

**Request for Proposals**

**For**

**Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for Bruhat Bengaluru Mahanagara Palike**

**Volume – I**

**Instructions to Bidders and Scope of Work**

NIT Number: \_\_\_\_\_\_\_\_\_\_\_\_\_; Dated: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Bruhat Bengaluru Mahanagara Palike**

**Head Office, N.R. Square, Bengaluru 560002**

**Ph. No.: \_\_\_\_\_\_\_\_\_\_\_\_\_; E-mail:** [**\_\_\_\_\_\_\_\_\_\_\_\_.com**](mailto:smartcityindore16@gmail.com)

**Website: www.bbmp.gov.in**

**NOTICE INVITING TENDER**

NIT No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Bruhat Bengaluru Mahanagara Palike (BBMP) invites online bids from eligible bidders through [www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in) for “**Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for Bruhat Bengaluru Mahanagara Palike**”.

The details are as under.

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Event’s Name** | **Information** |
| 1 | Estimated Cost of the work | Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_ (Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) |
| 2 | Tender document Fee | Rs. \_\_\_\_\_\_\_\_\_\_ (Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)  through Online e-Tendering Payment Gateway only |
| 3 | Earnest Money Deposit (EMD) | Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) |
| 4 | Last date for sending pre-bid queries | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ till \_\_\_\_\_\_\_\_\_ hrs.  at [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](mailto:smartcityindore16@gmail.com) |
| 5 | Date, Time & Place of Pre-bid Meeting | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at \_\_\_\_\_\_\_\_\_\_hrs. Venue: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 6 | Last date for Online Purchase of Tender Document | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 7 | Last date of Online Submission of Bids | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ till \_\_\_\_\_\_\_\_\_\_ hrs. |
| 8 | Last date of EMD + Hard Copy (Pre- Qualification and Technical Proposal)  Submission of Bids | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ till \_\_\_\_\_\_\_\_\_\_\_ hrs. |
| 9 | Date & Time for Opening of Pre- Qualification and Technical Proposal | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at \_\_\_\_\_\_\_\_\_\_\_\_ hrs. |
| 10 | Date & Time for Opening of Financial Proposals | To be Announced. |
| 11 | Project Award Criteria | Through Quality and Cost Based Selection Process (70:30) |

**Commissioner**

**Bruhat Bengaluru Mahanagara Palike**

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#### DISCLAIMER

The information contained in this Request for Proposal document (the “RFP”) or subsequently provided to Bidder(s), whether verbally or in documentary or any other form by or on behalf of the Bruhat Bengaluru Mahanagara Palike (the “Authority”) or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an Agreement and is neither an offer nor invitation by the Authority to the prospective Bidders or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in making their financial offers (Bids) pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Authority in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This RFP may not be appropriate for all persons, and it is not possible for the Authority, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in the Bidding Documents, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

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

The Authority, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way for participation in this Bid Stage.

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

The issue of this RFP does not imply that the Authority is bound to select a Bidder or to appoint the Successful Bidder or Contractor, as the case may be, for the Project and the Authority reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

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

#### Definition of Terms

1. **Agreement/Contract** means; the Contract entered into by the parties with the entire documentation specified in the RFP.
2. **Applicable Law(s)** means**;** any statute, law, ordinance, notification, rule, regulation, judgment, order, decree, bye-law, approval, directive, guideline, policy, requirement or other governmental restriction or any similar form of decision applicable to the relevant party and as may be in effect on the date of the execution of this Agreement and during the subsistence thereof, applicable to the Project.
3. **Authority** means; the Bruhat Bengaluru Mahanagara Palike and the project shall be executed in Bengaluru and shall be owned by Bruhat Bengaluru Mahanagara Palike.
4. **Contract Value** means; the price payable to the successful bidder under this Contract for the full and proper performance of its contractual obligations
5. **Document** means; any embodiment of any text or image however recorded and includes any data, text, images, sound, voice, codes, databases or any other electronic documents as per IT Act 2000.
6. **Service level agreement (SLA)** is the service level and performance commitment of a System Integrator to AUTHORITY that defines the performance output and availability of the deliveries and installations under this RFP Requirements.
7. **Consortium** means; the entity named in the contract for any part of the work has been sublet with the consent in writing of the AUTHORITY and the heirs, legal representatives, successors and assignees of such person.
8. **OEM** means; the Original Equipment Manufacturer of any equipment / system / software / product which are providing such goods to the AUTHORITY under the scope of the RFP.
9. **Services** means; the work to be performed by the successful bidder pursuant to the RFP and to the contract to be signed by the parties in pursuance of any specific assignment awarded by the AUTHORITY.
10. **Transfer Point**; means the designated places where collected waste by Primary Collection Vehicles is transferred to Secondary Transport Vehicles.
11. **Landfill** means; the designated area located in the outskirts of the city at Bellahalli where solid waste is ultimately taken and dumped, after segregation of plastic and other non-biodegradable matter at transfer stations.
12. **Vehicle Tracking and Monitoring Solution (VTMS)** refers to the existing application that is being used by the Authority to monitor movement of SWM vehicles.



