open any bids or proposals after taking a decision to cancel the procurement and shall return such unopened bids or proposals.

d) The decision of the procuring entity to cancel the procurement and reasons for such decision shall be immediately communicated to all bidders that participated in the procurement process.

e) If the bidder whose Bid has been accepted as successful fails to sign any written procurement contract as required, or fails to provide any required security for the performance of the contract, the procuring entity may cancel the procurement process.

f) If a bidder is convicted of any offence under the Act, the procuring entity may: -

□ cancel the relevant procurement process if the Bid of the convicted bidder has been declared as successful but no procurement contract has been entered into;

□ rescind (cancel) the relevant contract or forfeit the payment of all or a part of the contract value if the procurement contract has been entered into between the procuring entity and the convicted bidder.

28. Code of Integrity for Bidders

a) No person participating in a procurement process shall act in contravention of the code of integrity prescribed by the State Government.

b) The code of integrity include provisions for: -

□ Prohibiting

i. any offer, solicitation or acceptance of any bribe, reward or gift or any material benefit, either directly or indirectly, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process;

ii. any omission, including a misrepresentation that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation;

iii. any collusion, bid rigging or anti-competitive behavior to impair the transparency, fairness and progress of the procurement process;

iv. improper use of information shared between the procuring entity and the bidders with an intent to gain unfair advantage in the procurement process or for personal gain;

v. any financial or business transactions between the bidder and any officer or employee of the procuring entity;

vi. any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process;

vii. any obstruction of any investigation or audit of a procurement process;

□ disclosure of conflict of interest;

□ disclosure by the bidder of any previous transgressions with any entity in India or any other country during the last three years or of any debarment by any other procuring entity.

c) Without prejudice to the provisions below, in case of any breach of the code of integrity by a bidder or prospective bidder, as the case may be, the procuring entity may take appropriate measures including: -

☐ exclusion of the bidder from the procurement process;

☐ calling-off of pre-contract negotiations and forfeiture or encashment of bid security;

☐ forfeiture or encashment of any other security or bond relating to the procurement;

☐ recovery of payments made by the procuring entity along with interest thereon at bank rate;

☐ cancellation of the relevant contract and recovery of compensation for loss incurred by the procuring entity;

☐ debarment of the bidder from participation in future procurements of the procuring entity for a period not exceeding three years.

29. **Interference with Procurement Process:** A bidder, who: -

a) withdraws from the procurement process after opening of financial bids;

b) withdraws from the procurement process after being declared the successful bidder;

c) fails to enter into procurement contract after being declared the successful bidder;

d) fails to provide performance security or any other document or security required in terms of the bidding documents after being declared the successful bidder, without valid grounds, shall, in addition to the recourse available in the bidding document or the contract, be punished with fine which may extend to fifty lakh rupees or ten per cent of the assessed value of procurement, whichever is less.

30. **Appeals**

a) Subject to —Appeal not to lie in certain cases☐ below, if any bidder or prospective bidder is aggrieved that any decision, action or omission of the procuring entity is in contravention to the provisions of the Act or the rules or guidelines issued thereunder, he may file an appeal to such officer of the procuring entity, as may be designated by it for the purpose, within a period of 10 days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved:

☐ Provided that after the declaration of a bidder as successful in terms of —Award of Contract☐, the appeal may be filed only by a bidder who has participated in procurement proceedings:

☐ Provided further that in case a procuring entity evaluates the technical Bid before the opening of the financial Bid, an appeal related to the matter of

financial Bid may be filed only by a bidder whose technical Bid is found to be acceptable.

b) The officer to whom an appeal is filed under (a) above shall deal with the appeal as expeditiously as possible and shall endeavour to dispose it of within 30 days from the date of filing of the appeal.

c) If the officer designated under (a) above fails to dispose of the appeal filed under that sub-section within the period specified in (c) above, or if the bidder or prospective bidder or the procuring entity is aggrieved by the order passed, the bidder or prospective bidder or the procuring entity, as the case may be, may file a second appeal to an officer or authority designated by the State Government in this behalf within 15 days from the expiry of the period specified in (c) above or of the date of receipt of the order passed under (b) above, as the case may be.

d) The officer or authority to which an appeal is filed under (c) above shall deal with the appeal as expeditiously as possible and shall endeavour to dispose it of within 30 days from the date of filing of the appeal:

e) The officer or authority to which an appeal may be filed under (a) or (d) above shall be: **First Appellate Authority:** Secretary / Additional Chief Secretary, Urban Development and Housing, Secretariat, Jaipur (Rajasthan).

Second Appellate Authority: Nominee from Finance Department Government of Rajasthan.

Filing an appeal

f) Form of Appeal:

☐ Every appeal under (a) and (c) above shall be as per Annexure available in BID DOCUMENT along with as many copies as there are respondents in the appeal.

☐ Every appeal shall be accompanied by an order appealed against, if any, affidavit verifying the facts stated in the appeal and proof of payment of fee.

☐ Every appeal may be presented to First Appellate Authority or Second Appellate Authority, as the case may be, in person or through registered post or authorised representative.

g) Fee for Appeal: Fee for filing appeal:

☐ Fee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non-refundable.

☐ The fee shall be paid in the form of bank demand draft or banker's cheque of a Scheduled Bank payable in the name of Appellate Authority concerned.

h) Procedure for disposal of appeal:

☐ The First Appellate Authority or Second Appellate Authority, as the case may be, upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.

☐ On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be, shall,-

i. hear all the parties to appeal present before him; and

ii. peruse or inspect documents, relevant records or copies thereof relating to the matter.

☐ After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.

☐ The order passed under (c) shall also be placed on the State Public Procurement Portal.

i) No information which would impair the protection of essential security interests of India, or impede the enforcement of law or fair competition, or prejudice the legitimate commercial interests of the bidder or the procuring entity, disclose shall be d in a proceeding under an appeal.

31. **Stay of procurement proceedings:** While hearing of an appeal, the officer or authority hearing the appeal may, on an application made in this behalf and after affording a reasonable opportunity of hearing to the parties concerned, stay the procurement proceedings pending disposal of the appeal, if he, or it, is satisfied that failure to do so is likely to lead to miscarriage of justice.

32. **Vexatious Appeals & Complaints:** Whoever intentionally files any vexatious, frivolous or Malicious appeal or complaint under the ―The Rajasthan Transparency Public Procurement Act 2012‖, with the intention of delaying or defeating any procurement or causing loss to any procuring entity or any other bidder, shall be punished with fine which may extend to twenty lakh rupees or five per cent of the value of procurement, whichever is less.

33. **Offenses by Firms/ Companies**

a) Where an offence under ―The Rajasthan Transparency Public Procurement Act 2012‖ has been committed by a company, every person who at the time the offence was committed was in charge of and was responsible to the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of having committed the offence and shall be liable to be proceeded against and punished accordingly:

Provided that nothing contained in this sub-section shall render any such person liable for any punishment if he proves that the offence was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such offence.

b) Notwithstanding anything contained in (a) above, where an offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of having committed such offence and shall be liable to be proceeded against and punished accordingly.

c) For the purpose of this section-

☐ "Company" means a body corporate and includes a limited liability partnership, firm, registered society or co-operative society, trust or other association of individuals; and

☐ — Director" in relation to a limited liability partnership or firm, means a partner in the firm.

d) Abetment of certain offenses: Whoever abets an offence punishable under this Act, whether or not that offence is committed in consequence of that abetment, shall be punished with the punishment provided for the offence.

34. Debarment from Bidding

a) A bidder shall be debarred by the State Government if he has been convicted of an offence

☐ under the Prevention of Corruption Act, 1988 (Central Act No. 49 of 1988); or

☐ under the Indian Penal Code, 1860 (Central Act No. 45 of 1860) or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a public procurement contract.

b) A bidder debarred under (a) above shall not be eligible to participate in a procurement process of any procuring entity for a period not exceeding three years commencing from the date on which he was debarred.

c) If a procuring entity finds that a bidder has breached the code of integrity prescribed in terms of —Code of Integrity for bidders☐ above, it may debar the bidder for a period not exceeding three years.

d) Where the entire bid security or the entire performance security or any substitute thereof, as the case may be, of a bidder has been forfeited by a procuring entity in respect of any procurement process or procurement contract, the bidder may be debarred from participating in any procurement process undertaken by the procuring entity for a period not exceeding three years.

e) The State Government or a procuring entity, as the case may be, shall not debar a bidder under this section unless such bidder has been given a reasonable opportunity of being heard.

35. Monitoring of Contract

a) An officer or a committee of officers named Contract Monitoring Committee (CMC) may be nominated by procuring entity to monitor the progress of the contract during its delivery period.

b) During the delivery period the CMC shall keep a watch on the progress of the contract and shall ensure that quantity of goods and service delivery is in proportion to the total delivery period given, if it is a severable contract, in which the delivery of the goods and service is to be obtained continuously or is batched. If the entire quantity of goods and service is to be delivered in the form of completed work or entire contract like fabrication work, the process of completion of work may be watched and inspections of the selected bidder's premises where the work is being completed may be inspected.

c) If delay in delivery of goods and service is observed a performance notice would be given to the selected bidder to speed up the delivery.

d) Any change in the constitution of the firm, etc. shall be notified forth with by the contractor in writing to the procuring entity and such change shall not relieve any former member of the firm, etc., from any liability under the contract.

e) No new partner/ partners shall be accepted in the firm by the selected bidder in respect of the contract unless he/ they agree to abide by all its terms, conditions and deposits with the procuring entity through a written agreement to this effect. The bidder's receipt for acknowledgement or that of any partners subsequently accepted as above shall bind all of them and will be sufficient discharge for any of the purpose of the contract.

f) The selected bidder shall not assign or sub-let his contract or any substantial part thereof to any other agency without the permission of procuring entity.

Section 5: General Terms & Condition of Bid & Contract

Bidders should read these conditions carefully and comply strictly while sending their bids.

1. **Definitions:** For the purpose of clarity, the following words and expressions shall have the meanings hereby assigned to them: -

    a) ―Contract‖ means the Agreement entered into between the Purchaser and the successful/ selected bidder, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.

    b) ―Contract Documents‖ means the documents listed in the Agreement, including any amendments thereto.

    c) ―Contract Price‖ means the price payable to the successful/ selected bidder as specified in the Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.

    d) ―Day‖ means a calendar day.

    e) ―Delivery‖ means the transfer of the Goods from the successful/ selected bidder to the Purchaser in accordance with the terms and conditions set forth in the Contract.

    f) ―Completion‖ means the fulfilment of the related services by the successful/ selected bidder in accordance with the terms and conditions set forth in the Contract.

    g) ―Goods‖ means all of the commodities, raw material, machinery and equipment, and/or other materials that the successful/ selected bidder is required to supply to the Purchaser under the Contract.

    h) ―Purchaser‖ means the entity purchasing the Goods and related services, as specified in the bidding document.

    i) ―Related Services‖ means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the successful/ selected bidder under the Contract.

    j) ―Subcontractor‖ means any natural person, private or government entity, or a combination of the above, including its legal successors or permitted assigns, to whom any part of the Goods to be supplied or execution of any part of the related services is subcontracted by the successful/ selected bidder.

    k) ―Supplier/ Successful or Selected bidder‖ means the person, private or government entity, or a combination of the above, whose Bid to perform the Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the successful/ selected bidder.

l) ―The Site,☐ where applicable, means the designated project place(s) named in the bidding document.

Note: The bidder shall be deemed to have carefully examined the conditions, specifications, size, make and drawings, etc., of the goods to be supplied and related services to be rendered. If the bidder has any doubts as to the meaning of any portion of these conditions or of the specification, drawing, etc., he shall, before submitting the Bid and signing the contract refer the same to the procuring entity and get clarifications.

2. **Contract Documents:** Subject to the order of precedence set forth in the Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory.

3. **Interpretation**

   a) If the context so requires it, singular means plural and vice versa.

   b) Entire Agreement: The Contract constitutes the entire agreement between the Purchaser and the Supplier/ Selected bidder and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

   c) Amendment: No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

   d) Non-waiver: Subject to the condition (f) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall
   prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

   e) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

   f) Severability: If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

4. **Language**

   a) The Contract as well as all correspondence and documents relating to the Contract exchanged by the successful / selected bidder and the Purchaser, shall be written in English language only. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language

specified in the special conditions of the contract, in which case, for purposes of interpretation of the Contract, this translation shall govern.

b) The successful / selected bidder shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

5. Eligible Goods and Related Services

a) For purposes of this Clause, the term goods includes commodities, raw material, machinery, equipment, and industrial plants; and related services

includes services such as insurance, transportation, supply, installation, integration, testing, commissioning, training, and initial maintenance.

b) The OEM / Vendor of the quoted product must have its own registered spares depot in India having adequate inventory of the equipment being quoted for providing the necessary spares within next business day or maximum 30 hours.

c) The OEM / Vendor of the quoted product should also have its direct representation in India in terms of registered office for at least past 3 years. The presence through any Distribution / System Integration partner agreement will not be accepted.

d) Bidder must quote products in accordance with above clause Eligible goods and related services.

6. Notices

a) Any notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the contract. The term —in writing□ means communicated in written form with proof of dispatch and receipt.

b) A Notice shall be effective when delivered or on the Notice's effective date, whichever is later.

7. Governing Law: The Contract shall be governed by and interpreted in accordance with the laws of the Rajasthan State / the Country (India), unless otherwise specified in the contract.

8. Scope of Supply

a) Subject to the provisions in the bidding document and contract, the goods and related services to be supplied shall be as specified in the bidding document.

b) Unless otherwise stipulated in the Contract, the scope of supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining delivery and completion of the goods and related services as if such items were expressly mentioned in the Contract.

c) The bidder shall not quote and supply and hardware that is likely to be declared as End of Sale in next 12 months and End of Service / Support for a period of 24 months from the last date of bid submission. OEMs are required to mention this in the MAF for all the quoted hardware. If any of the hardware is found to be

declared as End of Sale/ Service/ Support, then the bidder shall replace all such hardware with the latest ones having equivalent or higher specifications without any financial obligation to the purchaser.

9. **Delivery**

a) Subject to the conditions of the contract, the delivery of the goods and completion of the related services shall be in accordance with the delivery and completion schedule specified in the bidding document. The details of supply / shipping and other documents to be furnished by the successful/ selected bidder are specified in the bidding document and / or contract.

b) The contract for the supply can be repudiated at any time by the purchase officer, if the supplies are not made to his satisfaction after giving an opportunity to the bidder of being heard and recording the reasons for repudiation.

c) The Supplier/ Selected Bidder shall arrange to supply, install the ordered materials / system as per specifications within the specified delivery / completion period at offices / locations mentioned in the PO / WO.

d) Shifting the place of delivery: The user will be free to shift the place of delivery within the same city / town / district/ division. The successful/ selected bidder shall provide all assistance, except transportation, in shifting of the equipment. However, if the city/town is changed, additional charges of assistance in shifting and providing maintenance services for remaining period would be decided mutually.

10. **Supplier's/ Selected Bidder's Responsibilities:** The Supplier / Selected Bidder shall supply all the goods and related services included in the scope of supply in accordance with the provisions of bidding document and / or contract.

11. **Purchaser's Responsibilities**

a) Whenever the supply of goods and related services requires that the Supplier/ Selected Bidder obtain permits, approvals, and import and other licenses from local public authorities, the Purchaser shall, if so required by the Supplier/ Selected Bidder, make its best effort to assist the Supplier / Selected Bidder in complying with such requirements in a timely and expeditious manner.

b) The Purchaser shall pay all costs involved in the performance of its responsibilities, in accordance with the general and special conditions of the contract.

12. **Contract Price**

a) The Contract Price shall be paid as specified in the contract subject to any additions and adjustments thereto, or deductions there from, as may be made pursuant to the Contract.

b) Prices charged by the Supplier/ Selected Bidder for the Goods delivered and the Related Services performed under the Contract shall not vary from the prices

quoted by the Supplier/ Selected Bidder in its bid, with the exception of any price adjustments authorized in the special conditions of the contract.

13. **Recoveries from Supplier/ Selected Bidder**

   a) Recovery of liquidated damages, short supply, breakage, rejected articles shall be made ordinarily from bills.

   b) The Purchase Officer shall withhold amount to the extent of short supply, broken / damaged or for rejected articles unless these are replaced satisfactorily. In case of failure to withhold the amount, it shall be recovered from his dues and performance security deposit available with JAIPUR SMART CITY LIMITED.

   c) The balance, if any, shall be demanded from the Supplier / Selected Bidder and when recovery is not possible, the Purchase Officer shall take recourse to law in force.

14. **Taxes & Duties**

   a) The income tax, service tax, value added tax, etc., if applicable, shall be deducted at source from the payment to the Supplier / Selected Bidder as per the law in force at the time of execution of contract.

   b) The entry tax, if applicable shall be deducted at source and deposited in the government Treasury in proper revenue receipt head of account.

   c) For goods supplied from outside India, the successful / selected bidder shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the country.

   d) For goods supplied from within India, the successful / selected bidder shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

   e) Revision in VAT and Service Tax shall be on account of the tendering authority if it has been asked for separately in the financial bid and is not taken into account for the purpose of comparison of bids. If, however, they have not been asked for separately, any benefit or additional cost will be on account of the bidder. Revision of any other tax or duty shall be on account of the bidder.

   f) If any tax exemptions, reductions, allowances or privileges may be available to the successful/ selected bidder in India, the Purchaser shall use its best efforts to enable the successful/ selected bidder to benefit from any such tax savings to the maximum allowable extent.

15. **Copyright:** The copyright in all drawings, design documents, source code and other materials containing data and information furnished to the Purchaser by the Supplier / Selected Bidder herein shall remain vested in the Selected Bidder, or, if they are furnished to the Purchaser directly or through the Supplier / Selected Bidder by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

16. Confidential Information

a) The Purchaser and the Supplier / Selected Bidder shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any drawings, documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract.

b) The Supplier/ Selected Bidder may furnish to its Subcontractor, if permitted, such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier/ Selected Bidder shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier/ Selected Bidder.

c) The Purchaser shall not use such documents, data, and other information received from the Supplier/ Selected Bidder for any purposes unrelated to the Contract. Similarly, the Supplier / Selected Bidder shall not use such documents, data, and other information received from the Purchaser for any purpose other than the design, procurement, or other work and services required for the performance of the Contract.

d) The obligation of a party under sub-clauses above, however, shall not apply to information that: -

☐ the Purchaser or Supplier / Selected Bidder need to share with JAIPUR SMART CITY LIMITED or other institutions participating in the Contract;

☐ now or hereafter enters the public domain through no fault of that party;

☐ can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

☐ otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

e) The above provisions shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the supply or any part thereof.

f) The provisions of this clause shall survive completion or termination, for whatever reason, of the Contract.

17. Sub-contracting

a) Unless otherwise specified in the Contract, the bidder shall not assign or sub-let his contract or any substantial part thereof to any other agency without the permission of Purchaser / Tendering Authority.

b) If permitted, the selected bidder shall notify the Purchaser, in writing, of all subcontracts awarded under the Contract, if not already specified in the Bid.

Subcontracting shall in no event relieve the Supplier/ Selected Bidder from any of its obligations, duties, responsibilities, or liability under the Contract.

c) Subcontracts shall comply with the provisions of bidding document and/ or contract.

18. **Specifications and Standards**

a) All articles supplied shall strictly conform to the specifications, trademark laid down in the tender form and wherever articles have been required according to ISI / ISO / other applicable specifications / certifications / standards, those articles should conform strictly to those specifications / certifications / standards. The supply shall be of best quality and description. The decision of the competent authority/ purchase committee whether the article supplied conforms to the specifications shall be final and binding on the supplier / selected bidder.

b) Technical Specifications and Drawings

   a. The Supplier/ Selected Bidder shall ensure that the goods and related services comply with the technical specifications and other provisions of the Contract.
   b. The Supplier/ Selected Bidder shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
   c. The goods and related services supplied under this Contract shall conform to the standards mentioned in bidding document and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the country of origin of the Goods.

c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the bidding document. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with the general conditions of the contract.

d) The supplier/ selected bidder must certify that all the goods are new, unused, and of the agreed make and models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

e) The supplier/ selected bidder should further warrant that the Goods shall be free from defects arising from any act or omission of the supplier/ selected bidder or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the place of final destination.

19. **Packing and Documents**

a) The Supplier / Selected Bidder shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final

destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination of the Goods and the absence of heavy handling facilities at all points in transit.

b) The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the contract, and in any other instructions ordered by the Purchaser.

20. Insurance

a) The Goods supplied under the Contract shall be fully insured against loss by theft, destruction or damage incidental to manufacture or acquisition, transportation, storage, fire, flood, under exposure to weather and delivery at the designated project locations, in accordance with the applicable terms. The insurance charges will be borne by the supplier and Purchaser will not be required to pay such charges if incurred.

b) The goods will be delivered at the FOR destination in perfect condition.

21. Transportation

a) The supplier / selected bidder shall be responsible for the proper packing so as to avoid damage under normal conditions of transport by sea, rail and road or air and delivery of the material in the good condition to the consignee at destination. In the event of any loss, damage, breakage or leakage or any shortage the bidder shall be liable to make good such loss and shortage found at the checking / inspection of the material by the Consignee. No extra cost on such account shall be admissible.

b) All goods must be sent freight paid through Railways or goods transport. If goods are sent freight to pay, the freight together with departmental charge @5% of the freight will be recovered from the supplier's / selected bidder's bill.

22. Inspection

a) The Purchase Officer or his duly authorized representative shall at all reasonable time have access to the supplier's / selected bidder's premises and shall have the power at all reasonable time to inspect and examine the materials and workmanship of the goods / equipment / machineries during manufacturing process or afterwards as may be decided.

23. Inspection / Testing charges: Inspection / Testing charges (for engaging third party if any) shall be borne by the supplier/ bidder/ selected bidder.

24. Rejection

a) Articles / Goods not approved during inspection or testing shall be rejected and will have to be replaced by the selected bidder at his own cost within the time fixed by the Purchase Officer.

b) If, however, due to exigencies of work, such replacement either in whole or in part, is not considered feasible, the Purchase Officer after giving an opportunity to the selected bidder of being heard shall for reasons to be recorded, deduct a suitable amount from the approved rates. The deduction so made shall be final.

c) The rejected articles / goods shall be removed by the supplier/ bidder/ selected bidder within 15 days of intimation of rejection, after which Purchase Officer shall not be responsible for any loss, shortage or damage and shall have the right to dispose of such articles as he thinks fit, at the selected bidder's risk and on his account.

25. Extension in Delivery Period and Liquidated Damages (LD)

a) Except as provided under clause Force Majeure, if the supplier/ selected bidder fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in (d) below for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the bidding document and / or contract. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to clause Termination.

b) The time specified for delivery in the tender form shall be deemed to be the essence of the contract and the supplier/ selected bidder shall arrange goods supply and related services within the specified period.

c) Delivery and installation / completion period may be extended with or without liquidated damages, if the delay in the supply of goods or service is on account of hindrances beyond the control of the supplier / selected bidder.

    a. The supplier / selected bidder shall request in writing to the Purchaser giving reasons for extending the delivery period of service, if he finds himself unable to complete the supply of goods or service within the stipulated delivery period or is unable to maintain prorate progress in the supply of goods or service delivery. This request shall be submitted as soon as a hindrance in delivery of goods and service occurs or within 15 days from such occurrence but before expiry of stipulated period of completion of delivery of goods and service after which such request shall not be entertained.

    b. The Purchaser shall examine the justification of causes of hindrance in the delivery of goods and service and the period of delay occurred due to that

and recommend the competent authority on the period of extension which should be granted with or without liquidated damages.

c. Normally, extension in delivery period of goods and service in following circumstances may be considered without liquidated damages:

   i. When delay has occurred due to delay by JAIPUR SMART CITY LIMITED in performing any of the duties to be performed by them as mentioned in the Chapter titled Scope of Work, Deliverables and Timelines.

   ii. When delay has occurred in supply of materials etc. if these were required to be supplied to the supplier or service provider by JAIPUR SMART CITY LIMITED as per terms of the contract.

d. If the competent authority agrees to extend the delivery period/ schedule, an amendment to the contract with suitable denial clauses and with or without liquidated damages, as the case may be, shall be issued. The amendment letter shall mention that no extra price or additional cost for any reason, what so ever beyond the contracted cost shall be paid for the delayed supply of goods and service.

e. It shall be at the discretion of the concerned authority to accept or not to accept the supply of goods and / or services rendered by the contractor after the expiry of the stipulated delivery period, if no formal extension in delivery period has been applied and granted. The competent authority shall have right to cancel the contract with respect to undelivered goods and/ or service.

f. If JAIPUR SMART CITY LIMITED is in need of the good and / or service rendered after expiry of the stipulated delivery period, it may accept the services and issue a letter of extension in delivery period with usual liquidated damages and denial clauses to regularize the transaction.

d) **Liquidated Damages/Penalty for delay**: In case of extension in the delivery and/or installation/completion/commissioning period is granted with penalty / liquidated damages, the recovery for the un-finished work on pro-rata basis for each milestone, shall be made on the basis of following percentages of value of goods and/or service which the supplier / selected bidder has failed to supply or complete for the individual milestone as in the RFP : -

No.	Condition	LD %*
A	Delay up to one fourth period of the prescribed delivery period & completion of work	2.5 %
B	Delay exceeding one fourth but not exceeding half of the prescribed delivery period & completion of work	5.0 %
C	Delay exceeding half but not exceeding three fourth of the prescribed delivery period & completion of work	7.5 %
D	Delay exceeding three fourth of the prescribed delivery period, & completion of work	10.0 %

a. Fraction of a day in reckoning period of delay in supplies, successful installation and completion of work shall be eliminated, if it is less than half a day.

b. The maximum amount of liquidated damages shall be 10% for the individual milestone

c. The percentage refers to the payment due for the associated milestone.

d. The LD shall be levied if delay is attributable to the Bidder only.

26. **Risk & Cost:** If successful bidder fails to complete the milestone(s) the same will be got executed by another participated firm and the expenses incurred in this account will be charged by the bidder.

27. **Price Fall Clause:** The prices under a rate contract shall be subject to price fall clause of Act.

28. **Limitation of Liability:** Except in cases of gross negligence or willful misconduct: -

a) neither party shall be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier / selected bidder to pay liquidated damages to the Purchaser; and

b) the aggregate liability of the supplier/selected bidder to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed the amount specified in the Contract, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier / selected bidder to indemnify the Purchaser with respect to patent infringement.

29. **Change in Laws & Regulations:** Unless otherwise specified in the Contract, if after the date of the Invitation for Bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in Rajasthan/ India, where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and / or the Contract Price, then such Delivery Date and/ or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited, if the same has already been accounted for in the price adjustment provisions where applicable.

30. **Force Majeure**

a) The supplier / selected bidder shall not be liable for forfeiture of its PSD, LD, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

b) For purposes of this Clause, Force Majeure means an event or situation beyond the control of the supplier / selected bidder that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the supplier / selected bidder. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

c) If a Force Majeure situation arises, the supplier/ selected bidder shall promptly notify the JAIPUR SMART CITY LIMITED in writing of such conditions and cause thereof within 15 days of occurrence of such event. Unless otherwise directed by JAIPUR SMART CITY LIMITED, the supplier / selected bidder shall continue to perform its obligations under the contract as far as reasonably practical.

d) If the performance in whole or part or any obligation under the contract is prevented or delayed by any reason of Force Majeure for a period exceeding 60 days, either party at its option may terminate the contract without any financial repercussion on either side.

e) In case a Force Majeure situation occurs with the JAIPUR SMART CITY LIMITED, the JAIPUR SMART CITY LIMITED may take the case with the supplier / selected bidder on similar lines.

31. Change Orders and Contract Amendments

a) The Purchaser may at any time order the supplier / selected bidder through Notice in accordance with clause Notices above, to make changes within the general scope of the Contract in any one or more of the following: -

   a. drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;

   b. the method of shipment or packing;

   c. the place of delivery; and

   d. the related services to be provided by the supplier/ selected bidder.

b) If any such change causes an increase or decrease in the cost of, or the time required for, the supplier's/ selected bidder's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly should be amended. Any claims by the supplier / selected bidder for adjustment under this clause must be asserted within thirty (30) days from the date of the supplier's / selected bidder's receipt of the Purchaser's change order.

c) Prices to be charged by the supplier / selected bidder for any related services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier / selected bidder for similar services.

32. Termination

a) Termination for Default

☐ The tender sanctioning authority of JAIPUR SMART CITY LIMITED may, without prejudice to any other remedy for breach of contract, by a written notice of default of at least 30 days sent to the supplier/ selected bidder, terminate the contract in whole or in part: -

   i. If the supplier/ selected bidder fails to deliver any or all quantities of the service within the time period specified in the contract, or any extension thereof granted by JAIPUR SMART CITY LIMITED; or

   ii. If the supplier/ selected bidder fails to perform any other obligation under the contract within the specified period of delivery of service or any extension granted thereof; or

   iii. If the supplier/ selected bidder, in the judgement of the Purchaser, is found to be engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the contract.

   iv. If the supplier/ selected bidder commits breach of any condition of the contract.

☐ If JAIPUR SMART CITY LIMITED terminates the contract in whole or in part, full amount of PSD shall stand forfeited.

☐ Before cancelling a contract and taking further action, advice of senior most finance person available in the office and of legal adviser or legal assistant posted in the office, if there is one, may be obtained.

b) Termination for Insolvency

Termination for Insolvency: JAIPUR SMART CITY LIMITED may at any time terminate the Contract by giving a written notice of at least 30 days to the supplier / selected bidder, if the supplier / selected bidder becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the supplier / selected bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to JAIPUR SMART CITY LIMITED.

c) Termination for Convenience

☐ JAIPUR SMART CITY LIMITED, by a written notice of at least 30 days sent to the supplier / selected bidder, may terminate the Contract, in whole or in part, at any time for its
convenience. The Notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the supplier / selected bidder under the Contract is terminated, and the date upon which such termination becomes effective.

☐ Depending on merits of the case the supplier / selected bidder may be appropriately compensated on mutually agreed terms for the loss incurred by the contract if any due to such termination.

☐ The Goods that are complete and ready for shipment within twenty-eight (28) days after the supplier's/ selected bidder's receipt of the Notice of termination

shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

i. To have any portion completed and delivered at the Contract terms and prices; and/or

ii. To cancel the remainder and pay to the supplier / selected bidder an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the supplier/ selected bidder.

33. Settlement of Disputes

a) **General:** If any dispute arises between the supplier / selected bidder and JAIPUR SMART CITY LIMITED during the execution of a contract that should be amicably settled by mutual discussions. However, if the dispute is not settled by mutual discussions, a written representation will be obtained from the supplier/ selected bidder on the points of dispute. The representation so received shall be examined by the concerned Procurement Committee which sanctioned the tender. The Procurement Committee may take legal advice of a counsel and then examine the representation. The supplier / selected bidder will also be given an opportunity of being heard. The Committee will take a decision on the representation and convey it in writing to the supplier / selected bidder.

b) **Standing Committee for Settlement of Disputes:** If a question, difference or objection arises in connection with or out of the contract / agreement or the meaning of operation of any part, thereof or the rights, duties or liabilities of either party have not been settled by mutual discussions or the decision of tender sanctioning Procurement Committee, it shall be referred to the empowered standing committee as decided by JAIPUR SMART CITY LIMITED for decision.

c) **Procedure for reference to the Standing Committee:** The supplier / selected bidder shall present his representation to the Procuring Entity along with a fee equal to two percent of the amount of dispute, not exceeding Rupees One Lakh, within one month from the date of communication of decision of the tender sanctioning Procurement Committee. The officer-in-charge of the project who was responsible for taking delivery of the goods and/ or service from the supplier/ selected bidder shall prepare a reply of representation and shall represent the JAIPUR SMART CITY LIMITED's stand before the standing committee. From the side of the supplier / selected bidder, the claim case may be presented by himself or through a lawyer. After hearing both the parties, the standing committee shall announce its decision which shall be final and binding both on the supplier/ selected bidder and JAIPUR SMART CITY LIMITED. The standing committee, if it so decides, may refer the matter to the empowered committee as decided by JAIPUR SMART CITY LIMITED.

d) **Legal Jurisdiction:** All legal proceedings arising out of any dispute between both the parties regarding a contract shall be settled by a competent court having jurisdiction over the place, where agreement has been executed and by no other court, after decision of the standing committee for settlement of disputes.

Section 6: Special Terms & Conditions of Bid & Contract

1. **Contracting:** Under this contract Sub-Contracting is not allowed by the successful bidder(s).

2. **Project/Contract Period**: The successful Bidder is expected to carry out all ground work before start the services in direction of Nodal Officer of this project. Initially the contract period shall be as per delivery schedule mentioned in the bid document. The contract period can be extended for another period on mutual consent on approved rates as per Act.

3. **Delivery and Start of Services:** The successful Bidder will start the services as per the date mentioned in the Award of Contract (AoC)/Work Order which will also be treated as the start of project date.

4. **Manpower**

   a) The operational manpower will work under the guidance of Nodal Officer, JAIPUR SMART CITY LIMITED.

   b) The successful bidder will submit the list required professional manpower along with their CVs to the Nodal Officer, JAIPUR SMART CITY LIMITED.

   c) The professional shall be entitled for Government Holidays. However, on Government Holidays the services may be asked for as per the need without any extra cost.

   d) If there is a need to replace an existing professional manpower requested by the Nodal officer the bidder will replace the same within 3 days.

   e) If the bidder and /or his employees are found to be directly or indirectly involved in any unwanted activities, his services would be discounted / terminated. The bidder is responsible for the character of the all employees provided by him.

   f) The legal biding as per the industries dispute act. Payment of wages act., contract labour Act., and others pertaining to Civil/Criminal legislation, Medical claim if any, are the obligations of the bidder. The JAIPUR SMART CITY LIMITED would have no responsibility for the same.

   g) It is the responsibility of the bidder to provide payments, and other facilities as per the nominal wages in accordance with the law. All issues pertaining to the same would be dealt with by the bidder. The JAIPUR SMART CITY LIMITED would have no role in this.

   h) The State insurance, Provident Fund, Pension Gratuity, leaves, wages etc. as applicable, would have to be provided by the bidder and he would also be accountable for the employees. If for any reason, legal proceeding is undertaken against any employee, the bidder shall bear the responsibility. The JAIPUR SMART CITY LIMITED would not represent the same.

i) JAIPUR SMART CITY LIMITED shall not have any liability/pay compensation towards any injury/ accident to the firm's employee while carrying out the maintenance/repair work under this contract.

j) The bidder should also ascertain that as per contract the employees would not from any group/union etc. and would also not participate in such nor represent the same. If such incidence comes under the notice of the JAIPUR SMART CITY LIMITED, it would terminate the contract.

k) If the professionals to be deputed for the project remain absent, a suitable substitute shall immediately be provided. Penalty on non-availability of manpower resources is are :-

Type of Professional	Penalty on non-availability of resource
System/Network Administrator	Rs. 1500.00 per resource per absent days

l) The deduction will be made against the absence of manpower and will be deducted from the QGR.

Annexure - 1: Locations

The site of the project Jaipur Smart City Roads comprises of 8 roads and 4 junctions.

The 8 roads are as under:-

S.No.	Name of Road	Length In Mt
1	Kishan Pole Bazar	780
2	Choura Rasta (New Gate to Choura Rasta)	825
3	Johari Bazar (Sanganeri Gate to Choti Chaupar)	780
4	Tripolia Bazar (Choti Choupar to Bada Choupat)	750
5	Gangori Bazar (Choti Choupar to Langari Road)	705
6	Chandi Ki Taksal(Bada Choupar to ChardiChitaksal-SubhashChowk)	990
7	Nehru Bazar	383
8	Bapu Bazar	384

This makes it a total of 5597.00 mt road length in the walled city of Jaipur, Rajasthan.

The 4 junctions are as under:-

S.No.	Name of Junctions
1	Ajmeri Gate
2	Choti Choupar
3	Badi Choupar
4	Sanganeri Gate

Annexure- 2: Bill of Material (BoM) and Technical Specifications

S.No.	Solution	Unit	Min Qty
Wi-Fi Hotspots			
1	AAA, Billing & Monetization Solution	Nos.	1
2	Access Switch (For Outdoor Access Points)	Nos.	48
3	Outdoor Access Point along with all required accessories	Nos.	192
4	Wireless Controller with License	Nos.	1
5	Internet Bandwidth (Bidder Note- Access Point Installation, Laying of Cable and other passive components including PVC, HDPE Pipe, Power Cable, Network Cable with required accessories etc.)	Lot	600 Mbps
Smart Lighting Solution			
1	Internal LED nodes	Nos.	800
2	Control Node	Nos	160
3	Smart Lighting Gateway	Nos	40
4	Smart LED Light Luminaire and Pole with mounting accessories	Nos.	1600
5	Supply & Laying of Power Cable (if required) and other passive components including PVC, HDPE Pipe with required accessories etc.	Nos.	1600
6	CDP Integration	Nos.	1
Surveillance Solution			
1	Camera Type -1 Fixed Box Camera for Video Analytics	Nos.	64
2	Camera Type -2 Fixed Bullet Camera	Nos.	80
3	Video Management System	Nos.	1
4	Server for Video Management and Storage	Nos.	1
5	Traffic Analytics - Vehicle Identification & counting licenses	Nos.	64
6	Access Switch	Nos.	50
7	P2P Connectivity Bandwidth (12 Mbps) provision as per project requirement	Nos.	48
8	Supply & Laying of Cable and other passive components including fibre, PVC, HDPE Pipe, Outdoor Enclosure, Network Rack with accessories etc.	Nos	144
Smart Parking Solution for closed parking space			
1	Camera with IR	Nos.	16
2	Network Switch	Nos.	8
3	Parking Registration device	Nos.	16
4	Pole for camera	Nos.	16

5	Boom Barrier	Nos.	16
6	Parking Kiosk set up (Box)	Nos.	8
7	Monitor for kiosk	Nos.	8
8	Payment terminal	Nos.	8
9	LED Display w/t GPRS module and enclosure + Pole + Frame for display	Nos.	40
10	Software	Nos.	1
11	Server, Storage, wired and wireless connectivity as per the solution proposed	Lot	Lot
Environment Sensor			
1	Environment Sensors	Nos.	16
Smart Transport Solution			
1	Bus - GPS device	Nos.	160
2	Passenger Information System LED based with controller (PIS)- At Each Bus Stop	Nos.	16
3	In Bus PIS as per UBS II Specification Front LED with Controller	Nos.	160
4	Automated Vehicle Location System (AVLS)	Nos.	1
5	Access License for each bus per year	Nos.	1280
6	IP Camera for Bus Stop	Nos.	16
7	Outdoor Wi-Fi Access Point	Nos.	16
8	Access Switch (For Outdoor Access Points)	Nos.	16
9	Passenger Information System (PIS)	Nos.	1
10	Vehicle Scheduling & Dispatch System	Nos.	1
11	Incident Management System	Nos.	1
12	Business Intelligence	Nos.	1
13	Web Portal for Bus Schedule &ETA	Nos.	1
14	Mobile Application for Smart Transport Solution	Nos.	1
15	CDP Integration	Nos.	1
18	Passive components including required accessories etc. for Smart Transport Solution	Nos.	1
16	SIM card for connectivity of GPS & PIS (160+16) for project period	Nos.	176
Smart Waste Management			
1	GPS Device	Nos.	16
2	RFID Tag	Nos.	32
3	Vehicle Tracking Platform for GPS data Aggregation	Nos.	1
4	Level Sensor	Nos.	16
5	Controller Unit for data processing and communication	Nos.	16
6	RFID Reader with Mountings clamps, Power Supply and Accessories (Weighbridge)	Nos.	16
7	Weighbridge Application Integration	Nos.	16
8	RFID Reader with Mountings clamps, Power Supply and Accessories (Entry/Exit Gate)	Nos.	16
9	Poles for RFID Reader Installation	Nos.	16

10	Solid Waste VTS Software	Nos.	1	
11	GIS Services (Map)	Nos.	1	
12	CDP Integration	Nos.	1	
13	Solid Waste Management Mobile Application	Nos.	1	
Smart Communications				
1	Fully OEM Integrated Single Screen Room System	Nos.	1	
2	Audio-Video Conferencing Unit at Central Location	Nos.	1	
3	Management & Scheduling	Nos.	1	
4	Voice and Video Call Control with HA	in pair	1	
5	Video device with minimum 22 inch screen	Nos.	5	
6	Color Screen Phone	Nos.	20	
7	Contact Center with 50 Agents	Nos.	1	
Data Center and Command Center				
1	Network Management Solution (NMS)	Nos.	1	
2	Converged Server cum Storage Solution for Virtualized (Non Video) Applications	Set	1	
3	Servers for City Operation Centre	Nos.	6	
4	Next Gen- Firewall with IPS	Nos.	1	
5	Anti-APT for Command & Control Room	Nos.	1	
6	WAN/ Core Router	Nos.	1	
7	Data Center & Command Center Core Switch	Nos.	1	
8	Data Center & Command Center Internet Router	Nos.	1	
9	Data Center & Command Center L2 PoE Switch	Nos.	6	
10	Network AAA Server for Network Devices	Nos.	1	
11	1 Gbps MPLS Internal Bandwidth at DC	Lot	1	
	Application and Solution			
12	City Operation Centre & Integrated Smart City Platform integration with CCTV Cameras, Smart Outdoor Lighting Services, Smart Parking Services	Lot	1	
13	Monitoring Workstations	Nos.	10	
	Control Room Video-wall Solution			
14	Video Wall (4x2) with Controller and Software	Nos.	1	

Note:
1. Bidders are requested to propose a single optimal solution and should refrain from suggesting multiple solutions or option which may lead to the rejection of the bid.
2. The architecture of set-up consists of number of locations which shall be operated / managed / controlled by Network Operations Centre (NOC) to be established at JAIPUR SMART CITY LIMITED HQ building at Jaipur.
3. Connectivity between locations and NOC should preferably on fibre.
4. Internet Bandwidth to be connected at NOC through fibre only
5. The equipment to be provided for surveillance and access points etc. at the outside locations are to be installed on the available poles, walls at site. In case of no physical termination support is available, then the Bidder has to provide poles which shall be in the scope of the Bidder.

6. Any other requirement for site / NOC to be operational and not mentioned in the estimated BOQ, the Bidder has to deploy the resources, which shall be in the scope of the Bidder.
7. All accessories including Network Cable/OFC/Power Cable, Connectors/Couplers etc., connected/terminated to active equipments & will be covered under this contract.
8. The Bidder may note that no logistics support or warehouse facility shall be provided by JAIPUR SMART CITY LIMITED. All such facility at JAIPUR SMART CITY LIMITED or at outside locations will be responsibility of the Bidder.
9. Minimum Bandwidth of 2.1 Mbps per surveillance camera should be ensured.
10. All HVAC components to be procured, installed and commissioned by the bidder.
11. Bidder is advised to go through the entire solution and assess the requirement for unforeseen accessories for the completion of this project

Technical Specifications

5.1 Smart Wi-Fi Solution

5.1.1 AAA Billing & Monetization Solution

S. No	Specification	Compliance (Yes/No)
1	The Authentication, Authorization and Accounting (AAA) solution should be fully scalable and capable for future needs without any existing Hardware up-gradation or inserting a new device.	
2	The AAA should be capable of user customized branding of Splash Page, Logo, Background, domain, etc.	
3	The system should be capable of delivering Pre-authentication ads to WiFi users from day one.	
4	The system should be capable of delivering Pre-authentication ads in form of Click to connect, Video push, Offers and Vouchers, App push and Social media, etc.	
5	The system should be capable of delivering In-session browser ads from day one.	
6	The system should be configurable to create different types of premium ad-free internet access plans based on duration, bandwidth, validity, quota and multi-device accessibility.	
7	The AAA should have an inbuilt mechanism to capture analytical data such as user Mobile number, MAC ID, IP address, Make and model of the device, OS, session time, etc from day one.	
8	The system should be capable of delivering multiple ads based on location, specific duration, number of hits, etc.	
9	The system should have a complete monetization dashboard to configure and view ads, splash pages, user templates, pricing plans, etc.	
10	The system should have integrated SMS and payment gateway which should be customizable as per operational needs.	
11	The AAA should support all types of payment	

	options for paid users including M-Wallets and Payment Banks.	
12	The AAA should support BYOD and adaptive captive portal and splash page from day one.	
13	The AAA should have user feedback functionality built-in from day one. Eg. It should be possible to survey users randomly or at specific times about the services or any other content.	
14	The AAA should support Social Media integration from day one.	
15	The system should support Walled Garden functionality from day one.	
16	The system should be able to generate analytical data based on user sessions, page hits, page & ad views, repeat/returning users, ad performanceand hits, campaign management.	
17	The system should be capable of third party real-time API integration such as Google Maps, etc.	

5.1.2 Access Switch (For Outdoor Access Points)

S. No.	Item	Specifications	Compliance (Yes/No)
1	**General Features**	The switch should be Industrial Grade ruggedized in nature that provides minimum 8 x 10/100/1000 BASETX access ports, additional 2 x 1000 Base-X SFP & 2x 1GE Uplink ports. One (1) ruggedized single mode SFP should be supplied with the switch.	
2		The switch should have non-blocking wire-speed architecture with support for both IPv4 & IPv6 from day one with wire-rate switching fabric of minimum 16 Gbps or more. The switch should have minimum 1GB RAM/DRAM.	
3		The switch should support backup storage drives, which will store the last known configuration of the switch, in the case of hardware failure and replacement. Reinserting the storage drive should restore the switch to original working condition without any manual intervention.	
4	**Layer 2 Features**	802. 1Q VLAN on all ports with minimum 10k MAC address	
5		Spanning Tree Protocol as per IEEE 802.1d, ring protection protocol like REP or equivalent	

6		Should support Jumbo frames up to 9000 bytes & Link Aggregation Control Protocol (LACP) as per IEEE 802.3ad.	
7		The switch should support IGMP v1/v2/v3 &up to 1000 IGMP groups as well as IGMP snooping & IGMP filtering. Should also support MLD v1/v2.	
8	**Layer 3 Features**	Static, Inter-VLAN routing must be enabled from day one	
9		The switch should support Dynamic Routing – RIPv1/v2, OSPF for both IPv4 & IPv6, BGP, PBR, network address translation etc. protocol by enabling/upgrading the license as & when required.	
10	**Quality of Service (QoS)**	Switch should support classification and scheduling as per IEEE 802.1P on all ports with minimum four egress queues per port	
11	**Features**	The switch should provide traffic shaping and rate limiting features for specified Host, network, Applications etc.	
12	**Security Features**	The switch should support ACLs, Extended IP ACLs, support RADIUS and TACACS+ for access restriction and authentication.	
13		Should support a mechanism to shut down Spanning Tree Protocol Fast-enabled interfaces when BPDUs are received to avoid accidental topology loops.	
14		Switch should support static ARP, Proxy ARP, UDP forwarding and IP source guard, DHCP Snooping, DHCP Option 82, Dynamic ARP Inspection (DAI), IP Source Guard, Network Address Translation, BPDU Guard, Port-Security, DHCP Snooping, 802.1x, 802.1AE, MAC Authentication Bypass, 802.1x Multi-Domain Authentication, Storm Control	
15	**Management Features**	The switch should be SNMP manageable with support for SNMP Version 1, 2 and 3.	
16		Support for Automatic Quality of Service or equivalent for easy configuration of QoS features for critical applications.	
17		Switch should support PTP, FTP/TFTP	
18	**Mechanical Conditions:**	• -5 to +70ºC continuous operating temperature range	
19		• Operating relative humidity: 5% to 95% no condensing	
20		Protection Class -minimum IP 30, NEMA TS-2	

21	**Certifications**	Switch should be EN 55022A Class A, VCCI Class A, KN22 certified	
22		The switch should support CIP Ethernet/IP, IEC 62439-2, IEEE 1588 PTP v2, ODVA Industrial Ethernet/IP.	
23		EMC interface immunity:	
24		Switch should be EN55024, EN 61000-4-2 Electro Static Discharge, EN 61000-4-5 Surge, EN 61000-4-8 Power Frequency Magnetic Field, EN 61000-4-11 AC Power Voltage	

5.1.3 Outdoor Access Point

S.No	Specifications	Compliance (Yes/No)
1	Access Points proposed must include radios for both 2.4 GHz and 5 GHz.	
2	AP should support dual-band antenna ports.	
3	Must have -99 dB or better Receiver Sensitivity.	
4	Must support 2X2 multiple-input multiple-output (MIMO) with two spatial streams	
5	Must support 802.11ac, Wave 2 and backword compatible with 802.11n standards	
6	Must support data rates upto 867 Gbps on the5Ghz radio.	
7	Must support 80 MHz wide channels in 5 GHz.	
8	Must support WAP enforced load-balance between 2.4Ghz and 5Ghz band.	
9	Should support configuring the access point as network connected sensor to access any network location covered by the access point to get real-time Spectrum analysis data	
10	Must support upto 28dbm or higher transmitting power for both the radios	
11	Access point should 802.11ac, 802.11n and 802.11a/b/g Beamforming	
12	The Wireless Backhaul/Mesh shall operate in 5Ghz	
13	Support Encrypted and authenticated connectivity between all backhaul components	
14	Access point should have multiple wired uplink interfaces including 10/100/1000BASE-T Ethernet autosensing (RJ-45) and a built-in SFP port for direct fibre connection.	
15	Should have console port	
16	Wireless AP Should able to detect and classify non-Wi-Fi wireless transmissions.	

17	Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization	
18	Access point shall support powering from AC /DC/ UPOE.	
19	Access point shall support pole, wall and Cable strand mounting options.	
20	The equipment shall support up to 100 MPH sustained winds & 165 MPH wind gusts.	
21	The Access point shall be IP67 and NEMA rated	
22	The Access point shall support operating temperature of -40 to 55°C	
23	Wi-Fi Alliance Certification for WMM and WMM power save	
24	Must support Reliable Multicast to Unicast conversion to maintain video quality at AP level	
25	Must support QoS and Video Call Admission Control capabilities.	
26	Must support Spectrum analysis including @ 80 MHz	
27	The Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.	
28	Should support mesh capabilities for temporary connectivity in areas with no Ethernet cabling.	
29	Should have and the option of configuring all the antenna port via software to run all on the dual band or any single band configuration.	
30	Must support 16 WLANs per AP for BSSID deployment flexibility.	
31	Must support telnet and SSH login to APs directly for troubleshooting flexibility.	
32	The OEM should be listed in Gartner Magic Leaders/Challengers Quadrant for Wired & Wireless report or Leaders/Challengers Quadrant for Data Center Networking report	

5.1.4 Wireless Controller

S. No.	Technical Specification	Compliance (Yes/No)
1	Must be compliant with IEEE CAPWAP or equivalent for controller-based WLANs.	
2	Should have at least 2 x 10 Gigabit Ethernet interface & supplied with the10G multimode transceiver.	
3	Should support both centralized as well as distributed traffic forwarding architecture with L3 roaming support from day 1. Should have IPv6 ready from day one.	
4	Controller should have hot-swappable redundant	

	power supplies.	
5	Controller should support minimum 20,000 users per chassis	
6	WLAN Controller should support a minimum of 1500 Access points in a single chassis. Proposed controller should support 1+1/N+1 redundancy from day one	
7	Should be rack-mountable. Required accessories for rack mounting to be provided.	
8	WLC should support AVC functionality on local switching architecture	
9	WLC should support AC and DC powering options	
10	WLC should support AP License Migration from one WLC to another	
11	Should support minimum 4000 VLANs	
12	WLC should support L2 and L3 roaming for IPv4 and IPv6 clients	
13	WLC should support guest-access functionality for IPv6 clients.	
14	Should support IEEE 802.1p priority tag.	
15	Should ensure WLAN reliability by proactively determining and adjusting to changing RF conditions.	
16	Should provide real-time radio power adjustments based on changing environmental conditions and signal coverage adjustments.	
17	Should support automatic radio channel adjustments for intelligent channel switching and real-time interference detection.	
18	Should support client load balancing to balance the number of clients across multiple APs to optimize AP and client throughput.	
19	Should support policy based forwarding to classify data traffic based on ACLs	
20	Should support minimum 500 WLANs	
21	Should support dynamic VLAN assignment	
22	Should support Hot Spot 2.0	
23	To deliver optimal bandwidth usage, reliable multicast must use single session between AP and Wireless Controller.	
24	Should able to do dynamic channel bonding based on interference detected on particular channel.	
25	Must support coverage hole detection and correction that can be adjusted on per WLAN basis.	
26	Must support RF Management with 40 MHz and 80 MHz channels with 802.11n & 802.11ac	
27	Should provide visibility to Network airtime in order to set the airtime policy enforcement	

28	Must be able to restrict the number of logins per user.	
29	Should support web-based authentication to provide a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant.	
30	Should support port-based and SSID-based IEEE 802.1X authentication.	
31	Should support MAC authentication to provide simple authentication based on a user's MAC address.	
32	WLC Should support Rogue AP detection, classification, DDoS attack, Ad-hoc detection & containment and standard WIPS signatures.	
33	WLC should be able to exclude clients based on excessive/multiple authentication failures.	
34	Shall support AES or TKIP encryption to secure the data integrity of wireless traffic	
35	Shall able to provide an air quality index for ensuring the better performance	
36	Shall able to provide real-time chart showing interference per access point on per radio and per-channel basis.	
37	Should support AP location-based user access to control the locations where a wireless user can access the network	
38	Should support Public Key Infrastructure (PKI) to control access	
39	Must be able to set a maximum per-user bandwidth limit on a per-SSID basis.	
40	Should support SNMPv3, SSHv2 and SSL for secure management.	
41	Should support encrypted mechanism to securely upload/download software image to and from Wireless controller.	
42	Should provide visibility between a wired and wireless network using IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and sFlow/equivalent.	
43	Should support AP Plug and Play (PnP) deployment with zero-configuration capability	
44	Should support AP grouping to enable administrator to easily apply AP-based or radio-based configurations to all the APs in the same group	
45	Should support selective firmware upgrade APs, typically to a group of APs minimize the impact of up-gradation	
46	Should have a suitable serial console port.	
47	Should have Voice Call Admission and Stream prioritization for preferential QOS	

48	The controller should support deep packet inspection for all user traffic across Layer 4-7 network to analyses information about applications usage, peak network usage times for all access points from day one in a central and local switching mode.	
49	Should be able to do application visibility for applications running behind HTTP proxy.	
50	Support profiling of wireless devices based on known protocols like HTTP and DHCP to identify clients	
51	The OEM should be listed in Gartner Magic Leaders/Challengers Quadrant for Wired & Wireless report or Leaders/Challengers Quadrant for Data Center Networking report	

5.2 Smart Lighting Solution

5.2.1 Internal LED nodes

S.No.	Items	Feature Description	Compliance (Yes/No)
1	Product	Should have Inbuilt wireless communication, lighting controls and external sensor interface	
2	Input Voltage	270 VAC or 115 VAC, 50/ 60 Hz (Normal Power Grid)	
3	Power Consumption	<2W	
4	Dali Loads	Max. 3	
5	Dimming Control	1-10V or DALI (Isolated for safety)	
6	Surge Protection	110 Joule (6 kA), 12 kV Combination wave	
7	Electrical Protection	Class II (Overload and Short-circuit protection)	
8	Electrical Safety	Galvanic isolation between high-voltage and low-voltage terminals	
9	Operating Conditions	-20º C to +70º C ambient, 20% to 90% Rh non-condensing	
10	Product Mounting	Inside the luminaire	
11	Housing	IP20, IP65	
12		Weatherproof and Fireproof (UL94V0) Housing	
13	Antenna	External Antenna	
14	Product Compatibility	Direct wireless communication between the control node and gateway with central light management.	
15		Compatibility with conventional (PLL, HID, HPS) and new (LED) luminaires	

16	Astro-clock	Battery backed real time clock: Astro clock feature	
17		Able to switch on/off the lamps at sunset/sunrise and adjust them seasonally (Summer-Winter time). Eliminates the need for conventional photocell	
18	Wireless communication	2.4 GHz IEEE 802.15.4 self-forming self-healing wireless network	
19		+10 dBm max. transmit power, -98 dBm max. receiver sensitivity	
20		Up to 1 km open field range	
21		Up to 250 kbps RF Data Rate	
22		32 bit Microcontroller, 256kB Flash and 32kB RAM	
23	Network Security	128 AES and SSL | Multilayer security with end-to-end encryption	
24	Over-the-air update	Configurations, software as well as entire firmware can be updated remotely	
25		Ensuring up to date network infrastructure.	
26	Device to Gateway Ratio	200:1 provided physical condition allow for it	
27	Remote Monitoring	Via LMS and Integrated Operation Center through APIs. LMS should enable remote management, monitoring, control, and configuration of lamps on individual and group level.	
28	Safety Mode	Auto-safe: in a case of Gateway failure, all lamps go back to the highest preprogrammed level of brightness. In a case of the controller failure, the lamp	
29		Goes back to the 100% brightness.	
30	Certification	RF Transceiver compliant with US (FCC)	

5.2.2 Control Node

S.No.	Items	Feature Description	Compliance (Yes/No)
1	Product	Should provide Motion detection sensors, wireless communication, and lighting control integrated into one product for a simple plug-and-play installation.	
2	Motion Detection	Should able to detects pedestrians, cyclists, and cars (within the speed range of 4-120 km/h)	
3		Detection Range: up to 15 m on each side, 9 m in front, 3 m behind	
4		Detection Angle: >270 ° (depends on pole	

		diameter)	
5		Should be able to trigger 1-10 neighboring lamps upon motion detection (user-configurable) even when network backhaul is down.	
6	Input Voltage	230 VAC or 115 VAC, 50/60 Hz (normal power grid)	
7	Power Consumption	<3W.	
8	DALI Loads	Max. 2	
9	Dimming Control	0-10V or DALI (Isolated for safety).	
10	Surge Protection	110 Joule (6 kA), 12 kV Combination wave.	
11	Electrical Protection	Class II: overload, short circuit, and over temperature protection	
12	Electrical Safety	Galvanic isolation between high-voltage and low-voltage terminals.	
13	Operating Conditions	-20º C to +70º C ambient, 20% to 90% Rh non-condensing.	
14	Product Mounting	On the pole. Recommended mounting height 5 m above the ground	
15	Housing	IP65, Weatherproof and Fireproof Housing.	
16	Antenna	Integrated internally.	
17	Dimension	100mm x 125mm x 95mm.	
18		±10° adjustable mounting plate to accommodate for pole tilts.	
19	Product Compatibility	Direct wireless communication between the control node and gateway with central light management.	
20		Compatibility with conventional (PLL, HID, HPS) and new (LED) luminaires	
21	Wireless communication	2.4 GHz IEEE 802.15.4 self-forming, self-healing wireless network.	
22		+10 dBm max. transmit power	
23		-98 dBm max. receiver sensitivity.	
24		Up to 1 km open field range	
25		32 bit Microcontroller, 256kB Flash and 32kB RAM	
26	Network Security	128 AES	
27		Multi-layer security with end-to-end encryption	
28	Over-the-air update	Configurations and software can be updated remotely, ensuring an up-to-date	
29		network infrastructure	
30	Server Communication	Via Gateway to LMS.	
31	Device to Gateway	200:1 provided physical condition allow for	

	Ratio	it	
32	Remote Monitoring	Via LMS and Integrated Operation Center through APIs. LMS should enable remote management, monitoring, control, and configuration of lamps on individual and group level.	
33	Safety Mode	Auto-safe: in a case of Gateway failure, all lamps go back to the highest pre-programmed level of brightness. In a case of the controller failure, the lamp goes back to the 100% brightness.	
34	Certification	RF transceiver compliant with US (FCC)	
35	Lamp switching capacity	2400 VA (Relay),16A max. current	
36	Astro-clock	Battery backed real time clock: Astro clock feature	
37		Able to switch on/off the lamps at sunset/sunrise and adjust them seasonally (Summer-Winter time). Eliminates the need for the conventional photocell.	