**Acronyms**

| **Terms** | **Meaning** |
| --- | --- |
| **ABD** | Area Based Development |
| **API** | Application program interface |
| **BBMP** | Bruhat Bengaluru Mahanagara Palike |
| **BEC** | Bid Evaluation Committee |
| **CCTV** | Closed Circuit Television Camera |
| **CFO** | Chief Finance Officer |
| **COTS** | Commercial Off-The-Shelf |
| **CS** | Company Secretary |
| **CSP** | Cloud Service Provider |
| **DC** | Data Center |
| **EMD** | Earnest Money Deposit |
| **FCC** | Federal Communications Commission |
| **GCC** | General Contract Conditions |
| **GIS** | Geographical Information System |
| **GoI** | Government of India |
| **GoK** | Government of Karnataka |
| **GPRS** | General Packet Radio Service |
| **GPS** | Global Positioning System |
| **GSM** | Global System for Mobile communication |
| **GST** | Goods & Services Tax as applicable in India |
| **HHU** | Hand-Held Unit |
| **HTTP** | Hypertext Transfer Protocol |
| **ICCC** | Integrated Command and Control Centre |
| **ICT** | Information and Communication Technology |
| **IGMP** | Internet Group Management Protocol |
| **ISO** | International Organization for Standardization |
| **ISWM** | Integrated Solid Waste Management |
| **ITMS** | Intelligent Transport Management System |
| **LED** | Light Emitting Diode |
| **LOA** | Letter of Acceptance |
| **MIS** | Management Information System |
| **MoHUA** | Ministry of Housing and Urban Affairs, Government of India |
| **NFS** | Network File System |
| **NIT** | Notice Inviting Tender |
| **O&M** | Operations and Maintenance |
| **OEM** | Original Equipment Manufacturer |
| **OGC** | Open Geospatial Consortium |
| **OSPF** | Open Shortest Path First |
| **OSP** | Other Service Provider |
| **PBG** | Performance Bank Guarantee |
| **PoC** | Proof of Concept |
| **POE** | Power over Ethernet |
| **PSU** | Public Sector Undertaking |
| **QR code** | Quick Response code |
| **RAID** | Redundant Array of Independent Disks |
| **RFID** | Radio Frequency Identification |
| **SaaS** | Software as a Service |
| **SCM** | Smart City Mission |
| **SCP** | Smart City Proposal |
| **SI** | System Integrator |
| **SLA** | Service Level Agreement |
| **SPV** | Special Purpose Vehicle |
| **SWM** | Solid Waste Management |
| **TCB** | Total Cost of Bid |
| **TCV** | Total Contract Value |
| **TDS** | Tax Deducted at Source |
| **TERM** | Telecom Enforcement Resource Monitoring |
| **UAT** | User Acceptance Testing |
| **ULB** | Urban Local Bodies |
| **VAT** | Value Added Tax |
| **VPN** | Virtual Private Network |
| **VTMS** | Vehicle Tracking and Monitoring System |
| **Wi-Fi** | Wireless Fidelity |

**Instructions to Bidders**

# Instructions to Bidders

## General Information and Guidelines

## RFP Format

The Request for Proposal (RFP) consists of 2 (Two) Volumes viz.

#### RFP Volume I: Instructions to Bidders & Scope of Work

The Volume I contains;

* + Instructions with respect to the bid process management, technical evaluation framework, and the technical & financial forms.
  + Information regarding the Project Implementation Plan, business requirements/ applications to be covered and corresponding process related documentation, scope of work for the selected bidder and functional requirements.

#### RFP Volume II: Master Service Agreement

The Volume II contains; the contractual, legal terms & conditions applicable for the proposed engagement.