5.2.3 Smart Lighting Gateway

S.No.	Items	Feature Description	Compliance (Yes/No)
1	Main Text	Gateway should be state-of-the-art network interface device which synchronizes between the lighting control devices and the lighting management software	
2		Gateway should have inbuilt radio module for wireless network configuration, commissioning and maintenance. It should reliably communicate with a large number of devices spread across large distances. Inbuilt smart monitoring tools should notify users of lamp and network status.	
3		Gateway should offer several internet connectivity options with robustness and flexibility to the end-customer with industry standard protocols allowing easy integration with other systems and networks.	
4	Integrated Product	In-built AC-DC power supply, 2.4 GHz Wireless network communication, Server communication (SIM card, Ethernet and Wi-Fi) and External sensor interface.	
5	Input Voltage	Universal 85 – 264 VAC, 50/60 Hz.	
6	Power	<8W typical	

	Consumption		
7	Processor	High-performance industrial grade dual-core ARM Cortex-A9 CPU, 1 GHz	
8	Data Storage	4 GB micro SD-card	
9	Electrical Protection	Class II | Overload, Shortcircuit and Over-temperature protection	
10	Operating Conditions	-20º C to +70º C, 20% to 90% Rh non-condensing	
11	Antenna	Integrated internally for 2.4 GHz wireless, M2M and Wi-Fi	
12	Connectors	1x Ethernet port (10/100, RJ45)	
13		1x Micro-SD memory card slot (max. 32 GB)	
14		1x Push insert Standard SIM-card bay (25mm x 15mm)	
15		2x UfL Antenna connector (2.4 GHz wireless, Wi-Fi)	
16		1x SMA-F Antenna connector (2G/ 3G modem)	
17	Product Mounting	Pole or Wall mounting	
18	Housing	IP65, Fireproof (UL94V0) Housing	
19	Dimension	230mm x 130mm x 90mm	
20	Manufacturing	ISO 9001:2008, Made in Europe	
21	Compliance	RoHS, CE, EN301489-1/3, EN61547, EN55015, EN300328, EN60950	
22		RF Transceiver compliant with US (FCC)	
23	Server Communication	2G GSM/GPRS/EDGE quad-band,	
24		3G six-band UMTS/HSPA	
25		Additional Ports: Ethernet and Wi-Fi	
26	Network security	128 AES, WebSocket (with SSL) and VPN	
27		Multi-layered security with encryption	
28		Dual protection for messages between Devices & Gateway	
29		Certificate based secure WebSocket and VPN connection	
30		Secure pairing between Gateway and DigiHub	
31	Functions	Real-time monitoring of devices & Network Fault Tolerance	
32		Several Internet Connectivity Options (Ethernet/ Wi-Fi, GSM)	
33		Automatic Connectivity selection	
34		SNTP time sync between GW and devices	
35		Regular logging of the system operation (selectable time interval)	
36		Real-time connection between Gateway and	

		DigiHub	
37		Full-remote debugging of Gateway as well as devices	
38		Update over-the-air for Gateway & devices (software & firmware)	
39		Local intelligence for reliability & faster response times	
40		Open standards for 3rd party compatibility	
41		Large local data storage to avoid data loss in case of communication link failure	
42	Over-the-air update	Configurations, software as well as entire firmware can be updated remotely ensuring up to date network infrastructure.	
43	Remote Monitoring	Light Management Software allows remote management, monitoring, control and reporting at individual and group level.	
44		Advanced scheduling	
45	Wireless Network	2.4 GHz IEEE 802.15.4	
46		Self-forming (and User-configurable), Self-healing Wireless Network	
47		+20 dBm max. transmit power	
48		-98 dBm max. receiver sensitivity	
49		Up to 1 km open field range	
50	Device to Gateway Ratio	200:1 assuming conditions allow	

5.2.4 Smart LED Light Luminaire and Pole with mounting accessories

The LED Luminaire should meet the following specifications:

1. LED street light luminaire shall be made of pressure die cast aluminum housing with appropriate heat sink fins with corrosion resistant powder coat.
2. The manufacturer shall submit INSITU Thermal report indicating maximum temperature point on LED array. This value shall not exceed junction temperature (Specified in LM 80 report at which life > 50000 hrs.)
3. The luminaire shall have UL approved FR grade polycarbonate cover with high transmission index and the luminaire shall have impact resistance of IK 07
4. Total System Power Consumption should be within the tolerance of ±5% with the typical system Light output of >100LPW. Test Certificate from Govt. Approved Lab/NABL accredited Lab/UL to substantiate lumen output as per LM 79 must be furnished for evaluation.
5. The fixture shall have Ingress Protection of IP 66 Rated (Both for Optical & Electrical Compartment). Test Report for the same need to be furnished from any Govt. Approved/NABL accredited Laboratory.
6. Luminaire shall be provided with IP-66 rated Oleophobic and Hydrophobic Micro Vent offering sustained ingress protection over its life

7. Luminaire should consist of Universal Voltage driver to operate wide voltage range from 150V to 270V 50/60Hz application with inbuilt short circuit, over voltage, overload and miswiring protection.

8. The fixture shall be designed so as to have lumen maintenance of at least 70% at the end of 50,000 hours with the life of 50000 hrs.

9. IES LM-80 report for the LED chip package employed in the proposed luminary product must be submitted.

10. Luminaire shall have side pole mounting option with outer Diameter 40 to 60mm.

11. The luminaire efficiency shall be greater than >100 LPW.

12. The colour temp of LED shall be 5600K +/- 500K

13. The CRI of LED shall be >70

14. The LED shall be provided with structured LED array for optimized roadway photometric distribution with photometric lenses designed to optimize application efficiency and minimal glare

15. Driver should have Surge Protection as per IEC 6100-4-5 level-4 of minimum 6KV and shall have external surge protection device of 10KV built into the fixture.

16. The driver shall be dimmable driver (analog 0-10V) suitable for dimming the luminaires to various power levels.

17. The driver efficiency shall be >88% & power factor of the electronic driver shall be >0.95 and THD shall be <10%.

18. The driver shall be provided with inbuilt over voltage protection system with cut off with voltage >300V and shall auto restart when the voltage drops to <290V.

19. The solder point temperature of the LEDs should be less than 85oC under actual user condition at an ambient of 35oC.

20. The luminaire manufacturer shall have a full-fledged testing lab with all optical test equipment like Integrated Sphere and Type-C Rotating Mirror Photo Goniometer to test the LED luminaries and the lab shall be NABL accredited.

21. Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part.

22. PCB shall be MC-PCB type of high-gradealuminum (AL5052) and should have a thermal conductivity of >1W/mK.

23. The luminaire light shall be constant. The voltage variation/fluctuations in the specified voltage range shall not impinge upon the lumen it produces. Maximum +/- 2% is allowed throughout in the input operating voltage range. Necessary supporting document from Govt. Approved/NABL accredited Laboratory shall be furnished with lumen output for 150V, 180V, 200V, 220V & 240V voltage.

24. The connecting wires used inside the luminaire shall be low smoke halogen free, fire retardant and MCB protection shall be provided in input side.

25. Type Test Certificate of luminaire from Govt. accredited Test Lab/ERTL/ NABL shall be submitted.

S.NO.	Item	Feature description	COMPLIANCE (YES/NO)
	Mechanical Properties		
1.	Housing Material	Pressure Die Cast Aluminium with powder coating	

S.NO.	Item	Feature description	COMPLIANCE (YES/NO)
2.	Heat sink	INSITU Thermal report to be submitted to cover this parameter. The manufacturer shall submit design/ drawing indicating maximum temperature point on LED array. This value shall not exceed junction temperature (Specified in LM80 report at which life > 50000 hrs.)	
3.	Cover/Glass Material	Injection Moulded Flat Polycarbonate Cover	
4.	Gasket Material	Silicon Gasket	
	IK Rating	IK 07 (TEST REPORT as per IS:10322 part 5	
		Sec-3 /IEC:60598-2-3) as per NABL report	
	Vibration	Conforms to ANSI 2G Standard	
	Humidity	RH - 10-90%	
	Mounting type	Side mounting only	
5.	Electrical Properties		
	Input Voltage Range	150-270V	
	Input Frequency	50-60Hz	
	Nominal Power Consumption	System Power shall be within the range of +/- 5% of rated power	
	Nominal Power Factor	>0.95 (LM79 report to be submitted)	
	Surge Protection - As per IEC61000-4-5	6 KV inbuilt with driver and 10 KV external SPD to be provided in the luminaire	
	LED Driver Current	>=350 mA <900 mA	
	Total Harmonic Distortion (THD as per IEC 61000-3-2, e.d.3.2,2009)	<10%	
	Safety features	Over Voltage, Short Circuit, Over Load, Miswiring	
	High – Voltage Cutoff	The system shall shutdown at 300V and restart when the voltage level comes down to <290V	
	Input Voltage Range	150-270V	
6.	LED and Optical Assembly		
	LED Type	High Power LED - Approved make - CREE/Lumileds/NICHIA - LED technical datasheet including packaging details to be submitted. LED Chip manufacturer to provide an authorization letter in favour of bidder stating their supply support for execution of project LM-80/IS 16105 Test reports of specific LED used in the proposed Luminaire.	

S.NO.	Item	Feature description	COMPLIANCE (YES/NO)
	Wattage per LED (>1w <3w)	The LEDs shall be driven at a current <70% of its rated current	
	Photo-biological Safety report	To be submitted	
	System Efficacy - LPW	>100 LPW	
	Nominal CCT	5650K±500K (LM 79 to be submitted)	
	Nominal CRI	>70 (LM80 need to be submitted)	
	Secondary Optics/Optical Lens Available	Secondary LED shall be provided for appropriate lighting distribution.	
	Secondary Optics/Optical Lens Material	PMMA conforming to ASTM Specification	
	PCB Material	MCPCB	
	LED Viewing Angle	115 degree	
7.	Environmental Specifications		
	Ambient Temperature	-20C - +45 C	
	Storage	Temperature	
	IP Rating Optical assembly	IP66 (NABL Lab accredited report to be submitted)	
	IP Rating Electrical enclosure	IP66 (NABL Lab accredited report to be submitted)	
	Micro Vent rating	Oleophilic and Hydrophobic vent IP66 rated)	
	Maximum Wind speed at which Fixture should operate	150 Km/hr - External 3rd party report to be submitted	
8.	Basic Specifications		
	Designed life	L70@50000 Hrs. (LM80 to be submitted)	
	Lumen Maintenance Rating	L70@50000 Hrs. (LM80 to be submitted)	
	Initial System Lumen Output (> 100 Lumens/Watt)	To mention	
9.	Standard Compliance		
	Luminaire Performance Complies to	IS10322 (Part 5/Sec 3) & IEC 60598-1,IEC 60529	

5.3 Smart City Surveillance Solution

5.3.1 Video Management Software

S.NO.	Characteristics and Description	Compliance (

		Yes/No)
1	**General Video Management System requirement**	
2	This organization requires an integrated security solution that includes a command and control style operator console; an open source like RHEL OS -based video management software system, standard and high definition IP-based cameras, and the system should meet the following requirements.	
3	The Video Surveillance System is intended to effectively monitor all the critical operational areas of the locations & fully cover all the access points. The broad objectives of the Video Management System are as follows:	
4	a) Access points monitoring with Motion Detection Alarms	
5	b) Enhancement of operational control by covering critical areas	
6	c) Recording of camera outputs for analyzing critical events	
7	The Video Surveillance System is required to ensure effective Security & surveillance of an area as well as create a tamper-proof record for post-event analysis. The Surveillance System shall provide an on-line display of video images on monitors at local security control room & also at any other place as defined for large locations as per requirement.	
8	It should facilitate viewing of live and recorded images and controlling of all cameras by authorized users.	
9	**VMS shall include, as a minimum, the following features/ functions/ specifications;**	
10	a) The surveillance system shall provide a scalable and reliable platform to enable customized, network-based surveillance applications.	
11	b) The surveillance system shall be open standard supporting multiple vendor IP cameras and encoder manufacturers within the same system. The system shall support the integration of ONVIF compliant cameras.	
12	c) The system shall support digital pan-tilt-zoom on live video. PTZ cameras should allow operators to use PTZ controls to zoom to a specific region in the viewing pane. Operators should select part of the full image and perform the PTZ controls within that region.	
13	d) The surveillance system viewing system should be in thick client for local viewing and thin client through HTTP browser for remote viewing. Both thin and thick client shall provide the capability of viewing single or multiple live and archive cameras, control PTZ camera.	
14	e) VMS Review Player should support stand-alone Windows utility that plays video archive clips without a browser. The Review Player should also support MP4 files into a tamper-proof MPX (tamper proof MP4 file formats) formats. MPX file should include a password that is entered when the file is created. The application	

	should ask the password to open and view the video file.	
15	f) VMS application should be a mobile application for Android& Apple devices such as the iPad and iPhone. App features should include recorded video playback, thumbnail video preview, and user profiles that allow multiple users to share a single device.	
16	g) The proposed surveillance system can be supported by the existing network infrastructure	
17	h) The System shall support the scalability of additional camera installation beyond the originally planned capacity. One single Video Management system shall be expandable to 10,000 cameras.	
18	i) The proposed video management system shall support deploying the software on Virtual servers, thus minimizing the hardware footprint for the project.	
19	j) The system shall have the capability to stream video at remote sites by optimizing the bandwidth on WAN.	
20	k) The System should support automatic discovery and configuration when any camera connects to the network, the switch should recognizes the camera as a video endpoint, and then uses Smart Port macros to set the right network parameters for the video stream on the network.	
21	l) The system should allow users to access video streams from remote locations that have limited outbound bandwidth. The video should be delivered to multiple users without placing additional load on the remote locations.	
22	m) The System should support Maps integration in future with below features;	
23	i. Adding Image Layers to the location map.	
24	ii. Define the location map for each location.	
25	iii. Add cameras to the map images.	
26	iv. Add image layers to the map.	
27	v. Add a Maps Server	
28	vi. System should support raster format images of jpeg/jpg and png file and Vector (shape files)	
29	n) Video Surveillance Storage System – The video surveillance storage system should support multiple options to store video. Servers, Direct Attached, shall augment server internal storage. The video surveillance storage system shall store video in loops, one-time archives, or event clips triggered by alarm systems. It shall support for RAID 5/6 storage.	
30	o) The system shall provide for integration with other software applications through an open and published Application Programming Interface (API). Such applications shall include, but not be limited to, access control, video analytics, and other alarm	

	and sensor inputs.	
31	p) The system should ensure that once recorded, the video cannot be altered; ensuring the audit trail is intact for evidential purposes.	
32	q) All camera recordings shall have camera ID and location or area of recording and shall be programmable by the system administrator with user ID and password.	
33	r) The system shall support camera template to define the resolution, frame rate, recording duration, and then apply to a group of cameras. The modification of the template will be reflected to all the cameras under the template.	
34	s) The system shall support Bulk Action to allow to search and perform administration activities on multiple cameras.	
35	t) The system shall support Bulk import of cameras from files such as excel/.csv, or other standard file formats. The files shall include camera name, IP address, server, template, location, camera username and password	
36	u) The System should support LDAP (Lightweight Directory Access Protocol) server	
37	**VMS System**	
38	VMS System should have below application/ Console;	
39	*VMS Server Management Console*	
40	a) VMS Server Management Console should use by system administrators to perform infrequent administration tasks on a single physical or virtual machine. For example, use the Management Console to complete the initial server Setup Wizard, monitor system logs and resources, troubleshoot hardware and system software issues, and gather information about the installed hardware and software components.	
41	b) The VMS Server Management Console user interface should available for each instance of system software installed on either a physical server or as a virtual machine.	
42	c) VMS Server Management systems should support network time protocol (NTP) on server, which automatically sets the server time and date.	
43	d) VMS Server Management Console should support configurable in a high availability (HA) arrangement that should allow a primary server to be paired with additional Failover, Redundant, or Long Term Storage Media Server. These HA servers should support the primary server with hot standby, redundant stream storage and playback, and long-term recording storage to help ensure that functionality and recordings are not lost if the primary server goes offline.	
44	*VMS Operations Management Console*	

45	a) The VMS Operations Management Console should have browser-based configuration and administration tool used to manage the devices, video streams, archives, and policies for Video Management System deployment.	
46	b) The VMS Operations Management Console should have below features;	
47	i. Manage physical devices - Add, configure and monitor the cameras, servers, and encoders that provide live and recorded video.	
48	ii. Manage server services - Configure, enable or disable server services, such as the recording servers that manage video playback and recording.	
49	iii. Monitor video - View live and recorded video, save video clips, search thumbnail summaries of recorded video, use the camera, Pan, Tilt and Zoom (PTZ) controls, or configure pre-defined video Views and Video Walls.	
50	iv. Define recording and event policies - Create recording schedules, define event-triggered actions, configure motion detection, and other features.	
51	v. Monitor system and device health - View a summary of system health for all devices, or device status, alerts and events.	
52	vi. Backup and restore - Backup the system configuration, and optionally include historical data (such as alerts).	
53	vii. The VMS Operations Management Console should support (if required) configurable as a redundant pair for high availability (HA) and the system should ensure uninterrupted system access for users and administrators.	
54	**VMS Monitoring Console**	
55	a) VMS monitoring Console application should allow VMS System users to monitor live and recorded video.	
56	b) VMS monitoring Console should have the below viewing tool features;	
57	**i. Desktop monitoring application**	
58	Allows simultaneous viewing of up to 25 cameras per Workspace, and up to 48 cameras per workstation.	
59	Create Video Matrix windows for display on separate monitors.	
60	View Video Walls.	
61	Create unattended workstations.	
62	View and manage alerts.	
63	View cameras, video, and alerts based on a graphical map should support (if required)	
64	**ii. Web-based configuration and monitoring tool**	
65	Allows simultaneous viewing of multiple video panes:	
66	View up to 25 cameras with the 64-bit version of Internet Explorer.	
67	Add the users, Views and Video Walls available in the desktop application.	

68	Configure the camera, streams and recording schedules.	
69	**iii. Desktop video clip player**	
70	Simple player used to view video clip files.	
71	**iv. Web-based server console**	
72	Should provide basic viewing features for a single stream (Stream A) from a single camera.	
73	c) VMS monitoring Console should have below features;	
74	i. Client Application - A full-featured monitoring application should provide access to the cameras and video from a single screen should include the following workspaces and features:	
75	Video workspace	
76	Wall workspace	
77	Alert workspace	
78	Maps workspace support (if required)	
79	Forensic Analysis Tools should support (if required)	
80	ii. Video Player - monitoring application that includes the following monitoring workspaces:	
81	Video workspace	
82	Wall workspace	
83	iii. Video Wall Application – This should launch a monitoring application for unattended workstations. Unattended mode allows video monitoring windows to display Video Walls without access to the monitoring console configuration interface. The unattended screens should remain open even is the keyboard and mouse are disconnected, and can (optionally) re-appear when the workstation is rebooted.	
84	iv. Forensic Analysis Tools - VMS monitoring Console should support (if required) below features;	
85	Thumbnail Search—Use Thumbnail Search to quickly locate specific scenes or events in recorded video without fast-forwarding or rewinding. Thumbnail Search should display a range of video as thumbnail images, should allow identifying a portion of the recording to review.	
86	Clip Management—Use Clip Management to view, download and delete MP4 clips. that are stored on the server.	
87	Motion Analysis—Use Motion Analysis to view a summary of motion events for recorded video.	
88	Camera License – If the proposed Camera and Video Management Software from Same OEM, Camera License should be free of cost. For 3rd party cameras, Bidder needs to quote License as per tender qty. However, bidders are open to supply multiple brands of cameras.	
89	Traffic Analyzer connection platform requirements:	
A	Minimum resolution: 1280 x 720 pixel	
B	Minimum frame rate: 12 fps	

5.3.2 Camera Type -1 Fixed Bix Camera for Video Analytics

S. No.		Camera Characteristics	Description	Compliance (Yes/No)
1		Requirement Overview	High-definition IP Box Camera for outdoor	
2		Sensor Type	1/2.7" Progressive Scan CMOS with additional digital signal processor (DSP) to support complex applications such as real-time video analytics	
3		Max Resolution	1920x1080 @ 30fps	
4		Dynamic Range	Yes	
5		Lens/Iris	3.1-8mm- P-Iris	
6		Audio I/O	The camera supports full-duplex audio and options for half-duplex operation. Should support Audio compression G.711 A, Law, G.711 U, Law, G.726, Audio in x 1	
7		Digital I/O	(3.5-mm miniature jack)	
8			Audio out x 1	
9			(3.5-mm miniature jack)	
10			DI x 1	
11			DO x 1	
12		Max Illumination	Colour: 0.3 lux	
13		Max Illumination	B/W: 0.05 lux	
14		Day/Night	Automatic, manual, scheduled	
15		Local Storage	Should support Micro SD -min 32 GB	
16		Video Compression & Video Streaming	● Single stream H.264 or MJPEG up to 1080p (1920 x 1080) @ 30 fps ● Dual stream H.264 and MJPEG ◦ Primary stream programmable up to 1280 x 720 @ 30 fps ◦ Secondary stream programmable up to 960 x 544 @15 fps	
17		ONVIF	Should support for ONVIF 2.0 allows for standards-based interoperability	
18		POE and External Power	12V DC, 24V Ac and PoE-802.3af compliant (Class 3)	
19		Power Consumption (in watts)	Max 10 Watt at DC	

20		Supported Protocol	Dynamic Host Control Protocol (DHCP), Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS), Network Time Protocol (NTP), Real-Time Transport Protocol (RTP), Real-Time Streaming Protocol (RTSP), Simple Mail Transfer Protocol (SMTP), Secure Sockets Layer/Transport Layer Security (SSL/TLS), TCP/IP, Secure Real-Time Transport Protocol (SRTP), Bonjour, Simple Network Management Protocol (SNMP), and Secure Shell (SSH) Protocol. Differentiated-services-code-point (DSCP) marking and class-of-service (CoS) marking	
21		Operating Temperature	14° to 122°F (-10° to 50°C)	
22		Certifications Safety	UL60950-1 2nd edition CSA22.2-No.60950-1 IEC/EN60950-1 2nd edition IEC/EN60825	
23		Certifications EMC-Requirements	CISPR22 Class B ICES-003 EN55022 EN55024 EN61000-3-2/-3-3 Class A VCCI Class B KN22 Class B KN24	
24		Camera Tamper	The camera should support tamper feature when any of the following events occur and persist for a designated period: The IP camera view is changed The IP camera view is blocked The IP camera view is substantially out of focus	

5.3.3 Camera Type -2 Fixed Bullet Camera

S.NO.	Camera Characteristics	Description	Compliance (Yes/No)
1	Requirement Overview	High-definition Bullet outdoor IP Camera, integrated infrared illuminator	
2	Sensor Type	1/2.7" Progressive Scan CMOS	
3	Max Resolution	1920x1080 @ 30fps	

4	Dynamic Range	69db	
5	IR	Yes, Infrared illuminator with illumination capabilities up to 30 Mtrs	
6	Lens/Iris	3.6 to 9 mm or better with Motorized Zoom Lens	
7	Field of View	37.5°-95.98° Horizontal	
8		21.6°-53.8° Vertical	
9		42.6°-109.46° Diagonal	
10	Audio I/O	The camera supports full-duplex audio and options for half-duplex operation, Camera should allow the connection of an optional Y-cable or mini cable with BNC connector. The Camera should allow to connect a video monitor to the mini cable with BNC connector. Camera should have option to connect an external microphone. Camera should have Focus assist button, which will use in conjunction with an analog display to fine-tune the IP camera focus at local site. Audio in x 1	
11	Digital I/O	(3.5-mm miniature jack)	
12		Audio out x 1	
13		(3.5-mm miniature jack)	
14		DI x 1	
15		DO x 1	
16	Max Illumination	Colour: 0.5 lux	
17		B/W: 0 lux w/Illuminator Active	
18	Day/Night	Automatic, manual, scheduled	
19	Local Storage	Should support Micro SD -min 32 GB	
20	Video Compression & Video Streaming	● Single-stream H.264 or MJPEG up to 1080p (1920 x 1080) at 30 fps ● Dual-stream H.264 and MJPEG ◦ Primary stream programmable up to 1280 x 720 at 30 fps ◦ Secondary stream programmable up to 960 x 544 at 15 fps	
21	ONVIF	Should support for ONVIF 2.0 allows for standards-based interoperability	
22	POE and External Power	12V DC, 24V Ac and PoE- 802.3af compliant (Class 3)	
23	Power Consumption (in watts)	Max 10 Watt at DC	

24	Supported Protocol	Dynamic Host Control Protocol (DHCP), Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS), Network Time Protocol (NTP), Real-Time Transport Protocol (RTP), Real-Time Streaming Protocol (RTSP), Simple Mail Transfer Protocol (SMTP), Secure Sockets Layer/Transport Layer Security (SSL/TLS), TCP/IP, Secure Real-Time Transport Protocol (SRTP), Bonjour, Simple Network Management Protocol (SNMP), and Secure Shell (SSH) Protocol. Differentiated-services-code-point (DSCP) marking and class-of-service (CoS) marking	
25	Environmental Certification	IIP67- and IK10-rated housing, Camera should have sun shield, wall mount bracket and waterproof Ethernet Cable from same OEM	
26	Operating Temperature	40° to 122°F (-40° to 50°C)	
27	Certifications Safety	UL60950-1 2nd edition CSA22.2-No.60950-1 IEC/EN60950-1 2nd edition IEC/EN60825	
28	Certifications EMC-Requirements	CISPR22 Class-B ICES-003EN55022EN55024 EN61000-3-2/-3-3 Class-A VCCI Class-B KN22 Class B KN24	
29	Light sensor	Senses the level of ambient light to determine when to switch day/night mode.	
30	Auto Detection & Configuration	The camera should be automatically discovered and configured when connected to VMS or Network Switch, to set the right network parameters for the video stream on the network.	