## Purpose

Development, Implementation and Operation & Maintenance of SWM Fleet Management System for Bruhat Bengaluru Mahanagara Palike (BBMP)”. This document provides information to enable the bidders to understand the broad requirements to submit their Proposals. The detailed scope of work is provided in [Section 2.0](#_bookmark44) of this RFP document.

## The Bidder

1. The Bidder for participation in the Selection Process, may be a single entity or a group of entities (the “Consortium”), coming together to execute the project. The term 'Bidder' used herein would apply to both a single Entity and a Consortium.
2. No Member at any given point of time, may assign or delegate its rights, duties or obligations under the Agreement/ Contract except with prior written consent of AUTHORITY.
3. No bidder applying individually, or as a member of a Consortium, as the case may be, can be member of another consortia bidding for the project.
4. In the event the Bidder is a Consortium, it shall, comply with the following additional requirements:
   1. Number of members in a consortium shall not exceed 2 (Two) including the Lead Member
   2. The Members of the Consortium shall nominate one member as the Lead Member
   3. The Members of the Consortium shall be responsible for successful implementation of the project throughout the terms of the contract.
   4. The Lead Member shall be authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Members respectively from time to time in the response to this RFP.
   5. The Members of the Consortium shall submit a declaration as set out in [Annexure](#_bookmark78) [1.](#_bookmark78)5 inter alia consisting of the following:
      * Undertake that each of the members of the Consortium shall have an independent, definite and separate scope of work which was allocated as per each member’s field of expertise
      * Commit to the profit and loss sharing ratio of each member
      * Commit to the scope of work, rights, obligations and liabilities to be held by each member; specifically commit that the Lead Member shall be answerable on behalf of other members for the performance of obligations under this Agreement,
      * Provide a brief description of the roles and responsibilities of individual members; and clearly define the proposed administrative arrangements (organization chart) for the management and execution.
   6. The lead bidder shall be jointly & severally responsible for complete scope, whereas partner/s shall be severally responsible only for its/their respective scope. Any change of a Consortium Member other than the Lead Member can be done only under extreme circumstances such as non-performance of the Consortium member, insolvency or bankruptcy of the Consortium member, which shall be done only with the prior written approval of AUTHORITY. Provided that in the event of any such approved change of Consortium member, the new member (company) replacing outgoing Consortium member shall have same or higher financial, technical and legal qualifications as the outgoing member, and to the satisfaction of BBMP. In the event AUTHORITY does not grant approval for the change of the Consortium member other than the Lead Member or suitably qualified replacement member (companies) are not available/ found, the exit of such Consortium member shall constitute a breach of the Contract.
   7. All members of the consortium are required to follow the highest level of work ethics, if any member of the consortium has a Conflict of Interest or indulges in Prohibited Practices; the whole Consortium is liable to be disqualified. Further, in the event any entity has been barred by the Central Government, any State Government, a statutory authority or a public sector undertaking, as the case may be, from participating in any project or bid, and the bar subsists as on the date of Last Date of Submission, it would not be eligible to submit a Proposal either by itself or as part of a Consortium.

## Sub-Contracting

The SI may use the services of a sub-contractor to leverage their specialized experience in respect of following tasks/areas:

1. Establishment of network infrastructure
2. Installation and maintenance of field devices (GPS receivers, CCTV cameras Sensors, etc.)
3. Helpdesk services
4. Civil Work required for the project

However, SI shall remain solely responsible for and liable for successful delivery of Deliverables and accomplishment of the Project

## Completeness of Bid

The Bid should be complete in all respects. Failure to furnish all information required by the RFP document or submission of a proposal not substantially responsive to the RFP document in every respect will be at the Bidder's risk and may result in rejection of its Bid. The Authority’s decision would be final and no further communication will be entertained in this regard.

## Proposal Preparation Costs

1. The bidder shall submit the bid at its own cost and expenses. AUTHORITY shall not be held responsible for any cost incurred by the bidder. Submission of a bid does not entitle the bidder to claim any cost and rights over AUTHORITY.
2. All materials submitted by the bidder shall be the absolute property of AUTHORITY and no copyright etc. shall be entertained by AUTHORITY; however, all information provided as a part of our proposal shall be confidential, and shall not be shared to any third party without the prior consent of the Bidder.

## Pre-bid Meeting and Queries

1. AUTHORITY will host a Pre-Bid meeting as per the date mentioned in the NIT sheet. **The representatives, limited to 2**, of the interested organizations may attend the pre-bid conference at their own cost. The purpose of the conference is to provide bidders with information regarding the RFP and the proposed solution requirements in reference to the RFP. Pre-Bid meeting will also provide each bidder with an opportunity to seek clarifications regarding any aspect of the RFP and the project.
2. All Bidder shall e-mail their queries to **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the form and manner as prescribed in [Annexure 5.](#_bookmark92) The response to the queries will be published on [**www.eproc.karnataka.gov.in**.](http://www.eproc.karnataka.gov.in.) No telephonic queries will be entertained thereafter. This response of AUTHORITY shall become integral part of RFP document.
3. AUTHORITY shall endeavor to respond to the questions raised or clarifications sought by the Bidders. However, AUTHORITY reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this clause shall be taken or read as compelling or requiring AUTHORITY to respond to any question or to provide any clarification.
4. AUTHORITY may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. All clarifications and interpretations issued by AUTHORITY shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by AUTHORITY or its employees or representatives shall not in any way or manner be binding on AUTHORITY.

## Amendment of RFP Document

* 1. All the amendments made in the document would be published on the e-Tendering Portal ([www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in)) and shall be part of RFP.
  2. The Bidders are advised to visit the e-tendering portal on regular basis to check for necessary updates. AUTHORITY also reserves the right to amend the dates mentioned in this RFP.

## Supplementary Information to the RFP

If AUTHORITY deems it appropriate to revise any part of this RFP or to issue additional data to clarify an interpretation of provisions of this RFP, it may issue supplements to this RFP. Any such corrigendum shall be deemed to be incorporated by this reference into this RFP.

## BBMP’s Right to Terminate the Process

AUTHORITY may terminate the RFP process at any time and without assigning any reason. AUTHORITY reserves the right to amend/edit/add/delete any clause of this RFP Document. This will be informed to all and will become part of the RFP and information for the same would be published on the e-Tendering portal.

## Site Visit and Verification of Information

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

## Key Requirements of the Bid

## RFP Document/Tender Fee

RFP can be downloaded from the website www.eproc.karnataka.gov.in. RFP Document Fee of Rs. 20,000 (Rupees Twenty Thousand Only) shall be paid through online e- Tendering Payment Gateway only. The RFP document fee shall be non-refundable.

## Earnest Money Deposit (EMD)

* + 1. In terms of this RFP, a Bidder is required to submit EMD of Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Rupees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Only) in the form of DD / FDR / eFDR issued by any nationalized / scheduled commercial bank in favour of “Commissioner, BBMP”, payable at Bengaluru.
    2. Unsuccessful Bidders’ EMD will be returned after award of the contract and signing of the contract agreement. The EMD of the successful bidder would be returned upon submission of Performance Bank Guarantee (for an amount equal to 5% of Total Contract Value) in the format provided in [Annexure 8](#_bookmark95) of the RFP. The EMD should be valid for a period of 180 days from the date of submission of bid document.
    3. No interest will be paid by AUTHORITY on the EMD amount.
    4. The Bid submitted without EMD will be summarily rejected.
    5. The EMD may be forfeited:
       1. If a Bidder withdraws his bid or increases his quoted prices during the period of bid validity or its extended period, if any.
       2. In case of a successful bidder, if the Bidder fails to sign the contract in accordance with the terms and conditions of this RFP, despite deviations being adequately considered by the Authority.
       3. If during the bid process, a bidder indulges in any such deliberate act as would jeopardize or unnecessarily delay the process of bid evaluation and finalization.
       4. If, during the bid process, any information is found false/fraudulent/mala fide, and then AUTHORITY shall reject the bid and, if necessary, initiate action.
    6. The decision of AUTHORITY regarding forfeiture of the EMD shall be final and binding upon all the bidders.

## Bid Submission Instructions



## Bid Submission Format

The entire Bid shall be submitted strictly as per the format specified in this RFP. Bids with any deviation from the prescribed format are liable for rejection.