5.4   Smart Parking Solution

5.4.1 Requirement

Sl. No.	Description	Compliance (Y/N)	Deviation (Y/N)
1.	Parking management desktop and mobile application should be able to create and update parking location, block , slot and rate information		
2.	Parking management desktop application should be able to update all assets and hardware information for a parking place		
3.	Parking management desktop application should support error reporting and diagnostics for all assets and hardware for a parking place		
4.	Parking management desktop and mobile application should provide parking availability and		

	occupancy		
5.	Parking management desktop application should provide parking fee collection reports		
6.	The available parking slots can be viewed through • parking mobile application • variable message sign boards		
7.	Wirelessly connected variable sign boards should be available at the point of interest (specified by Jaipur Smart City Limited) in the approaching road displaying the available slots		
8.	Bidder should have hand held point of sale system for parking ticketing		
9.	The entire system should provide real time reports to the concerned parties (Municipal Corporation and the contractor) of the parking scenario		
10.	All the data collected to be provided to the concerned parties in a readable format on demand		
Off – Street Parking Requirements			
11.	Nearest available parking lots are shown using maps and if public decides to reserve it, reservation is done with payment done from e-wallet or after physically going there in which case the parking lot might or might not be available.		
12.	If parking slots are not available, the minimum waiting time for getting an available parking slot should be displayed in parking mobile application		
13.	If parking slots are not available for parking place, the user is allowed to enter the parking place and leave immediately through exit. The time within which the user has to exit without getting charged for his stay should be configurable. If the user takes more time to exit than the allowed time, user should be charged.		
14.	The entry to off street parking place should be managed by automatic boom barrier and parking ticket dispensing machine		
15.	The vehicle number and image of the number plate should be captured at the time of entry and exit of parking should be stored		
16.	The parking management application should calculate the final settlement amount based on the user privileges, dynamic pricing and issue a receipt		
17.	The smart card management system (card and reader) should be integrated with the parking management application		
18.	The parking management application at any location should be able to function for a day even if it is not connected to the data centre		
19.	The entire solution should function 2 hours with uninterrupted power supply backup		

5.4.2 SYSTEM COMPONENTS

5.4.2.1 ANPR Camera

ANPR Cameras mounted at the entry and exit of the parking lot to capture Vehicle Number Plate and check against the parking database for vehicle authentication and grant user access based on privileges

Minimum Specifications		Compliance (Y/N)	Deviation
IP 2 Mega pixel outdoor IR camera			
Image sensor	Minimum ½.9inch CMOS		
Total sensor pixels	Minimum 1396 x 1097		
Power			
Power Supply	12 VDC		
Power-over-Ethernet	48 VDC		
Nominal Current Consumption	maximum 300 mA (12 VDC) Maximum 75 mA (PoE 48 VDC)		
Power Consumption	Maximum 12 W		
PoE	IEEE 802.3af (802.3at Type 1) Power level: Class 1		
Video performance			
Sensitivity	Minimum Color 0.07 lx Minimum Mono 0.05 lx		
Dynamic range	76 dB Wide Dynamic Range (WDR)		
Video streaming			
Video compression	At least H.264 (MP) and M- JPEG		
Streaming	Multiple configurable streams in H.264 and MJPEG, Configurable frame rate and bandwidth.		
Overall IP Delay	Minimum 120 ms, Maximum 340 ms		
GOP structure	IP		
Encoding interval	1 to 25 fps		
Video functions			
Day/Night	Color, Monochrome, Auto		
Adjustable picture settings	Contrast, Saturation, Brightness		
White Balance	4 automatic modes, manual mode and measure		
Contrast enhancement	On/off		
Privacy Masking	Four independent areas, fully programmable		
Video Analysis	MOTION+		
Shutter	Automatic Electronic Shutter; Fixed shutter selectable; Default shutter		
Backlight compensation	On/off		

Noise reduction	Intelligent Dynamic Noise Reduction with separate temporal and spatial adjustments		
Sharpness	Sharpness enhancement level selectable		
Other functions	Image mirror, Image flip, Pixel counter, Video watermarking, Display stamping, Scene modes		
Input/output			
Alarm input	1 input with short or DC 5V activation		
Alarm output	1 output with input rating of Maximum 0.5 A, 30 VAC / 40 VDC		
Optical			
Lens mount	On Board mounted		
Lens type	Varifocal lens 3.3 - 12 mm, DC Iris F1.4 – 360, with IR corrected lens		
Horizontal field of view	Minimum 32º - 100º		
Vertical field of view	Minimum 18º - 53º		
Network			
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, DHCP, APIPA (Auto-IP, link local address), 802.1x, SMTP, iSCSI, UPnP (SSDP), Dropbox, CHAP, digest authentication, DNS, DNSv6, DDNS		
Encryption	DES, 3DES, TLS 1.0, SSL,		
Ethernet	Minimum 10/100 Base-T, auto-sensing, half/full duplex		
Connectivity	Auto-MDIX		
Interoperability	ONVIF Profile S and /or GB/T 28181		
Software			
Unit Configuration	Viewing Via web browser or Configuration Manager		
Firmware update	Remotely programmable		
Software viewer	Web browser or third party software		
Environmental			
Operating Temperature	Minimum -30 ºC to +60 ºC maximum		
Storage Temperature 40	Minimum -30 ºC to +70 ºC maximum		
Humidity	Minimum 20% to 90% relative humidity (non-condensing)		
Certifications and approvals			
Standards	EN 50130-4		

	EN 60950-1 EN 50130-5 Class II EN 55022 class B EN 55024 cUL 60950-1 ICES-003 Class B VCCI J55022 V2/V3 EN 50121-4 CAN/CSA-C22.2 NO. 60950-1-07 C-tick AS/NZS CISPR 22 (equal to CISPR 22) (Certification to be provided for each of the above)		
ONVIF conformance	EN 50132-5-2; IEC 62676-2-3		

5.4.2.2 Parking Display

System should integrate LED displays to communicate the parking slots availability at the parking lot entrance. These displays should be able to display parking offers and advertisements too.

The application interface should be provided to stream the information to specific displays over GPRS/3G/4G connection. When wireless network connectivity goes down, the data needed to be cached and pushed to the display, until the network connectivity is restored. The displays should support Graphics and text in English and Regional languages.

Parameter	Min. Requirement	Compliance (Yes / No)	Deviation
Estimated LED Life Span	Minimum 100,000 hours		
Pixel	Each pixel make up by 3 in one SMD		
Pixel of each character module	16x8		
Module size (W*H) mm	minimum 256x128		
Total LED number /each module	128pcs / 3 in 1 SMD		
En12966 Compliance	L2;C2;R2;B6		
Consumption W/m^2	300 Max and 90 Typically		
Ambient Temperature	-20^0 C ~ 65^0 C		
Ambient humidity	20% ~ 90%		

Cabinet Size dimension W*H)mm	828*444(including 30mm border for each side)		
Cabinet Size Sq / m²	0.37		
Min Display size	W 975mm * H 309 mm * D50 mm		
Ingress protection	IP67		
Power supply	240 Voltage		

5.4.2.3 Parking Ticket Dispensing Machine

Parking Ticket Dispensing Machine should print the Parking Ticket with the parking slot number allotted, entry time, duration of stay, rate, unique transaction ID/booking ID and the Vehicle Number Plate on entry

Parameter	Min. Requirement	Compliance (Yes / No)	Deviation
Printer	Integrated thermal with graphics capabilities, 18 lines per second, 22, 32, or 42 columns; 40mm paper roll		
Paper	40mm roll: Length: 163mm; Max Width: of 78mm;		
Ingress protection	IP65		
Power supply	110 ~ 240 Voltage		
Push Button	Contact closure/open on press		
Environmental	0° to 50° C (32° to 122° F) operating temperature: 5% to 90% relative humidity, non-condensing Storage temperature: -20º to 60º C / 5% to 90% RH; non-condensing		

5.4.2.4 Boom Barrier

Automatic Boom Barriers with inbuilt magnetic loop detector to stop and validate the entry of the vehicle to the parking and exit of the vehicle from the parking

Parameter	Min. Requirement	Compliance (Yes/ No)	Deviation
Length of the beam with both straight and	3.5 meter		

articulated options			
Max opening time	2 sec		
Max closing time	2 sec with programmable option		
Duty cycle or % Use frequency	Greater than 70 %		
Power Unit	Electro-mechanical		
Power Consumption Max.	30 W		
Controller board interface	NO/NC / TCP/IP		
Sensing	Photocell based optical sensing and magnetic loop detector		
MCBF(Mean cycle between failure)	8000000 with 3rd party certification		
Input power supply	230 V AC ± 10%, 50/60 Hz		
Ingress protection class	IP 54		
Operating temp	-20 to + 55 Deg C		
Beam type	round or rectangular or octagonal		
Security	Door with security lock		
Manual override	Automatic barrier unlocking device in case of power failure. Opening should be possible by hand as well.		
Safety feature while car under the barrier closing	Reverse on contact or non-contact sensing mechanism, Auto sway away feature		

5.4.2.5 Parking Payment Machine

Payments at parking lots exit are through Parking Ticket Machine. Need to take bank notes, credit cards including Rupay, NFC/EMV, smart cards and debit cards.

Parameter	Min. Requirement	Compliance (Yes / No)	Deviation
Processor	400 MHz 32-bit/500 MIPS processor		
Memory	192 MB (128 MB of Flash, 64 MB of SDRAM) standard, designed to support up to 500 MB		
Display	2.8", 320x240 pixel color TFT (QVGA)		

Mag-stripe Reader	Triple track (tracks 1, 2, 3), high coercivity, bi-directional		
Primary Smart Card	ISO 7816, 1.8V, 3V, 5V; synchronous and asynchronous cards; EMV Approved		
SAM Card Reader	2 Security Access Modules (SAMs)		
Battery	Li-Ion 3.6V / 2200mAh (8Wh)		
Keypad	3 x 4 numeric keypad, plus 4, screen-addressable keys and a navigation key		
Peripheral Ports	Single USB connector and Integrated Charging		
Printer	Integrated thermal with graphics capabilities, 18 lines per second, 22, 32, or 42 columns; 40mm paper roll		
Wireless Modem	3G /4G		
Protocols	Application selects between asynchronous protocols (Visa 1, Visa 2 and others) and synchronous protocols (including ISO 8583/SDLC)		
Security	3DES encryption, Master/Session and DUKPT key management; PCI PTS 3.0 approved		
Printer Paper	40mm roll: Length: 163mm; Max Width: of 78mm;		
Environmental	0° to 50° C (32° to 122° F) operating temperature; 5% to 90% relative humidity, non-condensing Storage temperature: -20º to 60º C / 5% to 90% RH; non-condensing		
Voltage	AC input 100-240 VAC, 50/60 Hz; DC output 5 VDC, 1 Amp		
Contactless Applications	MasterCard PayPass M/Chip | MasterCard PayPass MagStripe | Visa payWave MSD | Visa payWave qVSDC | Discover Zip | American Express ExpressPay |		

	Pass-through access to ISO 14443-4 and MiFare card, for direct host terminal based application access		

5.4.2.6 Network switch

A network switch is required to connect the devices at entry and exit

Parameter	Min. Requirement	Compliance (Yes / No)	Deviation
IP Rating	IP 30		
Operation Temperature	0 deg to 60 deg		
Input Voltage	48 VDC		
Power Consumption	17W		
PoE Ports	4		
Certifications and approvals			
Standards	EMS: IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: Signal: 10 V IEC 61000-4-8		

5.4.2.7 Parking lot Gateway

Minimum Specifications		Compliance (Y/N)	Deviation
Working temperature	- 35 ℃ to 70 ℃		
Emission current	400 mA		
Receiving current	130 mA		
Antenna	external SMA antenna		
Receiver sensitivity	-102 dBm		
Output power	≥+ 18dBm		
Communication	≥ 1.5km (Visual)		

range	
Transmission rate	125kbps (adjustable)
Working Frequency	2.4Ghz~2.498Ghz
Serial working rate	2400 ~ 115200bps (optional)
Communication mode	DSSS
Voltage input	AC 110 ~ 250ACV
Working mode	Multi-channel coordination
Output connection mode	Aviation joint
Output interface	RS232/RS485
Data interface	Not support hot swap
Special design	Waterproof &Lightning protection
Operating voltage for load control	AC220V
Shell	Aluminum material, sand blasted surface
IP Grade	IP65

5.4.2.8 Software

All software used for IPM has to be compatible with the platforms specified in the below table

Software	Specification
Web Application	Should run on browsers IE 11+, Chrome 45+, Firefox 45+
Database	Open Source or Enterprise
Mobile Application	Should run on iOS 9+, Android 5+

5.4.2.9 Server, Storage, wired and wireless connectivity

Processing units, local connectivity, storage and UPS including their maintenance for 5 years for each location is in the scope of tenderer

3 servers of the specified configuration and required enterprise OS, database and virtualization software is expected to be provided by the state data centre.

Minimum Specifications		Compliance (Y/N)	Deviation (If Any)
CPU L3 CACHE Memory	25MB L3 cache		
Memory	64 GB DDR4		
Memory Protection	Advanced ECC with multi-bit error protection and memory online spare mode		
HDD Bays	Up to 8 SFF/4 LFF max, HDD/SSD		
Optical drive Bay	One optional optical drive bay to install DVD-ROM or DVD-RW.		
Hard disk drive	5TB at 15K SAS HDD		
Controller	Embedded 6Gb/s SATA controller RAID controller with RAID 0/1/10/5 for SATA Disk.		

Networking features	1. 1Gb 2-port network adaptor 2. 10Gb 2-port Ethernet adaptor		
Interfaces	Video - 1 4 USB ports (standard) Micro SD slot - 1		
Bus Slots	Three PCI-Express 3.0 slots, at least two x8 and one x16 slots		
Power Supply	Redundant Power Supplies		
Fans	Redundant hot-plug system fans		
Graphics	Integrated Matrox G200 video standard 1280 x 1024 (32 bpp) 1920 x 1200 (16 bpp)		
Industry Standard Compliance	ACPI 2.0b Compliant PCIe 3.0 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 3.0 Support ASHRAE A3/A4		
Embedded system management	Should support monitoring ongoing management, service alerting, reporting and remote management with embedded Gigabit out of band management port Server should support configuring and booting securely with industry standard Unified Extensible Firmware System should support RESTful API integration System management should support provisioning servers by discovering and deploying 1 to few servers with Intelligent Provisioning System should support embedded remote support to transmit hardware events directly to OEM or an authorized partner for automated phone home support		
Security	Power-on password Serial interface control Administrator's password TPM 1.2 UEFI		
Operating Systems and Virtualization Software Support	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware		
Provisioning	Essential tools, drivers, agents to setup, deploy and maintain the server should be embedded inside the server. There should be a built -in Update		

	manager that can update firmware of system by connecting online.		
Remote Management	1. System remote management should support browser based graphical remote console along with Virtual Power button, remote boot using USB/CD/DVD Drive. 2. Server should have dedicated 1Gbps remote management port. 3. Server should support agentless management using the out-of-band remote management port. 4. The server should support monitoring and recording changes in the server hardware and system configuration. 5. Applications to access the server remotely using popular handheld devices based on Android or Apple IOS should be availabile.		
Server Management	The Systems Management software should provide Role-based security		
	Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD. Should support automatic event handling that allows configuring policies to notify failures via e-mail, pager, or SMS gateway or automatic execution of scripts.		
	Should provide an online portal that can be accesible from anywhere.		
	Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes		
	Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. Should support the reports to be saved in HTML, CSV or XML format.		
	Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.		
	The Server Management Software should be of the same brand as of the server supplier.		
	Infra Platform /Infra Software to support a variety of different		

	hypervisors, such as VMware, Microsoft Hyper-V, Red Hat KVM, and HP Integrity VM	
	Solution available to Deploy a fast and easy installation via software appliance delivery mode. With its own OS and Database to provide infra and lifecycle management	
	Management software should support integration with popular virtualization platform management software like vCenter, SCVMM and RedHat RHEV	

5.5 Environment Sensors

S. No.	Parameter	Specification
1.	Measurement elements	Temperature, Humidity, Ambient Light, Sound, CO, NO2, O3, SO2, PM2.5, PM 10
2.	Measurement component Measurement range (must measure required ranges)	NO2: 0 – 220 ppb, O3: 0 – 390 ppb SO2: 0 – 630 ppb CO: 0 – 31 ppm PM 2.5: 0 to 250 micro gms / cu.m PM 10: 0 to 450 micro gms / cu.m Light: up to 10,000 Lux Noise: up to 100 dB (A)
3.	Temperature, Pressure and Humidity Sensor	Real-time Temperature Range: outdoor 0ºC ~ 50ºC Real-time in Air Humidity Level Display Real-Time Pressure Display (in Bars or millibars)
4.	Connectivity (Minimum)	Wi-Fi, Ethernet or GSM (3G) Sensors must have provision to interchange between Wi-Fi or GSM systems easily
5	Software and Data backup	Backup measurement data for upto 5 days in case of network failure or system maintenance cycles
6	Mechanical Enclosure	Single enclosure with all components inside or simplified mounting
7	Data validity and stabilization	Sensors must ensure data of sensors is valid and not require stabilization times in case of power outages less than 5 hours.

8	Product origin and certification	Products must be made in India
		Must also qualify minimum international standards on product certification such as CE, FCC and PTCRB

5.6 Smart Transport Solution

5.6.1 Bus LED Specification

S.NO.	Description	Compliance (Yes/NO)
1	To display Bus number and Destination in Fixed, Scrolling and flashing mode formats with the help of SCU / Bus Controller with fixed route number up to 6 characters with capability to show customized graphics	
2	Display in English (2 lines) / Hindi(1 line) / Regional (1 line) Language	
3	Total display height is capable to accommodate two lines in English language and the Individual heights of each line are adjustable to enable one line to be larger/smaller than the second line.	
4	Possible to display, concurrently, different messages	
5	Able to display special signs like signs for 'PWD enable bus', 'ladies special'.	
6	Display in English and local languages using Microsoft fonts via window based software package	
7	Possible to change/choose/select a 'route' remotely over the air from back office and provide current route information to back office through SCU	
8	Back office is able to check, via SCU, the version of firmware loaded on the display.	
9	Able to store Diagnostic trouble codes (DTC), Parameters identifiers (PID) and data retrievable through SCU	

5.6.2 GPS Device Specification

S.NO.	Description		Compliance (Yes/NO)
1.	GPS Receiver	32 channels GPS-SBAS ; L1 Band (1575.42 MHz)	
2.	Sensitivity	-154 dBm acquisition during Hot start -160 dBm reacquisition -162 dBm tracking	
3.	TTFF	2 sec (typical) Hot start 36 sec (typical) Cold start	
4.	PVT accuracy	Position (horizontal): 2.5 m (CEP) using WGS84 DatumSpeed: 0.1 m/s Heading: 0.1 deg	
5.	Aiding	AGPS compatible (GPS data from server can	

		be accepted)	
6.	**GSM / GPRS**		
7.	General	Dual / Quad band support	
8.	Class	GPRS Class 10	
9.	Output power	Class 4 (2W) at 900MHz Class 2 (1W) at 1800MHz	
10.	**System**		
11.	Processing core	ARM7 @ 90MHz	
12.	Memory	On AST-230 chip: 2Mbit On Navika-110 module: 4Mbit SRAM (optional), 8Mbit Flash On board: 256MB Serial Flash (provision)	
13.	Ignition input	1	
14.	Digital inputs	1	
15.	Digital outputs	1	
16.	**Environmental Characteristics**		
17.	Operational Temperature Range (Ambient)	-40°C to +70°C	
18.	Storage Temperature Range	-40°C to +85°C	
19.	Humidity	95% non-condensing +30°C to 60°C	
20.	**Electrical Characteristics**		
21.	Mains supply	6.0V to 36V through interface connector	
22.	Backup battery	3.3V to 4.2V through Li-Ion / Li-polymer battery (1100mAH) Supports 5 hrs. of operation at 10 sec update rate	
23.	**Antenna**		
24.	GPS	Internal active antenna	
25.		Provision to mount external active antenna (hardware re-configuration required)	
26.	GSM	Internal antenna	
27.	**Message protocol**		
28.	Output	NMEA 0183 message output Custom ASCII	
29.	**Storage**		
30.	Data storage capacity	50000 data records (assuming 128 byte/record)	
31.	**Additional Features**		
32.	FOTA (Firmware over the air)	Supports firmware upgrade over the air for the devices	
33.	Over the air configuration	Supports over the air configuration of various parameters such as APN, server IP	
34.	Data update rate	As fast as 5 sec in TCP	
35.	LEDs	LEDs to indicate power, GPS fix and GSM/GPRS status	

36.	Alerts	Supports alerts for low battery, device tampering, etc.	
37.	**Enclosure**		
38.	Ingress protection rating	IP65 and higher ratings	

5.6.3 Station PIS Specification

S.NO.	Description			Compliance (Yes/No)
1.	Display	Screen Size	109.22 cm	
2.		Aspect Ratio	16:9	
3.		Backlight Scanning	100 Hz	
4.		Resolution	1920 × 1080 pixels	
5.		Viewing Angle	178 °/178 °	
6.	Terminal	Video In	RCA × 1	
7.		Audio In (L/R)	RCA Pin Type × 2	
8.		HDMI N	TYPE A Connectors × 3	
9.		COMPONENT IN USB Input	Y, PB/CB, PR/CR × 1 USB 2.0 × 2	
10.		LAN Input	Yes	
11.		AUDIO out	RCA Pin Type × 2	
12.		SPDIF	Yes	
13.		VGA IN	Yes	
14.		PC AUDIO IN	Yes	
15.	General	Power Requirements	AC 110~240 V, 50/60 Hz	
16.		Built in Speakers	Yes	
17.		Operating Environment	Operating Temperature: 0 °C to 40 °C Operating Humidity: 20% to 80%	
18.		Storage Environment	Temperature: 15°C to 60 °C Humidity: 20% to 90% (non-condensation)	
19.	Features	Display mirroring	Yes	
20.		Remote Sharing	Yes	
21.		Wi-Fi	Yes	
22.		Ethernet	Yes	
23.		Media Player	Yes	
24.		Double USB Sharing	Yes	
25.		DLNA 1.5	Yes	

5.6.4 Smart Transport Software

Module Wise Functionality Requirements

Sr.No.	Functionality	Public Transport Requirements Served
1	**Multi-Fleet System**	• Multi-fleet systems: All-in and simultaneous management of several fleets. The sharing of resources (communications system, control center and human management resources) creates beneficial economies of scale.
2	**Information about all running and idle vehicle with the following information** Driver Name, Contact Number, Speed, Current Location, Schedule time to reach next destination, No. of trips till now, Current trip number, No. of Delayed trips, Current trip status	• A section which enables the user to have a full view of all activities of the fleet on a single Console. The dashboard shall form part of the UI delivery which shows all key performance and tracking indicators enabling control center staff and management team of Public Transport Authority to take proactive Decision to manage Transportation operations in a highly efficient manner. • Application development and customization of screens, forms, reports and queries of data specifically include: • Locating a particular bus in the fleet • Auto pan facility for tracking a particular bus • Sending online messages to an individual bus or group of buses selected on a map
3	**Route wise vehicle information**	
4	**Violations / Alerts / Incidents**	
5	**Fleet Summary**	

Module: Live Vehicle/Real Time Tracking		
Sr.	**Functionality**	**Public Transport Requirements Served**
1	**Tracking and Monitoring** • Bus Status (Running, Stopped, Ignition Off) • Running Speed • Route Source & Destination • Stoppages Visited • Current Location • Stoppages to Visit • Bus Identity, Route Identity and Name	• Integration of GPS with digitized map for tracking of vehicles on a real-time basis including distress messaging between the vehicle and the control station. • To monitor whether the buses are adhering to its scheduled route and timetablethroughout the route and identify if there are any deviation. • Real-timetwo-way messaging between buses & Central Control Room. • To monitor whether the buses halt at all

	Punctuality • Tracking Bus Actual Transit against Scheduled Transit	the scheduled bus stops.
		• Generating messages pertaining to speed violation, skipped bus stops etc., to Public Transport officials at the Central Control Station, online along with the Geographical position and the violated vehicle number.
3	**Current Location & Time**	
4	**Transit Diagram and ETA**	

Module: Reports & MIS		
Sr.	**Functionality**	**Requirements**
1	Different Analytical, Revenue Management and Alert reports(Through Data received from legacy Revenue Collection System)	▪ Generation of exception reports like deviation from schedule route, timing, Missing Bus stops, Punctuality factor etc. based on captured vehicle data ▪ Calculation of the actual distance (in Kilometers) traveled by the vehicle, using the map ▪ **Reports:** ▪ Speed Log ▪ Stoppage Log ▪ Summary Report Day Wise ▪ Summary Report Vehicle Wise ▪ Performance Day Wise ▪ Performance Vehicle Wise ▪ Statistics: Monthly Performance ▪ Alerts: ▪ Fleet Summary ▪ Vehicle Status ▪ Speed Violation ▪ Real-time application data delivery for PIS
2	Speed Log	
3	Stoppage Log	
4	Summary Report Day Wise	
5	Summary Report Vehicle Wise	
6	Performance Day Wise, Week Wise, Monthly	
7	Performance Vehicle Wise	
8	Monthly Performance	
9	Calculation of the actual distance (in Kilometers) traveled by the vehicle using the digitized map.	
10	Depot Report	
11	Deviation from scheduled route or timing.	

5.6.5 Passenger Information System

a) The passenger information system shall consist of following units which shall offer customers schedule and real-time information regarding operations of Bus Service and extend ease of information Delivery related to travel:

❖ Display Screen on Bus stop
❖ In bus Display buses
❖ Voice announcement system on Bus
❖ Integration of Web Portal for Bus Schedule & ETA
❖ Development of Mobile Application & integration for bus schedule & ETA etc.

b) The display systems at bus stop and shall display real-time information of the route and estimated time of arrival using fixed data connections/mobile data connection with the central vehicle monitoring system. The system shall have capabilities to clearly indicate the current locations, expected time of arrival, route no, destination, messages, of the buses plying on the route from a central database on the display to assist passengers.

c) PIS equipment's shall be fitted on bus as per UBS 2 Specification. The bus display units on shall display bus route information. The voice information system shall also derive information of the next bus stop / terminal based on the location information derived from the GPS unit and shall have capabilities of playing prerecorded voice information in the bus.

d) The web portal shall enable passengers to get information about the bus schedules on various routes operated and shall also have facility to deliver ETA based on the real-time data from GPS central monitoring system. The web portal shall also provide facility to passengers to extract such data through the mobile communication system.

5.6.6 Mobile Application

Real-time bus tracking system (Support 3rd party application provider)
    (a) Complete information on bus routes and stops to commuters
    (b) Real-time ETA for a combination of bus route and stop
    (c) Real-time tracking for the bus on the map

Mobile Application for IOS, Android and Windows mobile devices
a) The bidder shall develop mobile apps which shall include a mobile application to help passengers to get information about the buses, search and view bus schedules on various routes and deliver ETA based on their real time location.
b) System shall show the time table of the buses, fare structure etc.

5.6.7 PIS on bus

Passenger information system on bus shall function as an independent system and shall not be directly dependent on the CCS. They shall receive display information and voice announcement commands from the onboard GPS vehicle control module based on stored memory on the bus.
Specifications of PIS units shall be installed on bus as per UBS 2

5.6.8 Voice Announcement system on Bus

The Voice PIS must play clearly audible pre-recorded voice announcements informing passengers of next bus Stop on route. The voice PIS shall interface with the on-bus GPS module to gather location information and making the appropriate next stop/terminal announcement.

5.6.9 Web Portal for Bus Schedule & ETA

Service provider/bidder shall have to develop web pages which shall be linked to the existing Portal to download route information, route schedule and real-time ETA. This information must be accessible using WAP enabled mobile phones also. Google/GIS map Integration required for AVLS, PIS, ITS

5.7 Smart Waste Managements

5.7.1 GPS Device Specification

GPS Receiver	32 channels GPS-SBAS; L1 Band (1575.42 MHz)
Sensitivity	-154 dBm acquisition during Hot start -160 dBm reacquisition -162 dBm tracking
TTFF	2 sec (typical) Hot start
	36 sec (typical) Cold start
PVT accuracy	Position (horizontal): 2.5 m (CEP) using WGS84 Datum Speed: 0.1 m/s
Under open sky condition	Heading: 0.1 deg
Aiding	AGPS compatible (GPS data from server can be accepted)
General	Dual / Quad band support
Class	GPRS Class 10
Output power	Class 4 (2W) at 900MHz Class 2 (1W) at 1800MHz
Processing core	ARM7 @ 90MHz
Digital inputs	1 (0V-24V)
Digital outputs	1 Open collector
Operational Temperature Range (Ambient)	-40℃ to +70℃
Storage Temperature Range	-40℃ to +85℃
Humidity	95% non-condensing +30℃ to 60℃
Mains supply	6V to 32V through interface connector
Backup battery	3.3V to 4.2V through Li-Ion / Li-polymer battery (1100mAH) Supports 5 hrs. of operation at 10 sec update rate
GPS Antenna	Internal active antenna
	Provision to mount external active antenna (hardware re-configuration required)
GSM Antenna	Internal antenna
Output MSG Protocol	NMEA 0183 message output Custom Navika ASCII message format
Data storage capacity	50000 data records (assuming 128 byte/record) – 128 Mbits Default configuration 4 Mbits
FOTA (Firmware over the air)	Supports firmware upgrade over the air
Over the air configuration	Supports over the air configuration of various parameters such as APN, server IP, port, update interval and many more
LEDs	LEDs to indicate Power, GPS and GSM/GPRS

	status
Alerts	Supports alerts for low battery, over speeding and many more
Ingress protection rating	IP65 or above

5.7.2 RFID Tags

Sr No.	Parameter	Specifications
1	Operating Frequency	860-960MHz, (Should be de-licensed)
2	Chip Type	AC 230 VEPC class 1 Gen 2 compliant up to 512 bits
3	Power Frequency	50 Hz
4	Storage Temp	-40°C to +70°C
5	Operating Temp	-5°C to +55°C
6	Ingress Protection	IP 65
7	Operating mode	Passive (battery-less transponder)
8	Flexible Read Range	Read up to 5 meters or higher.
9	Use	Attachment by screws with the help of two holes/Adhesive and temporary handheld type.
10	Environment	Metallic/ Glass
10	Others	Attachment by screws with the help of two holes/Adhesive and temporary handheld type.
		Write endurance 100000 cycles
		Rugged construction for high durability

5.7.3 RFID Readers

Sr No.	Parameter	Specifications
1	Transponder Protocol	EPC Global – Gen 2 (ISO 1800-6C)
2	Antenna	Integrated monostatic or Bi-static or External
3	RF Power Output	From 10 dBm to 30 dBm (1 W), +/-1 .0 dBm accuracy
4	Frequency	865-867 MHz or Any other frequencies approved by WPC India
5	Data Control Interface	Industrial port: 10/100 Base-T Ethernet interface, Serial RS232 port/ GPRS.
6	External DC Power	10 - 30 VDC supply voltage.
7	Maximum DC power	upto 40W
8	Operating temperature	From -5°C to +50°C
9	Storage Temperature	From -40°C to +70°C
10	TAG Buffer	More than 50,000 tags
12	Minimum TAG Read Distance	up to 5meters.