## Bid Submission Instructions

1. Complete bidding process will be online (e-Tendering) in three cover system. Hard copy submission of bids shall be in accordance to the instructions given in the Table below:

|  |  |  |
| --- | --- | --- |
| **Particulars** | | **Instructions** |
| **Cover 1** | | Proof of submission of RFP Document Fee and Scanned copy of EMD |
| **Cover 2:**  **Pre-Qualification Proposal** | | The Pre-Qualification Proposal shall be prepared in accordance with the requirements specified in this RFP and the formats are prescribed in [Annexure 1](#_bookmark72) of the RFP  Pre-Qualification Proposal should be submitted through online bid submission process and also in Hard Copy as mentioned in the NIT. |
| **Technical Proposal** | The Technical Proposal shall be prepared in accordance with the requirements specified in this RFP and the formats are prescribed in in [Annexure 2](#_bookmark79) of the RFP  Technical Proposal should be submitted through online bid submission process and also in Hard Copy as mentioned in the NIT. |
| **Cover 3:**  **Financial Proposal** | The Financial Proposal shall be submitted in accordance with the requirements specified in this RFP and in the format prescribed in [Annexure 3](#_bookmark87) of the RFP.  Financial Proposal shall be submitted **online only**. |

***Note: AUTHORITY will conduct the bid evaluation based on documents submitted through online e-tendering portal.***

1. **The following points shall be kept in mind for submission of bids;**
2. AUTHORITY shall not accept delivery of Bids in any manner other than that specified in this RFP. Bid delivered in any other manner shall be treated as defective, invalid and rejected.
3. The Bidder is expected to price all the items and services sought in the RFP and proposed in the technical proposal. The Bid should be comprehensive and inclusive of all the services to be provided by the Bidder as per the scope of work and in accordance with the terms and conditions as set out in the Contract, without any exclusions / omissions / exceptions. Price to be inclusive of all adjunct / ancillary services and works, whether specifically mentioned or not
4. AUTHORITY may seek clarifications from the Bidder on the technical proposal. Any of the clarifications by the Bidder on the technical proposal should not have any commercial implications. The Financial Proposal submitted by the Bidder should be inclusive of all the items in the technical proposal and should incorporate all the clarifications provided by the Bidder on the technical proposal during the evaluation of the technical offer.
5. Technical Proposal shall not contain any financial information.
6. If any Bidder does not qualify the pre-qualification criteria stated in [Section 1.4.5](#_bookmark31) of this RFP, the technical and financial proposals of the Bidder shall not be opened. Similarly, if the Bidder does not meet the technical evaluation criteria, the financial proposal of the Bidder shall be unopened in the e-Tendering system.
7. It is required that all the proposals submitted in response to this RFP should be unconditional in all respects, failing which AUTHORITY reserves the right to reject the proposal.

## Late Bid and Bid Validity Period

Bids received after the due date and the specified time (including the extended period if any) for any reason whatsoever, shall not be entertained and shall not be opened in the e-Tendering system. The validity of the bids submitted before deadline shall be till 180 days from the date of submission of the bid.

## Modification and Withdrawal of Bids

No bid shall be withdrawn in the interval between the deadline for submission of bids and the expiration of the validity period specified by the Bidder on the bid form. Entire EMD shall be forfeited if any of the Bidders withdraw their bid during the validity period.

## Non-conforming Bids

A Bid may be construed as a non-conforming proposal and ineligible for consideration:

1. If it does not comply with the requirements of this RFP
2. If the Bid does not follow the format requested in this RFP or does not appear to address the particular requirements of AUTHORITY.

## Language of Bids

The Bids should be submitted in English language only. If any supporting documents submitted are in any language other than English, then the translation of the same in English language is to be duly attested by the bidder and summited with the bid, and English translation shall be validated at AUTHORITY’s discretion.

## Authentication of Bid

1. Authorized person of the bidder who signs the bid shall obtain the authority letter from the bidder, which shall be submitted with the Bid. All pages of the bid and its annexures, etc. shall be signed and stamped by the person or persons signing the bid.
2. The Bidder should submit a Power of Attorney as per the format set forth in [Annexure 6,](#_bookmark93) authorizing the signatory of the Bid to commit on behalf of the Bidder.

## Acknowledgement of Understanding of Terms

By submitting a Bid, each Bidder shall be deemed to acknowledge that he has carefully read all sections of this RFP, including all forms, schedules, annexure, corrigendum and addendums (if any) hereto, and has fully informed itself as to all existing conditions and limitations.

## Evaluation Process

1. AUTHORITY will constitute a Bid Evaluation Committee (BEC) to evaluate the responses of the bidders
2. The BEC constituted by AUTHORITY shall evaluate the responses to the RFP and all supporting documents / documentary evidence. Inability to submit requisite supporting documents / documentary evidence, may lead to rejection.
3. The decision of the BEC in the evaluation of responses to the RFP shall be final. No correspondence shall be entertained outside the process of negotiation/ discussion with the Committee.
4. The BEC may seek clarifications from any bidder, as necessary proposals and may visit Bidder’s client site to validate the credentials/ citations claimed by the bidder.
5. Each of the responses shall be evaluated as per the criteria and requirements specified in this RFP.