5.7.4 Specification for Level Sensors

Power Requirements	AC units 115 VAC 60 Hz or 230 VAC 50 Hz; DC units 12 to 30 VDC 0.07 Amps
Ambient Temp	-40°F to +140°F (-40°C to +60°C)
Process Temp	Up to 200°F (93°C)
Operation	Ultrasonic
Frequency	25 to 148 KHz
Measurement Range	40' maximum
Accuracy	± 0.25%
Beam Angle	6° - 12° conical at –3dB
Temp Compensation	Continuous in transducer
Protection Rating	IP 65

5.8 Smart Communications

1. All the Solution Components like Call Control, Video IP Phones, IP Phones, Integrated Room System, Conferencing Unit, etc. should be from the same OEM for seamless interoperability.
2. OEM should be in leaders' quadrant of latest Gartner Magic Quadrant of Group Video Systems and Corporate Telephony.
3. SI/OEM must have spares depot in Rajasthan to provide prompt hardware replacement during warranty period.

Fully OEM Integrated Single Screen Room System		
Component	**Feature Description**	**Compliance (Yes / No)**
Package	Fully OEM Integrated System with 1 x 70 inch display, 2 x Full HD 1080p camera, Full HD 1080p Codec, Microphones, Cables, with intuitive touch panel to control all sub-components. Both cameras should have the ability to zoom and focus automatically on the person who is speaking. The system should be OEM integrated and all components including Codec, display, Cameras, Control panel, Microphone and Speakers from the same OEM. Integrated system all interconnecting cables should be routed inside the integrated framework with only one outlet for powering on the system.	
Protocols	The system should be able to call any H.323 and SIP endpoint directly or indirectly.	
	It should be possible to share content via BFCP and H.239	
	Endpoint should support the latest video coding standard eitherH.263, H.264, H.265	
	It should support Audio coding G.722, G.722.1, G.711	
Network	Endpoint should support bit rate up to 8 Mbps or more on IP (H.323and SIP)	

	Minimum 2 X Gigabit Ethernet: Should support 10/100/1000 BASET	
Main Video Resolution	Shall work in high definition video resolution of 1080p60fps for livevideo for both Transmit and receive	
Content Resolutions	The system should support 1080p30fps content.	
Camera	Inbuilt in the Integrated system with 2 cameras	
	Both cameras should be capable of automatic voice tracking capability so as to automatically zoom and focus on to the person speaking in the room.	
	Zoom: Minimum 10x (optical) or better	
Video Inputs	Minimum 3 HDMI inputs and 1 DVI input for connecting PC / laptop	
Video Outputs	Minimum 2 x HDMI or similar or better to connect two displays. Additional Outputs are desirable.	
Audio Inputs	It should support minimum 7 Omnidirectional / Directional Microphones. 3 microphones to be supplied from day one with the system.	
Encryption	AES 128 bit or more, TLS, SRTP, HTTPS or similar or better	
User Interface	Intuitive touch panel to operate the entire system	

Conferencing Unit at Central Location

Component	Feature Description	Compliance (Yes / No)
System Capacity	Conferencing System should have minimum 24 ports at 1080p 60fps on IP in continuous presence mode with 60fps and H.264 resolution and AES encryption.	
	Multi-point video Conferencing Solution should be capable of offering a Full High Definition 1080p 60fps in real-time for 24 number of concurrent ports/systems in single call or multiple multi-party sessions in continuous presence and voice activation mode & with intelligent built-in capability for dynamic bandwidth, resolution matching to give each user an experience basis his available bandwidth.	
	It should as well provide network flexibility for a reliable distributed architecture and cost-effective scalability for future requirements.	
	Conferencing System should be deployed in High Availability and should be redundant (1:1)	
	It should have an internal inbuilt hot-swappableredundant power supply.	
	It should provide flexibility to the users, where users can join the video conference call using WebRTC compatible browser. This facility should be available from day one.	
Video Standards and Resolutions	It should support H.263, H.264, WebRTC	

	It should support 1080p 60fps, 30 fps, 720p 30 and 60 fps.	
Content Standards and Resolutions	Content sharing should be possible at 1080p 30fps	
	It should support H.239 and encryption in SIP & H.323 modes	
Audio Standards and Features	It should support G.711, G.722, G.722.1	
	It shall support aspect ratio of 16:9 and 4:3.	
	It shall support a mix of resolutions in both Voice-activated mode and Continuous Presence. Each endpoint shall receive at the maximum of its capacity without reducing the capacity of another.	
	Dynamic CP layout adjustment (it will choose the best video layout according to the number of participants in the conference).	
	It should support distributed architecture with intelligent and automatic call routing. It must support load balancing such that in case there are two instances, conference participants can get distributed across these two instances based on their locations and still join into the same conference.	
Network and security features	It shall support AES encryption 128 bit or above for every participant without affecting any other feature, functionality or port count.	
Interoperability	Apart from Integrated video systems, video IP phones, normal IP phones also should be able to join the conference seamlessly	
General	Integrated VC, Conferencing OEM should be in Leaders' Quadrant of latest Gartner Magic Quadrant Report for Group Video Systems.	
Management & Scheduling		
	Feature Description	**Compliance (Yes / No)**
System	The central management solution should be able to schedule the meeting quickly and easily manage conference infrastructure device configuration and provision of the endpoints.	
System Capacity	The Central management server must support 100 devices capacity from day one and must be scalable to support minimum 250 devices in future through software license.	
Provisioning	The administration should be able to configure individual end points or group of endpoints using user policy from single management console.	
	It should be possible for the endpoint to automatically pull the	

	device and site provisioning information from the system while start up.	
Software Update	It should be capable of automatic and scheduled mechanism to upgrade the software on one or more endpoints with a standard software package thereby eliminating the need to upgrade each endpoint individually.	
Scheduling	The system should support schedule video conference meetings.	
Directory Services	Should support integration with the corporate Active Directory for scheduling the video conference calls.	
	The system should store video dialling information.	

Voice and video Call Control		
	Feature Description	**Compliance (Yes / No)**
System	The Call control solution should be able to register Integrated VC room system, Video IP phones, normal IP phones natively.	
	The system should be a converged communication System with ability to run TDM and IP on the same platform using same software load based on server and Gateway architecture	
	It should be possible to deploy Servers / Call Servers in an active-active configuration over the distributed IP infrastructure (LAN/WAN). The call control system should be fully redundant solution with no single point of failure & should provide 1:1 redundancy. Both the servers should do call processing all the time and act as backup in case of the failure of one server	
	The communication feature server and gateway should support IP V6 from day one so as to be future proof	
	The offered solution must provide a standard based mechanism for QoS implementation	
	Should support AD & LDAP integration for directory synchronization & user authentication	
Support for call-processing and call-control	Should support signalling standards/Protocols – SIP, MGCP, H.323, Q.Sig	
	Voice Codec support - G.711, G.729, G.729ab, g.722, ILBC. Video codecs: H.261, H.263, H.264, and Wideband Video Codec	
	Video telephony support	
	System should be supplied with 50 endpoint license	
Security	The protection of signalling connections over IP by means of authentication, Integrity and encryption should be carried out using TLS	
	System should support MLPP feature	

	Proposed system should support SRTP for media encryption and signaling encryption by TLS	
	Secure HTTP support for Call Server Administration, Serviceability, User Pages, and Call Detail Record Analysis and Reporting Tool. Should support Secure Sockets Layer (SSL) for directory	
General	Call Control & IP phones OEM should be in Leaders' Quadrant of latest Gartner Magic Quadrant Report for corporate telephony.	

Video device with minimum 22-inch screen		
	Feature Description	**Compliance (Yes / No)**
System	Should be an integrated system with at least 14-inch LCD/TFT screen, 1080P resolution (16:9), HD camera and with speakers for wideband audio output. The Codec should be a part of the unit. No separate codec and Screens must be used	
	The LCD/TFT screen should be a touch screen to provide a touch interface to the user	
	Video Standards: • Minimum H.264 and above • The system should support SIP protocol. • Must support desktop sharing SIP calls	
	Video Frame Rate: Must support 1080p 30 fps	
	Video Input: Should have HDMI or DVI (Digital Video Interface) input to connect PC / Laptop directly to the Video conferencing system and display a resolution of XGA/SXGA. The user must be able to toggle between the Laptop/PC mode and the Video conferencing mode at a push of button/icon	
	Video Output: Must have an HD output via an HDMI/DVI output port to display the VC screen onto an external display	
	Should have inbuilt microphone and speaker system.	
Security	Security - Password protected system menu	
Camera	Should be HD at least 6-megapixel camera, with privacy shutter	
	Must support 1080p resolution. Should support Wide formats. Must support 1920 X 1080 resolution	
	The VC unit must allow the camera to be used as a document camera to capture hard copies and transmit it to the far end site	

Colour Screen Phone		
	Feature Description	**Compliance (Yes / No)**
General	Should have minimum 5" or higher LCD display	

Requirements	Volume control to provide easy volume adjustments of the handset, speaker and ringer.	
	Speakerphone and with the ability to communicate in hands-free echo cancellation.	
	Phone should have at least Two 10/100/1000 BaseT port	
	Have at least 5 line keys and 4 soft keys	
Audio Codec support	G.711, G.722, G.729	
Security	Transport layer security (TLS), Secure real-time protocol (SRTP)	
Other features from day 1	Phone should support power over LAN as per IEEE 802.3af (PoE)	
	The phone should support Static IP addressing and Dynamic IP addressing (DHCP).	
	The offered phone should be able to seamlessly register, integrate and operate with the proposed call control system.	

Contact Center		
	Feature Description	**Compliance (Yes / No)**
ACD (Automatic Call distribution)	ACD solution should be highly available with hot standby and seamless failover in case of Main server failure. There should not be any downtime of CC in case of single server failure	
	The ACD hardware and software should be from a single OEM and should support VMWare Virtualization for Hardware Optimization.	
	The ACD should support active and standby server mode. In case of Main server in the Data center fail the standby server in DR should take over seamlessly. ACD solution should support the placing of Main and Standbyserver in DC and DR respectively.	
	The solution should support 50 Agent in one location to start with expandable up to 400 across 4 locations	
	The system should support skill-based routing and it should be possible to put all the 400 agents into a single skill group.	
	ACD should support routing of incoming calls based upon caller input to menus, real-time queue statistics, time of day, day of week, ANI, dialled number etc.	
	ACD should support routing based on longest available agent, Circular agent selection algorithms. Up to 10 levels of customer contacts should be prioritized based upon call or customer data, and calls may be moved within or among queues under workflow control using priority information.	

	ACD should support the playing of customizable queuing announcements based upon the skill group that the call is being queued to, including announcements related to the position in queue and expected delay.	
	ACD should support Data-drivenrouting, ACD should have the ability to use data obtained from backend database to make routing decisions. The database can have parameters like a list of holidays, hours of operations, a short list of hot customer accounts, and so on.	
	Agents should be able to login,logout, make ready or not ready from the desktop application, Agent desktop should display ANI or DNIS or any customer related data.	
	Agent desktop should dynamically pass the call data like ANI/DNI any browser based or Microsoftcompatible application.	
	Agents should be able to chat with other Agents or supervisor from the Agent desktop software	
	Agent desktop should support integrated desktop for browser based application.	
	Dynamic Re-skilling by Administrator or Supervisor to modify theskills and competencies and agent skills and competencies should be applied immediately	
	Supervisor should be able to see the real-time status of agents, supervisors should be able to make agent ready or logout from the supervisor desktop	
	Supervisors should be able to barge in a agents call and also if required take a call from an agent and attend it.	
	Should support Queuing of calls and playing different prompts depending on the type of call and time in the queue.	
	Supervisor to create and configure preview outbound campaigns. The supervisor should be able to specify a daily time range during which outbound calls are made and a set of Queue whose agents make the outbound calls. The supervisorshould also be able to specify and import a list of customer contacts to be called.	
	ACD should support Web-based administration for addition new agents, assigning skills etc.	
Reporting	Agents should be able to accept, reject, or skip outbound call requests. Agents should also be able to reclassify calls to any one of many call results, such as Busy, Fax, and Answering Machine.	
	Users of the Historical Reports should be able to perform the following functions View, print, and save reports. Sort and filter reports Send scheduled reports to a file or to a printer. Export reports in a variety of formats, including PDF, RTF, XML, and CSV.	

	Should be able to prepare custom reports using a variety of generally available 3rd party applications that are designed to create reports from databases. Third party applications to have access to the reporting database. Database schema of reporting to be given	
	Reporting platform to support custom reports using a combination of the Crystal Reports Developer's Toolkit and SQL stored procedures.	
	System to provide report of IVR Application Performance Analysis, Call by Call details for all the calls, Traffic analysis reports etc.	
	Reporting platform to support Agent level reports, Agent login logout report, report on agent state changes,	
	Queue reports, Abandon call reports all the reports should be summary, tabular and detailed report format to be available for the agents.	
	Outbound Agent summary or Campaign summary reports should be available.	
E-Mail	Email routing support integration with Microsoft Exchange 2003 or Microsoft Exchange 2007 or 2010	
	The administrator should be able to assign one or more email addresses to a single Queue.	
	Should support dedicated email agent and Blended voice and email agents	
	Agents should be able to automatically resume of e-mail processing on voice disconnect	
	Agent should be able to save email draft response and resume at a later time	
	Agent should be able to re-queue email.	
	Supervisor should be able to access real-time reporting for Agent E-Mail mail volume by Queue	
	Supervisor should be able to report Agent E-Mail Inbox Traffic Analysis, Agent email activity Queue wise	
IVR	IVR should Play welcome messages to callers Prompts to press and collect DTMF digits	
	IVR should be able to integrate with backend database forself-service.	
	GUI based tool to be provided for designing the IVR and ACD call flow.	
	IVR should support VoiceXML for ASR, TTS, and DTMF call flows	
	IVR should be able to Read data from HTTP and XML Pages	
	IVR ports should be twice number of agents	
General	Contact Center OEM should be in Leaders' Quadrant of latest Gartner Magic Quadrant Report for Contact Center Infrastructure.	

5.9 Integrated City Operation Center

5.9.1 Data Normalization Software

Data Normalization Software should have min below technical specifications;

1. Data plan for:
   a. **Live data** and **visual feed** from diverse sensors connected to the platform
   b. **Normalized APIs:** for listed domain (Parking, Outdoor Lighting, Traffic, Environment, Urban mobility etc.) to monitor, control sensor and/or actuators functionality
       i. For example, Lighting APIs: Vendor-agnostic APIs to control Lighting functionality
   c. **Cross collaboration APIs:** Enabling contextual information and correlation across domains and verticals (Multiple vendor and Multi-sensor in future)

2. Platform functionality:
   a. **API management and gateway:** Provides secure API lifecycle, monitoring mechanism for available APIs
   b. **User and subscription management:** Provides different tier of user categorization, authentication, authorization, and services based on the subscriptions
   c. **Application management:** Provides role-based access view to applications
   d. **Enabling analytics:** Time-shifted and real-time data available for big data and analytics
   e. **Domain and/or Insight reports**
       i. Parking occupancy, energy reports, AQI report (environmental pollution)

Following are the integration capabilities required from this platform

1. Integrate devices using their APIs into this platform. For example, if the City wants to deploy Smart Parking solution, this platform should have the ability and provision to write adapters which interface with the parking sensors or management software of the parking sensors to collect parking events, data and alerts and notifications from the devices and their software managers.
2. The platform should be able to integrate any type of parking sensor irrespective of the technology used. For example, some parking sensors might use RF technology like LoRa or ZigBee to communicate the data and events, some might use GPRS or some might use Wi-Fi. Some parking sensors might use infra-red based detection; some might use magnetic field based detection or a combination of the both whereas some might use a video camera to detect parking occupancy. Irrespective of the technology, the platform should be able to integrate with these devices and their software managers and provide the data from such devices in a normalized and standard-based data models.

3. The same logic and requirement applies to various other urban services devices like LED control nodes, water meters, energy meters, environmental sensors, waste bin sensors, device embedded in connected vehicles etc.

4. Enables the City and its partners to define a standard data model for each of the urban services domains (i.e. Parking, lighting, kiosks etc.…)

5. Enables City and/or its partners to write software adaptors based on the API(s) provided by device vendors and have the ability to control, monitor and collect the data from these street devices

6. Normalizes the data coming from different devices of same type (i.e. Different lighting devices etc.) and provide secure access to that data using data API(s) to application developers

7. Provides urban services API(s) to develop operation applications for each of the Urban Services domains. For example, the lighting operator of the City should be able to develop a City Lighting management application based on the API(s) provided by the platform. This lighting application should also have the ability to access data from other domains like environment based on the access control configured in the system.

8. Create different users and roles for users.

9. The platform should allow different roles to be created and assign those roles to different access control policies.

10. Since this platform is being used for managing Cities, the platform should also allow association of users and locations. For example, the platform should allow the creation of locations in the system which correspond to various physical locations in the city and allow the admin to associate different users to different locations with the intent that each user can control only services for a location for which has been given access.

11. The platform should have the capability to provide access to real-time data and historical data from various connected devices for reporting and analytics.

12. The access to data should be highly secure and efficient.

13. Access to the platform API(s) should be secured using API keys.

14. Software should support security standards: OAuth 2.0, HTTPS over SSL, and key management help protect the data across all domains.

15. Proposed Data Normalization Software Platform and related services should be preferred over cloud and should have below functionalities:

Location engine	● **Map services and geospatial coordinates:** provides the geographical coordinates of specific facilities, roads, and city infrastructure assets, as well as unmapped facilities ● **Geospatial calculation:** calculates distance between two, or more, locations on the map ● **Location-based tracking:** locates and traces devices on the map

Device engine	● **Aggregation and abstraction of sensors:** provides aggregation of sensors from diverse sensor cloud ● **Normalization of sensor data:** organizes sensor data and assigns attributes based on relations; raw data removed and passed to data engine
Data and Analytics engine	● **Data archive and logging:** stores data feeds from the device engine and external data sources ● **Analytics:** provides time-shifted or offline analytics on the archived data ● **Reporting:** delivers reports based on events triggered by device engine data and external notifications
Service management	● **Data brokerage, ID Management:** Performs service management
Authentication, Authorization	● Performs Authentication, Authorization
Subscription engine	● **User management:** provides unique user roles, authentication, and access based on user subscriptions ● **Application management:** provides user-based application access and viewing

5.9.2 City Operation Center Software

The integrated operations dashboard platform for City Operation Center Software must have the following capabilities:

S. No.	Item Specifications	Compliance (Yes/No)
1.	Integrates with existing cameras and new cameras. Should support multiple video sources from multiple locations. Platform should have no limitation in displaying the number of CCTV video sources	
2.	Integrate and assess inputs from different sources such as CCTV, Video Analytics, and sensors further to assist with actionable intelligence.	
3.	Should use dynamic channel coverage specifically for video stream function for efficient bandwidth usage for multiple Remote Control center	
4.	Capability to display more than 100 cameras at full frame rate, remote monitoring of cameras at minimum network bandwidth.	
5.	Should have demonstrated in previous deployments to successfully scale up to 3000 cameras in total throughout the city	
6.	Display module should have the capability to control multi-screened display wall in sync with operator console	

	Visual integration of maps with video and data displays up to 400 channels simultaneously	
7.	Capable of using 1/4th of bandwidth specified in HD camera during video transmission without loss of quality	
8.	Should support Fixed type and PTZ camera. Control PTZ function from the screen to control the camera	
9.	Supervisors remotely can access the system and monitor the alerts received, action taken status, response etc.	
10.	The remote viewing stations will be viewing with multiple configurations of tiles (2X2, 4X4, 6X6 and even 10X10).	
	But with changing tile configuration each camera will be viewed with much lower resolution. The system should dynamically reduce the bit rate and bandwidth for each stream based on the viewing resolution at the remote location.	
	If the remote station is viewing with 352 x 240 (CIF), the stream to remote viewing location should not be using HD bandwidth, but dynamically should change to lower bandwidth.	
	If the remote viewing station is viewing this camera in full-screen 1080P, then it should dynamically increase the bandwidth to provide HD experience.	
11.	Should be able to integrate well with existing Video management software	
	Should be able to access the CCTV sources both from CCTV Camera and from Video Management software	
12.	Map, camera videos, PC screen, and other data sources can be integrated into one display for convenient monitoring and navigation	
13.	Should be able to display Alarms from different sources such as Video alarm from cameras, video alarms from VMS, if required	
14.	Should support integration of Video analytics from third party software, if required	
15.	Should support integration of Video analytics from edge and server-based video analytics	
16.	Provide configurable intelligent operator console based on the jurisdiction, critical area or sensors to monitor as per situation demands for focused surveillance.	
17.	Should be able to integrate with 3rd party applications alerts, like Video Loss Alarm, Loitering, Vehicle counting etc.	
18.	Application should zoom to the camera location on the map automatically when there is a high priority alert	
19.	Should provide intelligent and actionable emergency response for all alarms	

20.	Alarm Management system should be in place to customize each type of alarm display	
21.	Generate Customized reports based on the area, sensor type or periodic or any other customer reports as per choice of the administrators	
22.	Standard Operation Procedure (Emergency Response) should be made available for each alarm	
23.	SOP should help the operator to take action for the incident and notify through SMS or E-mail to the concerned person for taking immediate action	
24.	Should Integrate with Communication system such as SMS gateway, Call Manager/Exchange server, email server and other systems for configuring as SOP	
25.	Should be able to integrate with systems that can support Radio channels for communication such as radio dispatch operations and system that supports mobile phones, landline phones, IP phones, and PCs, to support communications across users, devices, and locations.	
26.	Should be able to integrate with any conferencing system so as to use it during emergency and non-emergency period	
27.	Should be possible for the Supervisor to have an overview of the Event based performance through Dashboards	
28.	Should be possible for the supervisor to generate event wise action taken report	
29.	Should support multiple Local operation center along with Viewer stations that require monitoring function	
30.	Should support integration with Smart Lighting systems which are policy based two-way communication	
31.	Should support integration with Smart Parking systems	
32.	Should support integration with Environment sensors	
33.	System should allow use of, GIS tool which allows easy map editing for wide area monitoring (Google map, Bing map, ESRI Arc GIS map)	
34.	Software should work on customize display through Display Servers, which will work for Unique Convergence Monitoring Environment and below functionalities; a. Able to grasp various monitoring source at a glance b. Situation monitor, crisis response, device control from a single operation terminal. c. Multi-display walls in synchronization with Centre operator d. Visual integration of maps with video and data e. Display of E-map, fixed grid, sequential grid, and any other grid as desired.	

	f. Zoom-in, zoom-out, and panning of screen layout with camera streams on multi-display	
35.	Software Security should prevent any data loss from physical removal by providing encrypted handshake for physical memory. If removed, the data at rest should become unusable. The system should direct access only via SSL-VPN. Communication should use standard 802.11 a/b/g/n wireless communication protocols, featuring highly secure, certification-based authentication for every device using TLS 128-bit encryption.	

5.9.3 Data Center and Command Center

5.9.3.1 Converged Server cum Storage Solution for Virtualized Application (Except Video Surveillance)

This Converged Solution will be used to install NMS, Video Analytics, Network AAA Solution, Parking Management Solution, Transport Management Solution & other Virtualized Application's		
Item	**Feature description**	**Complian ce (Yes/No)**
Management	Should support Management of both rack & blade form factor of Hyper-converged nodes from the same console. Should Supports a stateless environment where server identity is created by the administrator who defines the server BIOS version, MAC ID, NIC firmware version, WWPN, FC-HBA firmware version, Adapter QoS, Management module firmware version, UUIDs, Server Boot Policies, KVM IP etc.	
	It should also have the capability to enforce policies in the system BIOS settings and configuration, so once administrators define a common policy for a server BIOS, all subsequent deployments use this policy.	
	Should have the feature where multiple server identities can be deployed from a master server identity or a master template	
	Should have feature where a server identity that is previously linked to a master identify can be delinked from master identity	
	Must support the ability to rollback firmware from current active versions to the previous version for the Server BIOS, Adapter firmware and bootcodeversions, individual server management chips from the same console for multiple Rack Servers and Blade Servers	
	Firmware upgrade/rollback should be possible for all the components in the infrastructure including the server, chassis management modules, Ethernet switch modules, SAN switch modules, Other IO modules from the same console that is used to manage the individual blades	
	Should have Role Based Access Control so that the resources can be managed by respective resource administrator. Parent administrator still have control over	

	resources under their respective child resources	
	Should be provided with Centralized and embedded management with seamless high availability built into the infrastructure. If the management system runs as a virtual machine, then all hardware and software licenses to enable this should be included	
	Should have Agentless internal hard disk drive monitoring and tracking feature	
	Should have support for Movement of server identity from one slot to another in the event of server failure. The movement of the identity should support both form factors of servers,i.e. blade to blade and rack to rack	
	Automated call home capability in the event of critical server failure or thresholds that are crossed which could impact server performance or customer SLA.	
	Integration with the Microsoft Active Directory groups	
	Should Support multiple levels of authentication methods including TACACs+, LDAP and RADIUS	
	Should have Built-in scheduler to set up schedules for specific actions which are disruptive.Example, set the scheduler to flash a new firmware during the weekend	
Fabric Switch Support	Should support up to a maximum of 50 primary VLANs per pair of switches	
	Should support up to a maximum of 1000 secondary VLANs per pair of switches	
	Should support up to 2000 active VLANs and VSANs per pair of switches	
	Supports up to 12 uplink port channels per switch module	
	Supports up to 16 member interfaces per port channel	
	Supports a maximum of 4 active SPAN session per switch	
	Supports up to a maximum of 31 uplinks per switch	
HCI Nodes	Each Node should be provided with 24 TB RAW Storage and in addition to raw space, each node should have 1 x 120-GB 2.5- inch SATA SSD boot drive, 1 x 1.6-TB 2.5-inch SATA SSD caching drive, 320 GB DDR4 Memory and 2 x 10 Cores E5-26xx v4 Processors	
	The solution should have support for both form factors - Rack Servers and Blade Servers	
	should be provided with VMware VSphere 6.x	
	Should have the functionality where the cluster can be scaled up or down in a non-disruptive manner, without having to power down any nodes	
	The cluster can be scaled without adding any additional disk capacity,i.e. more server are added to increase the amount of CPU & memory available without increasing the disk capacities	
	Should be provided with data management features for complete lifecycle management and enhanced data protection in distributed storage environments—including replication, deduplication, compression, thin provisioning, rapid,	

	spaceefficient clones, and snapshots	
	Inline compression to be provided	
	Inline deduplication to be provided	
	Should have built in High Availability to support drive failures or even complete node failures in the cluster	

5.9.3.2 Next Gen- Firewall with IPS& URL Filtering (With dedicated Management Platform)

Next Generation Firewall- Technical Specifications		
1	Industry Certifications and Evaluations	Compliance (Yes/No)
	The Firewall solution offered must be rated as 'leaders' or 'Challengers' in the latest Magic Quadrant for Firewall published by Gartner.	
2	Hardware Architecture	
	The appliance-based security platform should be capable of providing firewall, application visibility, and IPS functionality in a single appliance	
	The appliance should support at least 2 * 10G ports scalable upto 8x10G, the firewall should be modular in nature so that it can be scalable 2 * 40G ports in future	
	The appliance hardware should be a multicore CPU architecture with a hardened 64-bit operating system to support higher memory	
	Proposed Firewall should not be proprietary ASIC-based in nature & should be open architecture based on multi-core CPU's to protect & scale against dynamic latest security threats.	
3	Performance & Scalability	
	Should support at least 10 Gbps of production performance / multiprotocol combined firewall & IPS throughput	
	Firewall should support at least 8,000,000 concurrent sessions	
	Firewall should support at least 60,000 connections per second	
	Firewall should support at least 1000 VLANs	
4	Firewall Features	
	Firewall should provide application detection for DNS, FTP, HTTP, SMTP,ESMTP, LDAP, MGCP, RTSP, SIP, SCCP, SQLNET, TFTP, H.323, SNMP	
	Firewall should support creating accessrules with IPv4 & IPv6 objects simultaneously	
	Firewall should support operating in routed & transparent mode	
	Should support Static, RIP, OSPF, OSPFv3 and BGP	
	Firewall should support manual NAT and Auto-NAT, static nat, dynamic nat, dynamicpat	
	Firewall should support Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4) & Nat46 (IPv4-to-IPv6) functionality	
	Firewall should support Multicast protocols like IGMP, PIM, etc.	
	Should support security policies based on security group names in source or destination fields or both	
	Should support capability to limit bandwidth on basis of	

	apps/groups, Networks / Geo, Ports, etc.	
5	High-Availability Features	
	Firewall should support Active/Standby failover	
	Firewall should support ether channel or equivalent functionality for the failover control & date interfaces for providing additional level of redundancy	
	Firewall should support redundant interfaces to provide interface level redundancy before device failover	
	Firewall should support 802.3ad Ether channel or equivalent functionality to increase the bandwidth for a segment.	
	Firewall should have integrated redundant power supply	
	Firewall should have redundant hot-swappable FANs	
6	Next Generation IPS	
	Should have the capability of passively gathering information about virtual machine traffic, network hosts and their activities, such as operating system, services, open ports, client applications, and vulnerabilities, to assist with multiple activities, such as intrusion event data correlation, elimination of false positives, and policy compliance.	
	Should be capable of dynamically tuning IDS/IPS sensors (e.g., selecting rules, configuring policies, updating policies, etc.) with minimal human intervention.	
	Should be capable of automatically providing the appropriate inspections and protections for traffic sent over non-standard communications ports.	
	Should be able to link Active Directory and/or LDAP usernames to IP addresses related to suspected security events.	
	Should be capable of detecting and blocking IPv6 attacks.	
	Should support the capability to quarantine end point	
	The solution should support full-featured NBA capability to detect threats emerging from inside the network. This includes the ability to establish "normal" traffic baselines through flow analysis techniques (e.g., NetFlow) and the ability to detect deviations from normal baselines.	
	The solution must provide IP reputation feed that comprised of several regularly updated collections of poor reputation of IP addresses determined by the proposed security vendor	
	The solution must support IP reputation intelligence feeds from third party and custom lists of IP addresses including a global blacklist.	
	Should must support URL and DNS threat feeds to protect against threats	
	Should support Reputation- and category-based URL filtering offering comprehensive alerting and control over suspect web traffic and enforces policies on more than 280 million of URLs in more than 80 categories.	
	The solution must be capable of passively gathering details unique to mobile devices traffic to identify a wide variety of mobile operating systems, mobile applications and associated mobile device hardware.	
	Should support more than 4000 application layer and risk-based controls that can invoke tailored intrusion prevention system (IPS)	

	threat detection policies to optimize security effectiveness.	
	Must be capable of providing network-based detection of malware by checking the disposition of known files in the cloud using the SHA-256 file-hash as they transit the network and capability to do dynamic analysis on- premise (if required in future) on purpose builtappliance	
	The Appliance OEM must have its own threat intelligence analysis center and should use the global footprint of security deployments for more comprehensive network protection.	
	The detection engine should support capability of detecting and preventing a wide variety of threats (e.g., malware, network probes/reconnaissance, VoIP attacks, buffer overflows, P2P attacks, etc.).	
	Should be able to identify attacks based on Geolocation and define policy to block on the basis of Geo-location	
	The detection engine should support the capability of detecting variants of known threats, as well as new threats	
	The detection engine must incorporate multiple approaches for detecting threats, including at a minimum exploit-based signatures, vulnerability-based rules, protocol anomaly detection, and behavioral anomaly detection techniques. Identify and explain each type of detection mechanism supported.	
	Should support Open based application ID for access to community resources and ability to easily customize security to address new and specific threats and applications quickly	
7	The integrated solution should also provide URL filtering functionality for upto 200 million URL's, upto 60 different categories for URL	
8	Management	
	The management platform must be accessible via a web-based interface and ideally with no need for additional client software	
	The management platform must provide a highly customizable dashboard.	
	The management platform must be capable of integrating third party vulnerability information into threat policy adjustment routines and automated tuning workflows	
	The management platform must be capable of role-based administration, enabling different sets of views and configuration capabilities for different administrators subsequent to their authentication.	
	Should support REST API for monitoring and config programmability	
	The management platform must provide multiple report output types or formats, such as PDF, HTML, and CSV.	
	The management platform must support multiple mechanisms for issuing alerts (e.g., SNMP, e-mail, SYSLOG).	
	The management platform must provide robust reporting capabilities, including a selection of pre-defined reports and the ability for complete customization and generation of new reports.	
	The management platform must risk reports like advanced malware, attacks and network	

	The management platform must include an integration mechanism, preferably in the form of open APIs and/or standard interfaces, to enable events and log data to be shared with external network and security management applications, such as Security Information and Event Managers (SIEMs), and log management tools.	

5.9.3.3 Anti-APT for Command & Control Room

S no	Feature	Compliance (Yes/No)
1	Anti-APT solution should be appliance based and should offer a minimum throughput of 2 Gbps	
2	Appliance should support at least 8*1Gbps ports	
3	Appliance shall provide a separate management port and should also provide a web-based GUI management	
4	Appliance should provide at least 3 Million concurrent sessions or 10000 concurrent users	
5	Appliance should be capable of working in Inline Blocking mode without depending on other network components like a separate FW, IPS or Web Security Appliance	
6	Appliance should have fail-open capabilities for all ports	
7	Appliance should have dual hot-swappable power supplies	
8	Proposed solution should include an on-prem sandbox and no file shall be sent outside of our premises	
9	Solution should be capable of blocking callbacks to CnC Servers	
10	Solution should be capable of blocking threats based on both signatures and behavior	
11	Proposed solution's detection rules should be based on an extensible, open language that enables users to create their own rules, as well as to customize any vendor-provided rules.	
12	Proposed solution should be capable of blocking threats on the following protocols: HTTP, HTTPS	
13	The solution should be capable of executing MS Office Documents, Portable Documents, Archive Files, Multimedia Files and executable binaries in a virtual sandbox environment	
14	The solution should be capable of exempting specific hosts from specific compliance rules and suppressing corresponding compliance events and alerts.	
15	The solution should be capable of gathering Active Directory user identity information, mapping IP addresses to username and passively gathering information about network devices including but not limited to:	
	● Network protocols used, e.g. IPv6, IPv4	
	● Network services provided, e.g. HTTPS, SSH	
	● Open ports, e.g. TCP:80	
	● Client applications installed and type, e.g. Chrome - web browser	
	● Web applications access, e.g. Facebook, Gmail	
	● Risk and relevance ratings should be available for all applications	

	● Potential vulnerabilities	
	● Current User	
	● Device type, e.g. Bridge, Mobile device	
	● Files transferred by this device/user	
16	The solution should be capable of whitelisting trusted applications from being inspected to avoid business applications from being affected & in turn productivity	
17	The solution should be capable of blocking traffic based on geo locations to reduce the attack landscape and to protect communication to unwanted destinations based on geography	
18	The sandbox should be appliance based with the ability to run multiple versions of 32 and 64-bit client and Server Windows within the same environment	
19	All the devices shall be managed centrally and should be capable of	
	• Centralized, life cycle management for all sensors	
	• Aggregating all events and centralized, real-time monitoring and forensic analysis of detected events	
	• Must provide a highly customizable dashboard	
20	The sandbox should be appliance based with the ability to run multiple versions of Windows within the same environment	
21	The Sandbox should be a proprietary custom-built malware analysis solution and not open source or generic sandbox	
22	The Sandbox should be a proprietary custom-built malware analysis solution and not open source or generic sandbox and should provide:	
	- analysis reports	
	- threat score of the sample	
	- ability to queue samples,	
	- impact analysis	
	- Global Threat Intelligence	
23	Sandbox shall be able to detect memory residing malware	
24	The proposed solution shall have the capability to continuously track a file's disposition based on global intelligence and do a retrospective block and alert if the file has exhibited malicious traits globally even if the file hasn't started behaving maliciously locally	
25	The solution should include protection against desktop and server & should support minimum Windows 7 desktop, Windows server 2003 & 2008. Bidder should provide license for 1000 window based PC/Servers.	

5.9.3.4 Command & Control Core Switch

Data Centre Core switches		
S. No.	Item Specifications	Compliance (Yes/No)
1	Switch should be chassis based switch with passive backplane. The chassis should be ready from day 1 to support 40gig and 100Gig interface. Switch shall also support SDN functionalities & be ready with support for protocols like VXLAN	

2	Should support the separation of data and control plane, to be controlled by SDN Controller, utilizing ACI / openflow or equivalent protocol from day one.	
3	Switch must support spine-leaf topology / MC-LAG (Multi-chassis Link aggregation) or equivalent virtualization technology to create large layer2 domain to optimize east - west traffic within datacenter.	
4	Shall have minimum 8 payload slots	
5	Shall have distributed, Non-blocking switching architecture, each module should be provisioned with adequate hardware/software to support the same.	
	All the interfaces ports should be wire speed and non-blocking.	
6	Shall have CPU and power supply redundancy	
7	**Performance:**	
	Dual Redundant Switch Fabric/CPU shall offer minimum 2.4 Tbps of throughput per slot	
8	In the event of failure of one switching/routing engine/fabric, forwarding shall not stop and failover from one engine to other shall be stateful. The performance of the switch should not degrade in case of failure of one CPU card.	
9	Switch must support Layer 2 and Layer 3 In-Service Software Upgrade and Downgrade mechanism so that minimal traffic disruption happens during upgrade or downgrade process.	
	Minimum 4.2 Bpps performance or higher shall be supported for both IPv4 and IPv6	
10	Should have distributed Switching Architecture	
	Shall support Hot-swappable power supplies and switching modules	
11	**Layer 1 Features**	
12	Support for 1000 BASE-T, 1000 BASE-SX, LX, LH, ZX GBIC/SFP 10G Base-T, 10-Gig SR/LR/ZR, 40G,100G	
13	Chassis shall support	
	Minimum 768 1 & 10 Gigabit non-blocking ports or	
	Minimum 144 10G Base-T non-blocking ports or	
	Minimum 144 Nos. of 40-Gig non-blocking ports or	
	Minimum 30 Nos. of 100-Gig non-blocking ports	
15	**Layer 2 Features**	
16	Shall have Layer 2 switch ports and VLAN trunks	
17	Shall have IEEE 802.3 ad Link aggregation and port Trunking across line cards	
18	Shall support a mechanism to detect link issues using IEEE 802.3ah	
19	Shall support display and clear MAC address information in MAC Address Table	
20	Shall have IEEE compliance for 802.1Q VLAN, 802.1p, 802.1d STP, 802.3ad, 802.1w RSTP, 802.1s MSTP, 802.3ad LACP, IEEE 802.1ab Link Layer Discovery Protocol.	
21	Shall have 70,000 system-wide MAC addresses	
22	Shall have minimum 4,000 active VLAN support	
23	**Layer 3 Features**	

24	Should have Ipv4 & IPv6 Static routes, OSPFv3, PIM Sparse / Dense mode (SM /DM), Policy-based routing (PBR), Virtual routing and forwarding (VRF), VXLAN, BGP and Netflow/Jflow/Sflow from day one.	
25	Switch must have virtualization features like VXLAN Gateway/Bridging and VXLAN routing functionality to support VMware hypervisor connectivity and also to normalize it for VMware VM to bare metal server / VMware VM to other hypervisor VM communication.	
26	Shall have IGMP v1, v2, v3	
27	Shall support minimum 120K routes.	
28	Shall support minimum 8K multicast routes.	
29	Shall support EVPN, VXLAN Routing	
30	**QoS Features**	
31	Shall have Per-port QoS configuration	
32	Support for IEEE 802.1p QoS policies.	
33	Support for Diff-Serv QoS on all ports	
34	Shall support minimum four queues per port in hardware	
35	Shall have priority queuing	
36	Shall have IP differentiated service code point (DSCP) and IP precedence	
37	Shall support Congestion Avoidance feature like WRED Availability	
38	Shall be provided with redundant Switching Fabric	
39	N+1/1+1 Redundant Power Supply from day one	
40	Hot Swap ability on all modules and Power Supply	
41	Hot Swappable Fan tray	
42	**Security:**	
43	Shall have Filters/Access-List on all ports	
44	Shall support Port Mirroring	
45	Shall be able to shut down Spanning Tree Protocol enabled interfaces when BPDUs are received to avoid accidental topology loops	
46	Shall be able to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes	
47	Shall have TACACS+/RADIUS enabled.	
48	Shall have SSHv1/ SSHv2, SNMPv1, SNMPv2, SNMPv3, SCP/SFTP/FTP support	
49	Should support Port Security, Dynamic ARP Inspection, BPDU and root Guard security features.	
51	The proposed router should be EAL2/ NDPP certified by common Criteria body at the time of delivery. The vendor should be listed in Gartner Magic Leaders Quadrant for wired or wireless segment.	
52	**Minimum Configuration deliverable**	
53	Core Switch Shall have minimum 48 no's of 1G base T ports, 48 no's of 10G SFP+ ports loaded with 16x1G ports loaded with single mode transceiver, 16x1G ports loaded with multi-mode mode transceiver,4 no's of 10G single mode transceiver & 12	

	no's of 10G multimode transceiver plus additional 4 no's of 40G QSFP Ports.	
54	The proposed switch should be EAL2/ NDPP certified by common Criteria body at the time of delivery. The OEM should be listed in Gartner Magic Leaders/Challengers Quadrant for wired& wireless segment or Gartner Magic Leaders/Challengers Quadrant for Data Centre Networking segment for 2016..	

5.9.3.5 Command & Control Internet Router

Generic Specifications	Compliance (Yes/No)
Router should be chassis based device with minimum 10 Gbps of throughput scalable upto 20 Gbps. It should have minimum 8 GB of RAM/ DRAM.	
Router supports management protocol: SNMP v1/v2/v3, CLI (Telnet/Console), TFTP update and configured file management	
Router must have inbuilt state full firewall,zone-based firewall and 3 DES capability technologies to support the access controller strategy based source and destination IP protocol port and time parameters	
Router should have tunneling protocols like IPsec VPN, GET VPN, Multi Point VPN and encryption mechanisms like DES, 3DES, AES (128 and 256Bit).It should support minimum 300 IPsec tunnels from day one.	
Router has support for the following routing /WAN protocols	
PPP/MLPPP, HDLC	
Router should be modular chassis based device and should accommodate a combination of high-density Sync / Async Serial, 10G, Gigabit Ethernet, Fast Ethernet	
Router should support protocols like RIP, OSPF, BGP, VRRP/HSRP, 802.1q, GRE, ACL's and NAT MPLS, traffic engineering, EoMPLS, L2 VPN from day one.	
Shall support the RIPng & BGP for IPv6, OSPFv3, MPLS, BGP from day one.	
Router should have 18000 route support from day one	
The router supports state full packet inspection supporting H.323, SIP and other application level gateway support	
The state full firewall supports IPsec pass through	
The router/ System shall support of classifying applications based on the category they belong to (For e.g. file sharing, voice, video-conferencing, business-tools etc.) from day one. System shall support of support customized categories for their applications, help identify distinctly the voice and video streams in the network from day one.	
System shall support to provide the ability to filter and gather application information in a flexible manner from day one	
Router should support QoS Classification and marking policy based routing, IP precedence, DSCP	
QoS -congestion management WRED/RED, Priority queuing, class-based weighted for fair queuing	
IP Access list to limit Telnet SNMP access to router	
Multiple privilege level authentication for console and telnet access	
Time-based ACL for controlled forwarding based on time of day for offices	

Should have extensive support for SLA monitoring for metrics like delay latency, jitter, packet loss and MoS		
Provides QoS features like traffic prioritization, differentiated services, and committed, and committed access rate, QoS Support, RSVP/WFQ/MRED. Router should be able to take pre-configured action on these events like changing routes, changing routing metric		
Router supports for QoS Features for defining the QoS policies. Support for low latency queuing, Layer 2 and Layer 3 CoS/DSCP		
Router should have multicast routing protocols support: IGMPv1, v2 (RFC2236) PIM-SM (RFC2362) and PIM-DM/ Multicast VLAN Registration		
The following interface required from Day-1: 2x 10G SFP+ based ports loaded with single mode transceiver, 3*1GE & 3*1G SFP-based transceiver.		
The router should be IPv6 ready	-	
The OEM should be listed in Gartner Magic Leaders/Challengers Quadrant for wired& wireless segment or Gartner Magic Leaders/Challengers Quadrant for Data Centre Networking segment for 2016.		

5.9.3.6 Command & Control Room L2 PoE Switch

S. No.	Minimum Required Specifications	Compliance (Yes/No)
1	19" Rack Mountable stackable switch with min 24 Nos. 10/100/1000 copper input POE (15.4W) ports and additional support of 4x1G SFP, support for external/internal redundant power supply.	
2	Switch should support for minimum 96 Gbps of forwarding throughput & minimum 70 mpps forwarding rate	
3	The switch should support dedicated stacking port separate from uplink ports with 80 Gbps of stacking bandwidth to put minimum 8 switches into a single stack group.	
4	Switch should have static, default IP routing enabled from day one.	
5	Switch shall have IEEE 802.3ad Link Aggregation Control Protocol (LACP) with up to 8 links (ports) per trunk.	
6	It shall have IEEE 802.1s Multiple Spanning Tree Protocol and provide legacy support for IEEE 802.1d STP and IEEE 802.1w RSTP or equivalent technology and static routes.	
7	Switch should have feature to protect access ports using port security, TACACS/TACACS+, Radius, storm control, Access Control List both port, VLAN based.	
8	Switch should have queuing as per IEEE 802.1P standard on all ports with mechanism for traffic shaping and rate limiting features for specified Host, network, Applications etc. Switch should also support cross-stack QoS.	
9	Should have Power supply 230 Volt 50Hz input	
10	The switch should support IPv6 Guard, IPv6 RA-Guard, IPv6 DHCP-Guard, Source-Guard features	
11	Switch should support automated image installation, configuration & automatic configuration of per port QoS to reduce switch provisioning time & effort.	

12	Must have SNMP v1, v2, v3 from day one	
13	Should have CLI and GUI based management console port.	
14	The switch should support IEEE 802.3az from day-1	
15	The switch should be IPv6 ready	
16	The proposed switch should be EAL2/ NDPP certified by common Criteria body at the time of delivery. The OEM should be listed in Gartner Magic Leaders/Challengers Quadrant for wired& wireless segment or Gartner Magic Leaders/Challengers Quadrant for Data Centre Networking segment for 2016.	

5.9.3.7 Command & Control Room WAN Router

S. No.	Parameter	Minimum Required Specifications	Compliance (yes/No)
1	Architecture	Router should have redundant controller cards and should support stateful switchover, non-stop forwarding, Non-stop routing and Graceful restart.	
		Router should be CE2.0/MEF14.0 certified	
		Router shall support MEF for Ethernet based services like PW, VPLS or ATOM.	
		Router shall support sync any configurations from previous modules to new modules with hot-swap event occurred	
		The router should have redundant control & data plane.	
		The Chassis should have minimum two free slots for future expansion.	
		The router shall support following type of interfaces – 10GE, 1GE interfaces; 10GE WAN PHY and 10G, Ch.STM1.	
		All the Ports and card on Router should be hot swappable and field replacement of port or card should not require to bring down the chassis.	
2	Performance	Router shall support non-blocking capacity of 64 Gbps full duplex	
		Router shall support 60 Mpps forwarding performance for IPv4 & IPv6 performance	
		The router should support 20Gbps per slot throughput.	
		Router shall support 16000 Mac addresses	
		Router shall support 18000 IPv4 routes	
		router shall support 4000 queues and 128 MPLS VPN's	
		Router shall support aggregation of links. Minimum 8 links should be supported as part of single aggregation	
		Router shall support IPSLA or equivalent and Y.1731 for performance monitoring	

3	High Availability	Router should support Redundant Power Supply and should also support Online insertion and removal of same.	
		Fan tray should be hot-swappable and should be a Field Replaceable Unit (FRU). The node can run indefinitely with a single fan failure. Shall Support hot-swappable for all modules. And secure normal operations when hot-swap event occurred	
		Router shall support MPLS-TE with FRR for sub 50 msec protection.	
		Router must support Traffic Engineering for node and link protection.	
4	Protocol Support	Router shall support IPV4 and IPV6,IGMP V2/V3,MLD,IGMP and PIM,6PE and 6VPE mode for IPV6 transport over IPV4,ECMP,LDP,BGP Prefix independent control (EDGE and Core) for IPV4 and IPV6,BGP,ISIS,OSPFv2and V3,RSVP,VRRP and Traffic Engineering, C37.94 for Numerical Relays tele-protection requirements.	
		Router should support high availability for all BFD,BGP ,OSPF and IS-IS and no packet loss during controller switch over.	
		Router should support RFC 3107 of Carrying Label Information in BGP-4	
		The Router should support Point to Point and Point to Multipoint LSP for Unicast and Multicast traffic.	
		Router shall support layer3 and layer2 MPLS VPN.	
5	QoS Features	Router shall support HQOS on all kind of interface in both ingress and egress direction. Similar QOS shall be supported for all type of interface including Bundled interfaces.	
		Shall support Ingress classification, marking and policing on physical interfaces and logical interfaces using source/destination IP subnet, protocol types (IP/TCP/UDP),source/destination ports, IP Precedence, MPLS EXP, DSCP,802.1p	
		Shall support Strict Priority Queuing or Low Latency Queuing to support real-time application like Voice and Video with minimum delay and jitter.	
		Congestion Management: WRED, Priority queuing, Class-based weighted fair queuing	
6	Security & Management	Support Access Control List to filter traffic based on Source & Destination IP Subnet,Source& Destination Port, Protocol Type (IP,UDP, TCP, ICMP etc.) and Port	

		Range etc. Should Support per-user Authentication, Authorization, and Accounting through RADIUS or TACACS and SNMPv1/v2/V3	
7	Operating Environmental Requirements	0ºC to 40ºC operating temperature and 10 to 90%, non-condensing	
8	Interface	The proposed router should support the following from day1: - 2x10G SFP+ ports supplied with 1x10G single mode transceiver, 1x10G multi-mode transceiver, 8x1G SFP ports supplied with 4x1G single mode transceiver, 4x1G multi-mode transceiver & 24 no's of 10/100/1000 Base-T ports.	
9	Certifications/ OEM Criteria	The proposed router should be EAL2/ NDPP certified by common Criteria body at the time of delivery. The router should be IPv6 ready from day-1. The vendor should be listed in Gartner Magic Leaders/ Challenger Quadrant for wired and wireless segment or Gartner Magic Leader/Challenger Quadrant for Data Center Networking as per latest available report as on the date of bid opening	

5.9.4 Control Room Video-wall Solution

5.9.4.1 Video-wall Screen

S.NO.	Specification Item	Detailed Specification Description	Compliance (Yes/No)
1	Configuration	70 inch - Video Wall (along with hardware & software) Solution - 2x4 Display	
2	Cube & Controller	Cube & controller should be from the same manufacturer	
3	Reputed Company	The OEM should be an established multinational in the field of video walls and should have installations around the world	
4	Chip Type	1-chip 0.95" Digital micro mirror device	
5	Resolution	1920x 1080 native DMD chip resolution	
6	Light Source Type	LED light source with separate LED array for each colour (RGB)	
7	Brightness	Minimum 700 lumens	
8	Brightness Uniformity	≥ 90 %	
9	Dynamic Contrast	1400000:1 or more	
10	Control	IP based control to be provided	
11	Remote	IR remote control should also be provided for quick access	
12	Screen to Screen Gap	≤ 1.0 mm	

13	Screen Support	Screen should have an anti-reflective glass backing to prevent bulging	
14	Control BD Input terminals	Input: 2 x Digital DVI	
15		Input: 1 x HDMI	
16		Input: 1 x HD-BaseT	
17		Input: 1 x Display Port	
18		Output: 1 x Digital DVI	
19	Auto colour adjust function	Should provide auto colour adjustment function	
20		Should be sensor based	
21	Maintenance Access	Front	
22	Cube Size	Each cube should have a screen size of 1550 mm wide and 872 mm high (+-2%)	
23	Cube control & Monitoring	Video wall should be equipped with a cube control & monitoring system	
24		Provide video wall status including Source , light source ,temperature, fan and power information	
25		Should provide a virtual remote on the screen to control the video wall	
26		Input sources can be scheduled in " daily", "periodically" or "sequentially" mode per user convenience	
27		System should have a quick monitor area to access critical functions of the video wall	
28		User should be able to add or delete critical functions from quick monitor area	
29		Automatically launch alerts, warnings, error popup windows in case there is an error in the system	
30		User should be able to define the error messages as informational, serious or warning messages	
31		Automatically notify the error to the administrator or user through a pop up window and email	
32		Status log file should be downloadable in CSV format as per user convenience	

5.9.4.2 Video-wall Controller

S. No	Parameter	Indicative Specifications	Compliance (Yes/No)
1	Controller	Controller to control Video wall in a matrix as per requirement along with software's	
2	Chassis	19" Rack mount	
3	Processor options	Single Quad Core Intel® Core™ i7 Quad Core 3.4 GHz processor) or better	
4	OS	Supports 64-bit Operating System Windows 7	
5	RAM Capacity	16 GB or more	
6	HDD	500 GB or more	

7	Networking	Dual-port Gigabit Ethernet	
8	RAID	RAID 1, 5, 10 supports	
9	Power Supply	(1+1) Redundant hot swappable	
10	Cooling	Any Advanced Proven cooling mechanism	
11	Input / Output support	DVI/HDMI/USB/ LAN/ VGA/SATA port	
12	Accessories	DVD +RW, Keyboard and mouse	
13	Voltage	100-240V @ 50Hz	
14	Redundancy support	Power Supply, HDD, LAN port & Controller	
15	Scalability	Display multiple source windows in any size, anywhere on the wall	
16	Control functions	Brightness / contrast / saturation/ Hue/ Filtering/ Crop / rotate	
17	Universal Inputs	Minimum 2	
18	Formats	DVI /RGB/Component	
19	Input Format	NTSC/ PAL/SECAM	
20	Operating Temperature	10°C to 35°C , 80 % humidity	
21	Cable & Connections	Vendor should provide all the necessary cables and connectors	

5.9.4.3 Video Wall Management Software

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

	Software		

5.9.5 Control Room Workstations

5.9.5.1 Workstation for Admin/Helpdesk/Training/VC room – 4 nos

S. No	Parameter	Minimum Specifications	Compliance (Yes/No)
1	Operating System (OS)	Windows 7 Pro, Ultimate or Enterprise, 64-bit	
2	CPU	Intel Core i7, 3.07 Ghz or Higher	
3	Memory	32 GB DDR3	
4	Graphics Card	Nvidia GeForce GT430 PCIe Nvidia GeForce GTX460 PCIe or faster.	
5	Network connection	Gigabit Ethernet (GigE) network connection required	
6	Monitor	Min 19 Inch – 2 LED Monitor	

5.9.5.2 Monitoring Workstation – 10 nos

S. No	Parameter	Minimum Specifications	Compliance (Yes/No)
1	Operating System (OS)	Windows 7/8 Professional 64 Bit or Higher	
2	CPU	Intel Xeon E5-1620v2 3.7 10M 1866 4C CPU or Higher	
3	Memory/ Storage	32 GB DDR3 RAM / 1TB 7200RPM SATA	
4	Mouse/ Keyboard	Bluetooth Optical Mouse and Bluetooth Keyboard	
5	Graphics Card	NVIDIA GTX 750Ti (EmTek GTX750Ti STORMX DUAL 2048M GDDR5)	
6	LED Monitor	20" or Higher	
7	Network connection	Gigabit Ethernet (GigE) network connection required	

Annexure-3: Technical Bid Evaluation Checklist

Part – A: Authorization / Undertaking / Declarations

S. No.	Specific Requirements	Documents Required	Page No. (to be filled by bidder)
1.	The Bidder should deposit Tender Fee, RISL Processing Fee, Bid Security (EMD) along with the Technical bid.	Online receipt generated through Bid Participation portal	
2.	Tender Form	As given in Annexure5 on Bidders letterhead	
3.	Bidder's Authorization Certificate	As given in Annexure 6 on Bidders Letterhead	
4.	Self-Declaration – No Blacklisting	As given in Annexure 7 on Bidders Letterhead	
5.	Declaration by the Bidder regarding Qualification Under Section 7 of the ACT	As given in Annexure 8 on Bidders Letterhead	
6.	Certificate of Conformity / No deviations	As given in Annexure 9 on Bidders Letterhead	
7.	Undertaking On Authenticity of Items	As given in Annexure 10 On Non-Judicial Stamp Paper of Rs. 100/-	
8.	Undertaking for functional requirement of Equipments	As given in Annexure 11 on Bidder's Letter head	
9.	Technical Bid Submission Sheet	As given in Annexure 12 on Bidders Letterhead	
10.	Financial Bid Submission Sheet	As given in Annexure 13 on Bidders Letterhead	

S. No.	Basic requirement	Specific Requirements	Documents Required	Page No. (to be filled by bidder)
1	General Requirement	Bidder should be an established IT System Integrator and should have been engaged in Supply, Installation, Commissioning and Operations & Maintenance Services of ICT projects for a period of at least 3 financial years as on 31.03.2016	Work Orders / Client Certificates confirming year and area of activity should be enclosed.	
2	Bidder Entity	Consortium/Joint Venture is allowed, one of the parties in the consortium/JV partner will be the Prime Bidder/Lead Bidder. Prime Bidder/Lead	Copy of the consortium/JV Agreement. In case consortium/JV, clearly specifying the role and	

		Bidder shall treated as —Bidder. The maximum nos. of consortium/JV partner should be 3. Any of the parties of the consortium /JV partner or the Prime Bidder/Lead Bidder may meet the technical criteria. However, the Prime Bidder/ Lead Bidder alone should meet the financial criteria. If the bidder does not have a Category B, ISP license or higher, then the bidder needs to tie up with at least one such ISP to provide Internet bandwidth. Both the Bidder and the ISP shall form a consortium/JV and should declare the Prime Bidder / Lead Bidder clearly at the time of bidding.	area of specialization of individual parties consortium/JV, duly signed by Consortium/JV parties on Rs. 100 non-judicial stamp paper should be enclosed. The agreement should clearly define the Prime Bidder/Lead Bidder should be individually jointly signed by each of the Consortium/JV parties. In such case, a tripartite agreement shall be executed between JSCL/ISP partner/Bidder. And the payment shall be made directly to ISP provider by JSCL on behalf of the Bidder		
3	Legal Entity	Any legal entity duly registered in India is allowed. In case of consortium/JV, the Prime Bidder/ Lead Bidder should meet this criterion.	a) Certificates of incorporation and/ or b) Registration Certificates	
4	Turnover	The Prime Bidder/Lead Bidder must have annual turnover of at least Rs. 75 Crores solely from ICT Business and IT Services during each of the last 3 financial years as on 31.03.2016.	Audited and Certified Balance Sheet and Profit/Loss Account for the last 3 Financial Years should be enclosed. CA certificate be enclosed.	

5	Technical Capability	The Bidder or any of the parties of the consortium/ JV partner must have successfully implemented, during last 3 financial years as on 31.03.2016,
		     3) One command and control centre with at least 4 of the smart components mentioned in the scope of work.
		AND
		     4) At least the following numbers of Wi-Fi Systems
		
		2a) Two projects of similar
			Copies of work order or Contract agreement and the client certificates/Project Sign-off Certificate from the client	

		nature for not less than 200 Access Points (AP) in a single work order OR 2b) Three projects of similar nature for not less than 100 Access Points (AP) in a single work order AND 3) One CCTV Surveillance System Project for not less than 100 IP Cameras in a single work Order		
6	Net Worth	The Bidder or the Prime Bidder/Lead Bidder must have positive net worth & profit making in each of the last 3 financial years as on 31.03.2016	CA Certificate mentioning net profit should be enclosed.	
7	Certification	The Bidder or consortium/JV should possess below Certifications at the time of bidding: a) ISO 9001:2008 Certification for System Integration. b) ISO 20000:2011 for IT Service Management (Facility Management Services) c) ISO 27001:2005 for Information Security Management System	The Bidder is required to furnish the copy of valid certification.	
8	Tax Registration	The Bidder or the Prime Bidder/Lead Bidder should have a registered number of a. VAT/Sales Tax where his business is Located b. Service Tax c. Income Tax PAN	Copies of relevant(s) Certificates of Registration.	
9	Technical Specifications of BOQ items	The quoted product/item should fulfil all the technical specifications laid out in the tender document mentioned in the Annexure (Technical specifications of BOQ items). The Bidder is required to furnish Make, Model / Part number of the quoted item.	The Bidder should enclose Relevant catalogues, brochures, etc. in support of all the items quoted in the Bid.	

Annexure-4: Pre-Bid Queries Format
(On bidder's letter head)

Name of the Company/Firm: _____

Name of Person(s) Representing the Company/ Firm:

Name of Person	Designation	Email-ID(s)	Tel. Nos. & Fax

Company/Firm Contacts:

Contact Person(s)	Address for Correspondence	Email-ID(s)	Tel. Nos. & Fax Nos.

Query / Clarification Sought:

S.No.	RFP Page No.	RFP Rule	Rule Details	Query/Suggestion/ Clarification

Note: - Queries must be strictly submitted only in the prescribed format (.XLS/ .XLSX/ .PDF). Queries not submitted in the prescribed format will not be considered/ responded at all by the tendering authority. Also, kindly attach the coloured scanned copy of the receipt towards the submission of the bidding/ tender document fee.

Annexure-5: Tender Form
(On bidder's letter head)

1. Addressed to:

Name of the Procuring Entity	Chief Executive Officer, Jaipur Smart City Limited.
Address	JAIPUR SMART CITY LIMITED, JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016. Phone No. 0141-2741346/2741347 E-Mail ID: jscljaipur@gmail.com

2. Firm Details:

Name of Firm				
Name of Contact Person with				
Designation				
Registered Office Address				
Address of the Firm				
Year of Establishment				
Type of Firm	Public Limited	Private Limited	Partnership	Proprietary
Put Tick mark				
Telephone Number(s)				
Email Address/ Web Site	Email:		Web-Site:	
Fax No.				
Mobile Number	Mobile:			
Certification/Accreditation /Affiliation, if Any				

The requisite deposit against Tender Fee, Processing Fee and EMD amounting to Rs. _____/- has been deposited vide Online receipt generated through Bid Participation portal of JAIPUR SMART CITY LIMITED vide challan No. _____dated _____.

We agree to abide by all the terms and conditions mentioned in this form issued by the Tendering Authority and also the further conditions of the said notice given in the attached sheets (all the pages of which have been signed by us in token of acceptance of the terms mentioned therein along with stamp of the firm).

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure-6: Bidder's Authorization Certificate
(On bidder's letter head)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

I/ We {Name/ Designation} hereby declare/ certify that {Name/ Designation} is hereby authorized to sign relevant documents on behalf of the company/ firm in dealing with BID DOCUMENT Reference No. _____ Dated _____.

He/ She is also authorized to attend meetings & submit technical & commercial information/ clarifications as may be required by you in the course of processing the Bid. For the purpose of validation, his/ her verified signatures are as under.

Thanking you,

Name of Bidder	
Address:	
Authorised Signatory:	
Signed :	
Date :	
Pace :	
Seal of the Organization:	Signature Verified

Annexure-7: Self-Declaration – No Blacklisting
(On bidder's letter head)

To:

Chief Executive Officer [Procuring Entity]
Jaipur Smart City Limited
JMC Building, Pt. Deendayal Upadhyay Bhawan Lal Kothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

In response to the BID DOCUMENT Ref. No. _____dated _____ for {Project Title} _____, as an Owner/Partner/Director of _____ , I/ We hereby declare that presently our Company/ firm _____ or any of our group or associate companies, at the time of bidding, is having unblemished record and is not declared ineligible or has been issued letter for blacklisting for corrupt & fraudulent practices either indefinitely or for a particular period of time by any State/ Central government/ PSU/ UT or the Procuring Entity.

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 our bid, to the extent accepted, may be cancelled.

Thanking you,

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure: 8- Declaration by the Bidder regarding Qualification Under Section 7 of the ACT
(On bidder's letter head)

Declaration

In relation to my/our Bid submitted to_____ for procurement of _____ in response to their Notice Inviting Bids No. _____ Dated _____ I/we hereby declare under Section 7 of Rajasthan Transparency in Public Procurement Act, 2012, that:

1. I/we possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity;
2. I/we have fulfilled my/our obligation to pay such of the taxes payable to the Union and the State Government or any local authority as specified in the Bidding Document;
3. I/we are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and not the subject of legal proceedings for any of the foregoing reasons;
4. I/we do not have, and our directors and officers not have, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to enter into a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;
5. I/we do not have a conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition.

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure-9: Certificate of Conformity/No Deviation/ End of Service Support
(On bidder's letter head)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

This is to certify that, the specifications of Hardware/Software/FMS which I/ We have mentioned in the Technical bid, and which I/ We shall supply if I/ We am/ are awarded with the work, are in conformity with the minimum specifications of the Tender/ bidding document and that there are no deviations of any kind from the requirement specifications.

Also, I/ we have thoroughly read the tender/ bidding document and by signing this certificate, we hereby submit our token of acceptance to all the tender terms & conditions without any deviations.

I/ We also certify that the price I/ we have quoted is inclusive of all the cost factors involved in the end-to-end implementation and execution of the project, to meet the desired standards set out in the Tender/ bidding Document. The end of service support date will not precede the expiry of warranty for any the items supplied / commissioned by us.

Thanking you,

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure-10: Undertaking On Authenticity of Items
(On Non-Judicial Stamp Paper of Rs. 100/-)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

Reference: BID DOCUMENT No. : _____

Dated:_____

This has reference to the items being supplied/ quoted to you vide our bid ref. no. _____ dated_____.

We hereby undertake that all the components/ parts/ assembly/ software used in the equipment shall be genuine, original and new components /parts/ assembly/ software from respective OEMs of the products and that no refurbished/ duplicate/ second hand components/ parts/ assembly/ software are being used or shall be used. In respect of licensed software, we undertake that the same shall be supplied along with the authorized license certificate. Also, that it shall be sourced from the authorized source for use in India.

If this undertaking is found to be incorrect, we at the time of delivery or during installation, for the equipment already billed, agree to take back the equipment already supplied at our cost and return any amount paid to us by you in this regard and that you will have the right to forfeit our BSD/ SD/ PSD for this bid and/ or debar/ black list us or take suitable action against us.

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure- 11: Undertaking for functional requirement of Equipment (Letter Head)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

Reference: BID DOCUMENT No. : _____

Dated:_____

This has reference to the items being supplied/ quoted to you vide our bid ref. no. _____ dated_____.

We hereby undertake that all the proposed active Network components (like Wireless Controller, Access Points, Radius Server, Network Monitoring Tool and Switches) & Surveillance components (like CCTV Cameras and CCTV VMS Solution) to the extent possible, be from Single OEM.

We hereby further undertake that in cases, where we propose the solution with network & surveillance components (as specified above) from more than one OEM, then we shall furnish Undertaking from all OEM's whose equipments are part of the overall solution thus confirming 100% compliance to required line-by-line technical specifications and complete functional requirements as stated in the bid document, interoperability and performance guarantee for the complete solution (not just part of the overall network solution) comprising of all proposed network components taking complete ownership and responsibility of the complete solution and all network equipments proposed from multiple OEMs.

If this undertaking is found to be incorrect, we at the time of delivery or during installation, for the equipment already billed, agree to take back the equipment already supplied at our cost and return any amount paid to us by you in this regard and that you will have the right to forfeit our BSD/ SD/ PSD for this bid and/ or debar/ black list us or take suitable action against us.

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure-12: Technical Bid Submission Sheet
(On bidder's letter head)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

We, the undersigned, declare that:

1. We have examined and have no reservations to the Bidding Document, including Addenda No. _____.
2. We offer Hardware/ Software/FMS for in conformity and in accordance to the Bid Document.
3. Our Bid shall be valid for a period of 90 days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
4. If our Bid is accepted, we commit to obtain a Performance Security in the amount of **5%** of the Contract Price for the due performance of the Contract;
5. Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the eligible countries;
6. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers, if permitted, in the Bidding Document;
7. Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers has not been debarred by any State/ Central government/ PSU/ UT or the Procuring Entity;
8. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed;
9. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive;
10. We agree to permit the Procuring Entity or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the Procuring Entity;
11. We declare that we have complied with and shall continue to comply with the provisions of the Code of Integrity for Bidders as specified in the Rajasthan Transparency in Public Procurement Act, 2012, the Rajasthan Transparency in Public Procurement Rules, 2012 and this Bidding Document in this procurement process and in execution of the Contract.

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure-13: Financial Bid Submission Sheet (On bidder's letter head)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

We, the undersigned, declare that:

1. We, the undersigned bidder, Having read & examined in detail, the Bidding Document, the receipt of which is hereby duly acknowledged, I/ we, the undersigned, offer to supply/ work as mentioned in the Scope of the work, Bill of Material, Technical specifications, Service Level Standards & in conformity with the said bidding document for the same.

2. I / We hereby confirm that I / We have bid for **all items** mentioned in the Bill of Material (BOM) / Bill of Quantity (BOQ).

3. I / We undertake that the prices are in conformity with the specifications prescribed. The quote/ price are inclusive of all cost likely to be incurred for executing this work. The prices are inclusive of all type of govt. taxes/duties.

4. I / We undertake, if our bid is accepted, to deliver the Services in accordance with the delivery schedule specified in the schedule of Requirements.

5. I/ We hereby declare that in case the contract is awarded to us, we shall submit the contract performance guarantee as prescribed in the bidding document.

6. I / We agree to abide by this bid for a period of days after the last date fixed for bid submission and it shall remain binding upon us and may be accepted at any time before the expiry of that period.

7. Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and your notification of award shall constitute a binding Contract between us.

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

9. I/ We agree to permit the Procuring Entity or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the Procuring Entity.

10. We understand that you are not bound to accept the lowest or any bid you may receive.

11. We agree to all the terms & conditions as mentioned in the bidding document and submit that we have not submitted any deviations in this regard.

Name :	
Address:	
In the capacity of :	
Signed :	
Date :	
Place :	
Seal of the Organization :	

Annexure-14: Price Schedule
(Online submission on e-Procurement Portal)

(The rates shall be filled up separately in given format on e-procurement portal with financial bid).

Name of the Procuring Entity:						
Name of Work:						
Bidder Name:						
PRICE SCHEDULE						
Sl. No	Item Description	Units	Rate (In Rs.) FOR destination including of all cost and all taxes except Rajasthan VAT but including CST (if Applicable)	VAT Amount on Units Price (If Applicable) (In Rs.)	Service Tax Amount on Units Price (If Applicable) (In Rs.)	Amount inclusive of all (In Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (4+5+6)
1.	Delivery, Installation, Commissioning, Integration, Development and handover in all respect, including Operation and Maintenance for 5 Years	Lump Sum	The rates shall be filled up separately in given format on e-procurement portal with financial bid (Item wise).			
*Total in Figures						Auto Fill (Do Not Fill)
*Total in Words						Auto Fill (Do Not Fill)

*Instructions for filling Financial Bid in e-tendering portal are given in tender document.

Note: Revenue generated by the bidder will be subtracted from the expenditure will be used for calculating L1 bidder

Annexure-15: Bank Guarantee Format – Performance Security (On non-Judicial Stamp Paper)

(To be stamped in accordance with Stamp Act and on a Stamp Paper purchased from Rajasthan State only and to be issued by a Nationalised/ Scheduled bank having its branch at Jaipur and payable at par at Jaipur, Rajasthan)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

Subject: _____
Reference: Work Order No………………dated ……….

1.   In consideration of the Chief Executive Officer [Procuring Entity], JAIPUR SMART CITY LIMITED (hereinafter called "JAIPUR SMART CITY LIMITED") having agreed to exempt M/s …………………………………..

   (hereinafter called "the said Contractor(s)" from the demand, under the terms and conditions of an Work Order No. ……………………………….. dated …………… for the work ……………………………………………………………… (here inafter called "the said Agreement") of Performance Security Deposit (PSD) for the due fulfilment by the said Contractor (s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. …………………….. (Rupees ……………………. only), we …………………………………[Name of Bank with Addresss], (hereinafter referred to as "the Bank") at the request of M/s …………………………………., do hereby undertake to pay to the JAIPUR SMART CITY LIMITED an amount not exceeding Rs. ……………….. (Rupees ………………….. only)
   on demand.

2. We …………………………………[Name of Bank with Addresss], do hereby undertake to pay Rs. ……………………. (Rupees …………………. only), the amounts due and payable under this guarantee without any demur or delay, merely on a demand from the JAIPUR SMART CITY LIMITED. Any such demand made on the bank by the JAIPUR SMART CITY LIMITED shall be conclusive as regards the amount due and payable by the Bank under this guarantee. The Bank Guarantee shall be completely at the disposal of the JAIPUR SMART CITY LIMITED and We …………………………………[Name of Bank with Addresss], bound ourselves with all directions given by JAIPUR SMART CITY LIMITED regarding this Bank Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. ………………… (Rupees …………………….. only).

3. We …………………………………[Name of Bank with Addresss], undertake to pay to the JAIPUR SMART CITY LIMITED any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any Court or Tribunal or Arbitrator etc. relating thereto, our liability under these presents being absolute, unequivocal and unconditional.

4. We …………………………………[Name of Bank with Addresss], further agree that the performance guarantee herein contained shall remain in full force and effective up to

…………………… and that it shall continue to be enforceable for above specified period till all the dues of JAIPUR SMART CITY LIMITED under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till the JAIPUR SMART CITY LIMITED certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.

5. We ……………………………………[Name of Bank with Addresss], further agree with the JAIPUR SMART CITY LIMITED that the JAIPUR SMART CITY LIMITED shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the JAIPUR SMART CITY LIMITED against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of the JAIPUR SMART CITY LIMITED or any indulgence by the JAIPUR SMART CITY LIMITED to the said Contractor(s) or by any such matter or thing whatsoever which would but for this provision, have effect of so relieving us.

6. The liability of us ……………………………………[Name of Bank with Addresss], under this guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We ……………………………………[Name of Bank with Addresss], lastly undertake not to revoke this guarantee except with the previous consent of the JAIPUR SMART CITY LIMITED in writing.

8. This performance Guarantee shall remain valid and in full effect, until it is decided to be discharged by the JAIPUR SMART CITY LIMITED. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. ………………………… (Rupees ……………… only).

9. It shall not be necessary for the JAIPUR SMART CITY LIMITED to proceed against the contractor before
    proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which the JAIPUR SMART CITY LIMITED may have obtained or obtain from the contractor.

10. We ……………………………………[Name of Bank with Addresss], verify that we have a branch at Jaipur.

11. We undertake that this Bank Guarantee shall be payable at any of its branch at Jaipur. If the last day of expiry of Bank Guarantee happens to be a holiday of the Bank, the Bank Guarantee shall expire on the close of the next working day.

12. We hereby confirm that we have the power(s) to issue this guarantee in your favour under the memorandum and articles of Association/constitution of our bank and the undersigned is/are the recipient of authority by express delegation of power(s) and has/have full power(s) to execute this guarantee for the power of attorney issued by the bank.

"Notwithstanding anything contained herein:
(i)   Our Liability under this Bank Guarantee shall not exceed Rs. …………………/-(Rupees ……………….. Only).
(ii)   This Bank Guarantee shall be valid upto ……………………….

(iii)   We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ……………..

(iv)   The Bank Guarantee shall be kept valid for 6 months beyond (grace period) the completion/commissioning schedule as per phase-3. However, the validity of the BG may be extended on the written request from the client for the specified period.

Date ………………… (Signature) …………………………………. Place …………………
(Printed Name) …………………………………. (Designation) …………………………………
(Bank's common seal) ………………………….

In presence of:
WTTNESS (with full name, designation, address & official seal, if any)
(1) …………………………………………
(2) …………………………………………

Bank Details :
Name & address of Bank :
Name of contact person of Bank: Contact telephone number:

GUIDELINES FOR SUBMISSION OF BANK GUARANTEE "The Bank Guarantee shall fulfil the following conditions in the absence of which they cannot be considered valid: -

1. Bank Guarantee shall be executed on non- judicial stamp paper of applicable value purchased in the name of the bank.
2. Two persons should sign as witnesses mentioning their full name, designation, address and office seal (if any).
3. The Executor (Bank Authorities) may mention the power of attorney No. and date of execution in his/her favour authorizing him/ her to sign the document. The Power of Attorney to be witnessed by two persons mentioning their full name and address.
4. The Bank Guarantee should be executed by a Nationalised Bank/ Scheduled Commercial Bank only.
5. Non – Judicial stamp paper shall be used within 6 months from the date of Purchase of the same.
6. Bank Guarantee executed on the non-judicial stamp paper after 6 (six) months of the purchase of such stamp paper shall be treated as non-valid.
7. The contents of Bank Guarantee shall be strictly as per format prescribed by JAIPUR SMART CITY LIMITED.
8. Each page of Bank Guarantee shall bear signature and seal of the Bank and B.G. number.
9. All corrections, deletions etc. in the Bank Guarantee should be authenticated by signature of Bank Officials signing the Bank Guarantee.
10. Bank should separately send through registered post/courier a certified copy of Bank Guarantee, mentioning Bid reference, Bid title and bidder name, directly to the Purchaser at the following address:

    To:
Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

Annexure-16: Bank Guarantee Format – BID Security Format (On non-Judicial Stamp Paper)

IRREVOCABLE & UNCONDITIONAL BANK GUARANTEE

(To be stamped in accordance with Stamp Act and on a Stamp Paper purchased from Rajasthan State only and to be issued by a Nationalised/ Scheduled bank having its branch at Jaipur and payable at par at Jaipur, Rajasthan)

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

Sir,

1. In accordance with your Notice Inviting Bid for <please specify the project title> vide BID DOCUMENT Reference No………………………………….Dated …………………………….. (Name & full address of the firm) (Hereinafter called the —
   Bidder) hereby submits the Bank Guarantee to participate in the said procurement/ bidding process as mentioned in the bidding document.

2. It is a condition in the bidding documents that the Bidder has to deposit Bid Security (EMD) amounting to <Rs.   (Rupees <in words>)> in respect to the BID DOCUMENT Reference
   No…………………………….Dated …………………..issued by Executive Engineer (Elect.- PRN), [Procuring Entity], JAIPUR SMART CITY LIMITED, Jaipur (hereinafter referred to as JAIPUR SMART CITY LIMITED) by a Bank Guarantee from a Nationalized Bank/ Scheduled Commercial Bank having its branch at Jaipur irrevocable and operative till the bid validity date (i.e. 120 days from the date of opening of bid). It may be extended if required in concurrence with the bid validity.

3. And whereas the Bidder desires to furnish a Bank Guarantee for a sum of <Rs. (Rupees <in words>)> to JAIPUR SMART CITY LIMITED as Bid Security.

4. Now, therefore, we the ………………………………..…… (Bank), a body corporate constituted under the Banking Companies (Acquisition and Transfer of Undertaking) Act. 1969 (delete, if not applicable) and branch Office at………………….. (hereinafter referred to as the Guarantor) do hereby undertake and agree to pay forthwith on demand in writing by the JAIPUR SMART CITY LIMITED of the said guaranteed amount without any demur, reservation or recourse.

5. We, the aforesaid bank, further agree that the JAIPUR SMART CITY LIMITED shall be the sole judge of and as to whether the Bidder has committed any breach or breaches of any of the terms costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the JAIPUR SMART CITY LIMITED on account thereof to the extent of the Bid Security required to be deposited by the Bidder in respect of the said bidding document and the decision of the JAIPUR SMART CITY LIMITED that the Bidder has committed such breach or breaches and as to the amount or amounts of loss,

damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the JAIPUR SMART CITY LIMITED shall be final and binding on us.

6. We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect until it is released by the JAIPUR SMART CITY LIMITED and it is further declared that it shall not be necessary for the JAIPUR SMART CITY LIMITED to proceed against the Bidder before proceeding against the Bank and the Guarantee herein contained shall be invoked against the Bank, notwithstanding any security which the JAIPUR SMART CITY LIMITED may have obtained or shall be obtained from the Bidder at any time when proceedings are taken against the Bank for whatever amount that may be outstanding or unrealized under the Guarantee.

7. Any notice by way of demand or otherwise hereunder may be sent by special courier, telex, fax, registered post or other electronic media to our address, as aforesaid and if sent by post, it shall be deemed to have been given to us after the expiry of 48 hours when the same has been posted. The BG shall be payable at Jaipur Branch.

8. If it is necessary to extend this guarantee on account of any reason whatsoever, we undertake to extend the period of this guarantee on the request of our constituent under intimation to you.

9. The right of the JAIPUR SMART CITY LIMITED to recover the said amount of <Rs. (Rupees <in words>) from us in manner aforesaid will not be precluded/ affected, even if, disputes have been raised by the said M/s. ………………………(Bidder) and/ or dispute or disputes are pending before any court, authority, officer, tribunal, arbitrator(s) etc..

10. Notwithstanding anything stated above, our liability under this guarantee shall be restricted to <Rs. (Rupees <in words>)> and our guarantee shall remain in force till bid validity period i.e. 120 days from the last date of bid submission and unless a demand or claim under the guarantee is made on us in writing within three months after the Bid validity date, all your rights under the guarantee shall be forfeited and we shall be relieved and discharged from all liability there under.

11. This guarantee shall be governed by and construed in accordance with the Indian Laws and we hereby submit to the exclusive jurisdiction of courts of Justice in India for the purpose of any suit or action or other proceedings arising out of this guarantee or the subject matter hereof brought by you may not be enforced in or by such count.

12. We hereby confirm that we have the power/s to issue this Guarantee in your favour under the Memorandum and Articles of Association/ Constitution of our bank and the undersigned is/are the recipient of authority by express delegation of power/s and has/have full power/s to execute this guarantee under the Power of Attorney issued by the bank in your favour.

Date ………………… (Signature) …………………………………. Place …………………
(Printed Name) ………………………………. (Designation) …………………………………
(Bank's common seal) ………………………….
In presence of:
WTTNESS (with full name, designation, address & official seal, if any)
(1) ………………………………………
(2) ………………………………………

Bank Details :
Name & address of Bank :
Name of contact person of Bank: Contact telephone number:

GUIDELINES FOR SUBMISSION OF BANK GUARANTEE "The Bank Guarantee shall fulfill the following conditions in the absence of which they cannot be considered valid: -

1. Bank Guarantee shall be executed on non- judicial stamp paper of applicable value purchased in the name of the bank.
2. Two persons should sign as witnesses mentioning their full name, designation, address and office seal (if any).
3. The Executor (Bank Authorities) may mention the power of attorney No. and date of execution in his/her favour authorizing him/ her to sign the document. The Power of Attorney to be witnessed by two persons mentioning their full name and address.
4. The Bank Guarantee should be executed by a Nationalized Bank/ Scheduled Commercial Bank only.
5. Non – Judicial stamp paper shall be used within 6 months from the date of Purchase of the same.
6. Bank Guarantee executed on the non-judicial stamp paper after 6 (six) months of the purchase of such stamp paper shall be treated as non-valid.
7. The contents of Bank Guarantee shall be strictly as per format prescribed by JAIPUR SMART CITY LIMITED.
8. Each page of Bank Guarantee shall bear signature and seal of the Bank and B.G. number.
9. All corrections, deletions etc. in the Bank Guarantee should be authenticated by signature of Bank Officials signing the Bank Guarantee.
10. The validity of the Bank Guarantee shall be kept at least for 120 days from the date of opening of Part – I Bid.
11. Bank should separately send through registered post/courier a certified copy of Bank Guarantee, mentioning Bid reference, Bid title and bidder name, directly to the Purchaser at the following address:

To:

Chief Executive Officer [Procuring Entity]
JAIPUR SMART CITY LIMITED
JMC Building, Pt. Deendayal Upadhyay BhawanLalKothi, Tonk Road, Jaipur-302016.
Phone No. 0141-2741346/2741347
E-Mail ID: jscljaipur@gmail.com

Annexure–17: Agreement
(On Non-Judicial Stamp Paper of Rs. 1,000/-)
Agreement

THIS AGREEMENT made on this …………………… day of …………………… between of ………………… (herein after the Procuring Entity), of the   one part, and ………………………. Of (here in after —the Supplier☐), of the other part:

Whereas the procuring Entity invited Bids for Development of Smart Roads (Package 2: ICT Works) in ABD area in Jaipur and has accepted a Bid by the Supplier for the sum of ……………… (herein after the Contract Price).

NOW THIS AGREEMENT WITNESS AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

   a) The Procuring Entity's Notification to the Supplier of Award of Contract And Award of Services;
   b) Pre-Qualification / Eligibility Criteria ;
   c) Scope of Work ;
   d) Instruction to Bidder (ITB) ;
   e) General Terms & Condition of Bid & Contract ;
   f) Special Terms & Conditions of Bid & Contract ;
   g) The Notice Inviting Bids ; and
   h) All Annexure's.

   This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, the documents shall prevail in the order listed above.

3. In consideration of the payments to be made by the Procuring Entity to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Procuring Entity for Supply of Network Switches and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Entity hereby covenants to pay the Supplier in consideration of the Supply of Network Switches and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of India and Rajasthan on the day, month and year indicated above.

For the Supplier	**For the Procuring Entity (On behalf of JAIPUR SMART CITY LIMITED/ the Procuring Entity)**
Name:	Name
Designation :	Designation
Address :	Address :
Signed by:	
Witness 1 :	
Witness 2:	

Annexure-18: Memorandum of Appeal under the Rajasthan Transparency in Public Procurement Act, 2012

FORM No. 1
[See rule 83]
Memorandum of Appeal under the Rajasthan Transparency in Public Procurement Act, 2012

Appeal No _____ of _____
Before the _____ (First / Second Appellate Authority)

1. Particulars of appellant:
   (i) Name of the appellant:
   (ii) Official address, if any:
   (iii) Residential address:
2. Name and address of the respondent(s):

(i)

(ii)

(iii)

3. Number and date of the order appealed against and name and designation of the officer / authority who passed the order (enclose copy), or a statement of a decision, action or omission of the Procuring Entity in contravention to the provisions of the Act by which the appellant is aggrieved:

4. If the Appellant proposes to be represented by a representative, the name and postal address of the representative:

5. Number of affidavits and documents enclosed with the appeal:

6. Grounds of appeal:
   _____
   _____(Supported by an affidavit)

7. Prayer:
   _____
   _____

   Place : _____
   Date : _____
   Appellant's Signature

Annexure A: Compliance with the Code of integrity and No Conflict of interest

Any person participating in a procurement process shall –

a. Not offer any bribe reward ort gift or any material benefit either directly or indirectly in exchange for an unfair advantage in procurement process or otherwise influence the procurement process ;

b. Not misrepresent or omit that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation ;

c. Not indulge in any collusion, Bid rigging or anti-competitive behaviour to impair the transparency, famines and progress of the procurement process;

d. Not misuse any information shared between the procuring tatty and the Bidders with an intent to gain unfair advantage in the procurement process;

e. Not indulge in any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process;

f. Not obstruct any investigation or audit of a procurement process;

g. Disclose conflict of interest, if any; and

h. Disclose any previous transgressions with any entity in Lydia or any other country during the last three years or any debarment by any other procuring entity.

Conflict of interest:-

The Bidder participating in a bidding process must not have a conflict of interest.

A Conflict of interest of considered to be a situation in which a party has Interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with palpable laws and regulations.

i A Bidder may be considered to be in conflict of interest with one or more parties in a bidding process if , including but not limited to :

a. Have controlling partners/shareholders in common; or

b. Receive or have received any direct or indirect subsidy from any of them; or

c. Have the same legal representative for purposes of the Bid; or

d. Have a relationship with each other, directly or through common third parties , that puts them in a position to have access to information about or influence on the Bid of another Bidder , or influence the decisions of the procuring Entity regarding the bidding process; or

e. The Bidder participates in more than one Bid in a bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the the Bidder is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder in more than one Bid; or

f. The Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Goods, works or services that are the subject of the Bid; or

g. The Bidder or any of its affiliates has been hired (or is proposed to be hired) by the procuring Entity as engineer-in-charge/consultant for the contract.

<div align="right">
Signature of Tenderer
With seal
</div>

Annexure B : Declaration by the Bidder regarding Qualifications

Declaration by the Bidder

In relation to my/our Bid submitted to ------------------------- for procurement of ------------------- -------- in response to their Notice inviting Bids No. ---------------------- Dated ------------------------------ ------------I/we hereby declare under section 7 of Rajasthan Transparency in public procuring Act, 2012 that:

1. I/we possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the procuring Entity;

2. I/we have fulfilled my/our obligation to pay such of the taxes payable to the Union and the state Government or any local authority as specified in the Bidding Document;

3. I/we are not insolvent, in receiver shop, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and not the subject of legal proceedings for any of the foregoing reasons;

4. I/we do not have , and our directors and officers not have, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to enter into a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;

5. I/we do not have a conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition:

Date: signature of bidder
Place: Name
                                                    Designation:
                                                    Address:

                                                    Signature of Tenderer
                                                    With seal

Annexure C : Grievance Redressal during Procurement Process

The designation and address of First Appellate Authority is --------------------------------

The designation and address of second Appellate Authority is --

1. Filing an appeal

   If any Bidder or prospective bidder is aggrieved that any decision, action or omission of the procuring Entity is in contravention to the provisions of the Act or the Rules or the Guidelines issued there under, he may file an appeal to First Appellate Authority, as specified in the Bidding Document within a period of ten days from the date of such decision or action, omission, as the case may be. Clearly giving the specific ground or grounds on which he feels aggrieved:

   Provided that after the declaration of a Bidder as successful the appeal may be filed only by a Bidder who has participated in procurement proceedings:

   Provided further that in case a procuring Entity Evaluates the Technical Bids before the opening of the Financial Bids may be filed only by a Bidder whose Technical Bid is found to be acceptable.

2. The officer whom an appeal is filed under para (1) shall deal with the appeal as expeditiously as possible and shall endeavour to dispose it of within thirty days from the date of the appeal.

3. If the officer designated under para (1)fails to dispose of the appeal filed within the period specified in para (2) or if the Bidder or prospective bidder or the procuring Entity is aggrieved by the order passed by the First Appellate Authority, the Bidder or prospective bidder or the procuring Entity, as the case may be may file a second appeal to second Appellate authority specified in the Bidding Document in this behalf within fifteen days from the expiry of the period specified in para (3) or of the date of receipt of the order passed by the First Appellate Authority as the case may be.

4. Appeal not to lie in certain cases

   No appeal shall lie against any decision of the procuring Entity relating to the following matters, namely:-

   a) Determination of need of procurement;
   b) Provisions limiting participation of Bidders in the Bid process;
   c) The decision of whether or not to enter into negotiations;
   d) Cancellation of a procurement process;
   e) Applicability of the provisions of confidentiality.

5. Form of Appeal

   a) An appeal under para (1) or (3) above shall be in the annexed Form along with as many copies as there are respondents in the appeal.
   b) Every appeal shall be accompanied by an order appealed against, if any, affidavit verifying the facts stated in the appeal and proof of payment of fee.

<div align="right">

Signature of Tenderer
With seal

</div>

c) Every appeal may be presented to first Appellate Authority or second Appellate Authority, as the case may be, in person or through registered post or authorised representative.

6. Fee for filing appeal

   a) Fee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non –refundable.

   b) The fee shall be paid in the form of bank demand draft or banker's cheque of a scheduled Bank in India payable in the name of appellate Authority concerned.

7. Procedure for disposal of appeal

   a) The First Appellate Authority or second Appellate Authority, as the case may be upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.

   b) On the date fixed for hearing , the First Appellate Authority or second Appellate Authority, as the case may be, shall –

      I. Hear all the parties to appeal present before him; and

      II. Peruse or inspect documents, relevant records or copies thereof relating to the matter.

   c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.

   d) The order passed under sub-clause (c) above shall also be placed on the state public procurement portal.

Signature of Tenderer
With seal

Memorandum of Appeal under the Rajasthan Transparency in Public Procurement Act, 2012

Appeal No. -------------------- of ---------------------------

Before the --- (First/second Appellate Authority)

1. Particulars of appellant :
    I.   Name of the appellant:
    II.   Official address, if any :
    III. Residential address:
2. Name and address of the respondent (s):
    (i)
    (ii)
    (iii)
3. Number and date of the order appealed against
    and name and designation of the officer/authority
    statement of a decision, action or omission
    of the procuring Entity in contravention to the provisions
    of the Act by which the appellant is aggrieved:
4. If the Appellant proposes to be represented
    By a representative, the name and postal address
    Of the representative :
5. Number of affidavits and documents enclosed with the appeal :
6.   Grounds   of-------------------------- appeal ; ---------------
    ---------------------------------- -------------- --

    -- (supported by an
    affidavit)
7.   Prayer :

    Place ----------------------------
    Date ----------------------------
    Appellant's signature

                                                                    Signature of Tenderer
                                                                    With seal

Annexure D : Additional Conditions of contract

1. Correction of arithmetical errors

   Provided that a financial Bid is substantially responsive, the procuring Entity will correct arithmetical errors during evaluation of Financial Bids on the following basis:

   I.   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, unless in the opinion of procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall governs and the unit price shall be corrected :

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

   III. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above.

   If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified and its Bid security shall be forfeited or its Bid securing Declaration shall be executed.

2. Procuring Entity's Right to vary Quantities

   I.   At the time of award of contract, the quantity of Goods, works or services originally specified in the Bidding Document may be increased or decreased by a specified percentage, but such increase or decrease shall not exceed twenty percent, of the quantity specified in the Bidding Document. It shall be without any change in the unit prices. Or other terms and conditions of the Bid and the conditions of contract.

   II. If the procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the Bidder shall not be entitled for any claim or compensation except otherwise provided in the conditions of contract.

   III. In case of procurement of Goods or services, additional quantity ma be procured by placing a repeat order on the rates and conditions of the original order. However, the additional quantity shall not be more than 25 % of the value of Goods of the original contract and shall be. Within one month from the date of expiry of last supply. If the supplier fails to do so, the procuring Entity shall be free to arrange for the balance supply by limited Bidding or otherwise and the extra cost incurred shall be recovered from the supplier.

Signature of Tenderer
With seal

UNDERTAKING BY THE APPLICANT

I,Shri_____

_____S/o_____

_____ hereby solemnly agree to abide by the Terms & conditions

mentioned in the tender document. Any break of the Clause/Clauses will render my contract null and void. I

have understood completely about this tender document and the terms and conditions therein. I agree to

cleaning & sanitation services of hospital building no. .... On the rates mentioned in the tender

rate list annexed with. I have also understood that I have to maintain the equipments, sufficient No. of

labours, with cleaning & sanitation quality service and also as mentioned with the tender.

                                               Signature of the Contractor

Name of the Contractor_____

Witness No.
1 (Name and full address)

Witness No.
2 (Name and full address)

                     (Full Signature of the Contractor with seal of the Agency)

CONDITION OF TENDER AND CONTRACT FOR OPEN/GLOBAL TENDER

<u>Note :</u> Tenders should read these conditions carefully and comply strictly while sending their tenders .

1. Tenders must be enclosed in a properly sealed envelop, according to the directions given in the tender notice.
2. "Tender by manufacturers/authorized dealers": tenders shall be given only by manufacturers or by authorized dealers in the goods. they shall therefore, furnish a declaration the SR FORM 11[Performa enclosed in page NO. 1]
3. i) Any change in the constitution of the firm etc., shall be notified forth with by the contractor in writing to the purchase officer and such change shall not relieve any former member of the firm etc. From any liability under the contract.

   ii) No new partner/partners shall be accepted in the firm by the contractor in respect of the contract unless he/they agree to abide by all its terms, conditions and deposit with the purchase officer a written agreement to this effect. The contractor receipt for acknowledgement or that of any partners subsequently accepted as above shall bind all of the and will be sufficient discharge for any of the purpose of the contract.
4. Sales Tax Registration and Clearance Certificate: No dealer who is not registered under the Sales Tax Act/VAT prevalent in the State where his business is located shall tender. The Sales Tax Registration/VAT Number should be quoted and a Sales Tax Clearance certificate from the Commercial Taxes Officer of the circle concerned shall be submitted without which the tender is liable to rejection.
5. Tender form shall be filled in ink or typed. No tender filled in pencil shall be considered the renderers shall sign the tender form on each page and at the end in token of acceptance of all the terms and conditions of the tender.
6. Rate shall be written both in words and figures. There should not be error and/or over writings. Corrections if any, should be made clearly and initial with dates. The rated should mention element of the Rajasthan State Sales Tax and Central Sales Tax separately.
7. a) All rates quoted must be for Office of the Member Secretary, Rajasthan Medicare Relief Society, J.L.N. Hospital, Ajmer and should include all incidental charges except central/Rajasthan Sales Tax/ Service Tax which should be shown separately. In case of local supplies the rates should include all taxes etc. and no cartage or transportation charges will be paid by the society and the delivery of the goods shall be given at the premises of purchase officer. The rates therefore should be exclusive of local tax. In case goods to be purchased are for the purpose of resale or use as manufacture of any goods for sale, the rates shall be inclusive of local tax. In the former case, a certificate in the prescribed form will be furnished along with supply order.

   b) The necessary certificates from Drug Controller in case of tender of Drugs & Medicine should be enclosed with tender.
8. (i) Comparison of Rates : In comparing the rates tendered by firms outside Rajasthan and those in Rajasthan but not entitled to price preference under the Rules, the elements of Rajasthan Sates Tax shall be excluded whereas that of Central Sales Tax shall be included.

   (ii) While comparing the rates in respect of firms within Rajasthan, the element of Rajasthan. – Sales Tax shall be included.
9. <u>Price Preference :-</u> Price preference/preference will be given to the goods produced or manufactured by industries of Rajasthan over goods produced or manufactured by Industries out side Rajasthan as per Purchase of Stores (Preference to industries of Rajasthan Rule 1995)
10. <u>Validity: -</u> Tender shall be valid for a period of Three months from the date of opening of tenders.
11. The approved supplier shall be deemed to have carefully examined the conditions, specifications, size make and drawings etc. of the goods to be supplied. If he has any doubts as to the meaning of and portion of these conditions of the specification, drawing etc. he shall, before signing the contract refer the same to the purchase officer and get clarifications.
12. The contractor shall not assign or sun-let his contract or any substantial part thereof to any other agency.

SPECIFICATIONS

13.   (i)   All articles supplied shall strictly conform to the specification, trademarks laid down in the tender form and wherever articles have been required according to ISI specifications, those articles should confirm strictly to those specifications and should bear such marks.

   (ii)   The supply of articles shall in addition, conform strictly to the approved samples and in case of other material where there are no standard of approved samples, the supplies shall be of the very best quality and, description, the decision of the purchase officer/purchase committee what so ever the articles supplied conform to the specification and are in accordance with the samples if any, shall be final and binding on the tenderers.

(iii)   <u>Warranty /Guarantee Clause :</u> The tenderer would give guarantee that the goods/stores/articles would continue to confirm to the description and quality as specified for a period of .... days/ month from the date of delivery of the said goods/Stores articles to be purchased and that not with standing the fact that the purchaser may have inspected and/or approved the said goods/stores/articles be discovered not to conform to the description and quality aforesaid or have determined (and the decision of the purchase officer in that behalf will be final and conclusive), the purchaser will be entitled to reject the said goods/ stores/articles or such portion thereof as may be discovered not to conform to the said description and quality, on such rejection goods/articles/ stores will be at the seller's risk and all the provisions relating to rejection of goods etc. shall apply. The tenderer shall if so called upon to do, replace the goods, etc. or such portion thereof as is rejection by the purchase officer otherwise tenderer shall pay such damage as may arise by reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the purchase officer in that behalf under this contract or otherwise.

(iv)   In case of Machinery and equipment also, guarantee will be given as mentioned in clause (iii) above and the tenderer shall during the guarantee period replace the parts if any defect, if found during the above period so as to make machinery and equipment's operative. The tenderer shall also replace machinery and equipment in case it is found defective which cannot be put to operation due to any defect etc.

(v) In case of Machinery and equipment specified by the purchase officer the tenderer shall be responsible for carrying out annual maintenance and repairs on the terms and condition as led down be agreed. The tenderer shall also be responsible to ensure adequate regular supply of spare parts needed for a specific type of machinery and equipment whether under their annual maintenance and repair rate contract or otherwise. In case of change of model he will give sufficient notice to the purchase officer who may like to purchase spare parts from them to maintain the machinery and equipment in perfect condition.

14. <u>Inspection</u>

(a) The purchase office or his duly authorized representative shall at all reasonable time have access to   the suppliers premises and shall have the power at the reasonable time to inspect and examine the   materials   and workmanship of the goods/equipment/machineries during manufacturing process or afterwards as may be decided.

(b)The tenderer shall furnish complete address of the premises of his office, godown and workshop where inspection can be made together with name and address of the person who is to be contacted for the purpose. In case of those deals who have newly entered in business, a letter of introduction from their bankers will be necessary.

15. <u>Samples:</u> Tenders for articles marked within the schedule shall be accompanied by two set of samples of the articles tendered properly packed. Such Samples if submitted personally will be received in the office. A receipt will be given for each sample by the officer receiving the samples. Samples if sent by train, etc., should be dispatched freight paid and the R.R. or G.R. should be sent under a separate registered cover. Samples for catering/food items should be given in a plastic box or in polythene begs at the cost of the tenderer. The tenders may not be considered without Samples.

16. Each sample shall be marked suitably either by written on the sample or on a slip or durable paper securely fastened to the sample, the name of the tenderer and serial number of the item of which it is a sample in the schedule.

17. Approved samples would be retained free of cost up to the period of six months after the expiry of the contract The society shall not be responsible for any damage wear and tear or loss during testing examination.
The sample shall be collected by the renderer on the expiry of stipulated period. The society shall in no way make arrangements to return the samples. The samples uncollected within 9 months after expiry of contract shall be forfeited by the society and no claim for their cost. etc. shall be entertained.

18. Samples not approved shall be collected by the unsuccessful tenderer. The society will not be responsible for any damage, wear and tear, or loss during testing, examination, etc. during the period these samples are retained. The uncollected samples shall be forfeited and no claim for their cost, etc. shall be entertains.

19. Supplies when received shall be subject to inspection to ensure whether they confirm to the specifications or with the approved samples. Where necessary one prescribed or practical tests shall be carried out in Society Laboratories, reputed. Testing house like Sri Ram Testing House, New Delhi and the like and the supplies will be accepted only where the articles conform to the standard of prescribed specifications as a result of such tests.

20. Drawl of samples : In case of tests, samples shall be drown in four sets in the presence of tenderer or his authorized representative and properly sealed in their presence. One such set shall be given to them, one or two will be sent to the laboratories and / or testing house and the third or fourth will be regained in the office for reference and record.

21. Testing Charges : Testing charges shall be borne by the society. In case urgent testing so desired to be arranged by the renderer or in case of test results showing that supplies are not up to the prescribed standards or specification, the testing charges shall be payable by the tenderer.

22. Rejection :
(i) Articles nor approved during inspection or testing shall be rejected and will have to be replaced by the tenderer at his own cost within the time fixed by the purchase officer.
(ii) If, however, due of urgencies of society work, such replacement either in whole or the part is not
considered feasible, the purchase officer after giving an opportunity to the tenderer of being heard,
shall for reasons to be recorded, deduct a suitable amount from the approved rates. The deduction so made shall be final.

23. The rejected articles shall be removed by the renderer within 3 days of intimation of rejection, after which purchase officer shall not be responsible for any loss, shortage or damage an shall have the right to dispose of such articles as he thinks fit, at the tenderer's risk and on his account.

24. The tenderer shall be responsible for the proper packing so as to avoid damage under normal conditions of transport, by sea rail road or air and delivery of the material in good condition to the consignee at destination. In the event of any loss, damage, breakage or leakage or any shortage to the tenderer shall be liable to make good such loss and shortage found at the checking/ inspection of the materials by the consignee, No extra cost on such account shall be admissible.

25. The contract for the supply can be repudiated at any time by the purchase officer, if the supplies are not made to his satisfaction after giving an opportunity to the tenderer of being head and recording of the reasons for repudiation.

26. Direct or indirect canvassing on the part of the tenderer or his representative will be disqualification.

27. Delivery Period :
(i) The tenderer whose tender is accepted shall arrange supplies within a period of 30 days but as per condition of patient, supply period may be reduce.
(ii) Extent of quantity – Repeat order : If the order are placed in excess of the qualities shown in the tender notice, the tenderer shall be bound to meet the required supply. Repeat order may also be placed on the rate and conditions given in the tender provided that the repeat orders are up to 50% of the quantity originally purchased and the period is not more one month from the date of expiry of last supply, If the tenderer fails to do so, the purchase officer shall be free to arrange for the balance supply by limited tender or otherwise and the extra cost incurred shall be recoverable from the tenderer.
(iii) If the purchase officer does not purchase any of the tendered articles or purchase less than the quantity indicated in the tender form, he tenderer shall not be entitled to claim any compensation.

28. Earnest Money :

Tender shall be accompanied by an earnest money without which tenders will not be considered. The should be deposited in either of the following forms in favour of Member Secretary, Rajasthan medical Relief Society, J.L.N. Hospital Ajmer.

(a) Bank Draft/Bankers Cheques of the scheduled Bank/F.D.R. N.S.C. duly pledged to member secretary.

(b) Refund of earnest money: The earnest money of unsuccessful tenderer shall be refunded soon after final acceptance of tender.

(c) Exemptions from earnest money: Firms such are registered with Director of Industries, Rajasthan need not furnish the amount of earnest money in respect of items of which they are registered as such, subject to their furnishing registration certificate in original or Photostat copy or a copy there of duly attested by any Gazetted Officer along with a competence certificate from the Director of Industries Rajasthan at the rate ½% of the estimated value of the under shown in NIT.

(d) The Central Society and Society of Rajasthan undertakings need not furnish any amount of earnest money.

(e) The earnest money/security deposit lying with the Department /Office in respect of other tenders awaiting approval of rejected or on account of contract being completed will not be adjusted towards earnest money/security money for the fresh tender. The earnest money may however, be taken into consideration in case tenders are re-invited.

29. <u>Forfeiture of Earnest Money :</u> The earnest money will be forfeited in the following cases.

(i) When tenderer withdraws or modifies the offer after opening of tender but before acceptance of tender.

(ii) When tenderer does not execute the agreement, if any, prescribed within the specified time.

(iii) When the tenderer does not deposit the security money after the supply order is given.

(iv) When he fails to commence the supply of the items as per supply order within the time prescribed.

30. <u>1) Agreement and Security Deposit :</u>

i) Successful tenderer will have to execute an agreement within a period 7 days or receipt of order and deposit security equal to 5% of the value of the stocks for which tenderer are accepted within 15 days from the date of dispatch of which the acceptance of the tender is communicated to him.

ii) The earnest money deposited at the time of tender will be adjusted towards security amount. The security amount shall in no case be less than earnest money.

iii) No interest will be paid by department on the security money.

iv) The forms of security money shall be as below : -

    a) Case/Bank Draft/Bankers Cheque / Bank F.D.R. duly pledged.

    b) Post – Office Saving Bank Pass Book duly pledged.

    c) National Saving Certificate, Defence Savings Certificates or any other script, investment under National Savings Scheme for promotion of small savings, if the same can be pledged. These Certificates shall be accepted at surrender value.

2) Firms registered with the Director of industries, Rajasthan in respect of stores for which they are registered subject to their furnishing the registration and prescribed competence certificate in original from the director of Industries or a Photostat copy or copy thereof duly attested by any Gazetted Officer will be partially exempted from earnest money and shall be security deposit at the rate of 1% of the estimated value of tender.

3) <u>Forfeiture of security Deposit:</u> Security amount in full or part may be forfeited in the following cases.

    a) When any terms and condition of the contract is breached.

    b) When the tender fails to make complete supply satisfactorily.

    c) Notice of reasonable time will be given in case of forfeiture of security deposit. The decision of the purchase Officer in this regard shall be final.

4) The expenses of completing and stamping the agreement shall be paid by the tenderer and the department shall be furnished free of charge with one executed stamped counter part of the agreement.

i) All goods must be sent freight paid through Railways or goods transport if goods are sent freight to pay, the freight together with department charges 5% of the freight will be recovered from the supplier's bill.

ii) R.R. should be sent under registered cover/through Bank only.

iii) In case supply is desired to be sent by the Purchase Officer by passenger train, the entire railway freight will be borne by the Department.

iv) Remittance charges on payment made shall be borne by the tenderer.

31. <u>Insurance</u>

i) The goods will be delivered at the destination godown in perfect condition. The supplier, if he so desires, may insure the value goods against loss by theft, destruction or damage by fire, flood, under exposure to whether or otherwise viz., (war rebellion riot etc.). The insurance charges will be borned by the supplier and society will not be required to pay such charges, if incurred.

32. <u>Payment</u>

i) Advance payment will not be made except in rare and special cases, In case of advance payment being made. it will be against proof of dispatch and to the extent as prescribed in financial powers by rail and prior inspection, if any. The balance if any will be paid on receipt of the consignment in good condition with the certificate to that effect endorsed on the inspection not given to the tenderer.

ii) Unless otherwise agreed between the parties payment for delivery of the stores will be made on submission of bill in proper form by the tenderer to the purchase officer in accordance with GF & AR All remittance charges will be borned by the tenderer.

iii) In case of disputed items, appropriate of the amount shall be withheld and will be paid on settlement of the dispute.

iv) Payment in case of those goods which need testing shall be made be only when such tests have been carried out, test results received conforming to the prescribed specification.

33. 1) i) The time specified for delivery in the tender form shall be deemed to be the essential of the contract and the successful tenderer shall arrange supplies within the period on receipt of the firm order from the purchase Officer.

ii)<u>Liquidated damage:</u> In case of extension in the delivery period with liquidated damages the recovery shall be made on the basis of following percentage of value of stores which the tender has failed to supply.

(a) Delay up to one fourth period of the prescribed delivery period 2.50 %

(b) Delay exceeding one fourth but not exceeding half of prescribed period 5.00 %

(c) Delay exceeding half but not exceeding three fourth of the prescribed period.7.50 %

(d) Delay exceeding three fourth of the prescribed period 10.00 %

2) Fraction of a day in reckoning period of delay in supplies shall be eliminated if it is less than half a day.

3) The maximum amount of liquidated charges shall be 10%

4) If the supplier requires an extension of time in completion of contractual supply on account of occurrence of any hindrance he shall apply in writing to the authority who has placed the supply order, for the same immediately on occurrence of the hindrance but not after the stipulated date of completion of supply.

5) Delivery period may be extended with or without liquidated damages if the delay in the supply of goods is on account of hindrance beyond the control of the tenderer.

34. <u>Recoveries :</u> Recoveries of liquidated, short supply, breakage, rejected articles shall ordinarily be made from bills. Amount may also be withheld to the extent of short supply, breakages, rejected articles and in case of failure in satisfactory replacement but the supplies along with amount of liquidated damages shall be recovered from his dues and security deposit available with the department. In case recovery is not possible recourse will be taken under Rajasthan PDR Act or any other law in force.

35. Tenderer must make their own arrangement to obtain import license, if necessary.

36. If a tenderer imposes condition which are in addition to or in conflict with the conditions mentioned herein his tender is liable to summarily rejection. In any case none of such condition will be deemed to have been accepted unless specifically mentioned in the letter of acceptance of tender issued by the Purchase Officer.

37. The Purchase Officer reserves the right to accept any tender not necessarily the lowest, reject any tender without assigning any reasons and accept tender for all or anyone or more of the articles for which tenderer has given or distribute items of stores to more than one firm/suppliers.

38. The tender shall furnish the following documents at the time of execution of agreement.

   i) Attested copy of partnership deed case of partnership firms.

   ii) Registration Number and year of registration in case partnership firm is registered with Register of Firms.

   iii) Address of residence and office, telephone number in case of sole proprietorship.

   iv)Registration issued by the Register of companies in case of a company.

39. For the supply of foreign items, the rates must be quoted in Indian currency.

40. The rare must be quoted including all accessories required or installation of equipment.

41. In case the items are free form custom duty, the tenderer should mention clause under which the items are free from custom duty. The proof of this should be attached.

42. The imported item in readily stock with the Indian Agent could be purchased in Indian Currency provided the certificate produced by the Indian agent to this effect that the cost quoted by them does not include customs duty in competitive.

43. Complete literature along with the catalogue and technical data must ne enclosed whit the tender to facilitate the technical expert in selection of items.

44. Performance report of the equipment by the institution whether it is already in use any where is to be attached with the tender form, if it is not practicable the supplier should enclose a list of institution where equipment have been supplied.

45. The approved supplier shall be liable to install and demonstrate the articles in this institution successfully, satisfactory within 30 days from the dispatch of the letter otherwise penalty will be imposed as per 35 (ii) The pre-requisite for installation, if any required the tenderer should submit the details of the same along with tender invariably.

46. The circuit diagram & Manual of the equipment will have to be provided along with the supply invariable by the supplier.

47. The tenderer should also submit a list of recommended spare consumables etc. for five years use along with the price for the regular working of equipment.

48. The tenderer will undertake the warranty of after sale service and availability of spare parts for the period of 3 years and services after 5 years and more along with availability of spare parts.

49. The tenderer will establish service engineering branch at nearby place to provide service in the case of failure of the unit within 24 hours on receipt of the information from competent authority.

50. Firm should submit warranty for minimum period of three years with spares pars and onwards comprehensive annual maintenance contract for five years @ 4% of FOB value for first year with 5% increase in subsequent year.

51. During the warranty and CMC period the fault will be attended within a period of 48 hours otherwise a penalty of Rs. 200/- per day will have to be paid.

52. Notwithstanding anything contained herein above the undersigned reserves the right to alter, waiver of modify any of the above conditions in any particular specific case for special reasons in accordance with the special circumstances/condition of the case mutually or otherwise in the public interest or service.

53. If any dispute arise out of the contract with regard to the interpretation, meaning and breach of die terms of the contract the matter shall be referred to by the parties to the Head of the Department (Member Secretary, J.L.N. Hospital Ajmer.) who will appoint his officer as the sole arbitrator of the dispute who will not be related to this contract and whose decision shall be final.

54. All legal proceedings, if necessary, arise to institute may be any of the parties (Society or Contractor) shall have to be lodged in courts situated in Ajmer and not elsewhere along with the price for the regular working of equipment.

55. Fall clause the prices charged for the stores supplied under the contract by the contractor shall in no event exceed the lowest price at which the contractor sells the stores or offers the shall the stores of identical description to any person/organization including the purchaser or any department of the Central Govt,/ or any Dept. of State Govt. or any statutory under taking of the central or state Govt. as the case may be during the period till performance of all supply orders placed during the currency of the rate contract is completed.

    If at any time during the said period the contractor reduces the sale price, sells or offers to sell such stores to any organization including the purchase or any Dept. of Central Govt. or any Dept. of State Govt. or any statutory undertaking of the Central or State Govt. as the case may be at a price lower than the price changeable under the contract he shall forth with notify such reduction or sale or offer to sale to the Member Secretary, Rajasthan Medical Relief Society, J.L.N Hospital Ajmer and the price payable under the contract for stores supplied after the date or coming into force of such reduction or sale or offer to sale shall stand correspondingly reduced.

    The contractor shall furnish the following certificate along with the bill for payment of supplies made against the rate contract.

    "I/we" certify that there has been no reduction in sale price of the stores of description identical to the stores supplied to the Govt. under the contract here in and such stores have not been offered/ sold by me /us to any organization including the purchaser or nay dept. of State Govt. or any statutory undertaking of the Central Govt. or state Govt. as the case may be up to the date of bill/ the date of completion of supplies against all supply orders placed during the currency of the contract at prices lower than the price charged of under the contract.

56. When the Supplier is unable to complete the supply within the prescribed of Extended period, the purchasing officer shall be entitled to purchase from other sources. The recovery of such loss or damage shall be made from the original supplier. The purchase officer will be at library to initiate action to purchase the items at the supplier's risk and cost.

57. Legal proceeding if any arising out of the tender shall have to be lodged in Court Jurisdiction of Ajmer.

58. Purchase officer means member secretary or any person authorized by member secretary.

                                          Superintendent
                              ASSOCIATED GROUP OF HOSPITAL,
                                              Ajmer