## Bid Opening

1. Total transparency shall be observed and ensured while opening the Bids. All Bids shall be opened in the presence of the Bidder’s representatives who choose to attend the Bid opening sessions on the specified date, time and address.
2. AUTHORITY reserves the rights at all times to postpone or cancel a scheduled Bid opening.
3. Bid opening shall be conducted in 2 (Two) Stages;
   * Stage 1 - RFP Document fee & Bid Security/EMD, Pre-Qualification Proposal and Technical Proposal
   * Stage 2 - Financial Proposal (online)
4. The venue, date and time for opening the Pre-qualification Proposal are mentioned in the Tender Notice in the RFP Volume I. The date and time for opening the Financial Proposals would be communicated to the qualified bidders.
5. The Bidder’s representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for AUTHORITY, the bids shall be opened at the same time and location on the next working day. In addition to that, if there representative of the Bidder remains absent, AUTHORITY will continue process and open the bids of the all bidders.
6. During Bid opening, preliminary scrutiny of the Bid documents shall be made to determine whether required EMD has been furnished, whether the Documents have been properly signed, and whether the bids are generally in order.

## Evaluation of Pre-Qualification Proposals

1. Authority shall open Cover 1 marked “RFP Document Fee and Earnest Money Deposit (EMD)”. If the contents of the **Cover 1** are as per requirements of the RFP, AUTHORITY shall open **Cover 2** marked “Pre-Qualification Proposal”. ***Each of the Pre-Qualification condition mentioned in*** [***Section 1.4.5***](#_bookmark31) ***of the RFP is MANDATORY***. In case the Bidder does not meet any one of the conditions, the bidder will be disqualified.
2. The Pre-Qualification proposal **MUST** contain all the documents in compliance with instructions given in the [Annexure 1.](#_bookmark72)
3. Response to the Pre-Qualification Requirements shall be evaluated in accordance with the requirements specified in this RFP and in the manner prescribed in [Section 1.4.5](#_bookmark31) of the RFP.

## Evaluation of Technical Proposal

The evaluation of the Technical Proposals will be carried out in the following manner:

1. Bidders' technical proposals will be evaluated as per the requirements and guidelines specified in the [Annexure 2](#_bookmark79) and technical evaluation criteria as mentioned in [Section 1.4.6](#_bookmark33) of the RFP.
2. Bidders shall make the technical presentation and showcase proposed products to Authority as per the agenda mentioned in [Section 1.4.6](#_bookmark33) of the RFP.
3. Each Technical Proposal shall be assigned a technical score out of a maximum of 100 points. (Refer Section [1.4.6](#_bookmark33) of the RFP). In order to qualify for the opening of financial proposal, the Bidder must get a minimum overall technical score of 60 (Sixty) points.
4. The Bidders are required to submit all required documentation in support of the evaluation criteria specified (e.g. Detailed Project citations and copy of work order, client contact information for verification, and all others components) as required for technical evaluation.
5. AUTHORITY shall inform to the technically shortlisted Bidders about the date and venue of the opening of the financial proposals.

## Financial Proposal Evaluation

1. Financial Proposals for the technically qualified bidders will then be opened online on the notified date and time.
2. Financial Proposals that are not meeting the condition mentioned in [Annexure 3](#_bookmark87) shall be liable for rejection.
3. Total Cost of Bid (TCB) shall be calculated based on the financial format given in [Annexure 3.2](#_bookmark90) of the RFP.
4. Arithmetical errors will be rectified on the following basis:
   1. If there is a discrepancy between the unit price and the total price (in section 3.2.2) that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail.
   2. If there is an error in a total corresponding to the addition or subtraction of subtotals (in section 3.2.2) and the total mentioned under section 3.2.1, the subtotals shall prevail and the grand total shall be corrected
   3. If the supplier does not accept the correction of errors, its bid will be rejected and its bid security may be forfeited.

## Pre-Qualification Criteria

Each bidder shall meet the following prequalification criteria:

|  |  |  |  |
| --- | --- | --- | --- |
| **S No** | **Basic**  **Requirement** | **Specific Requirements** | **Documents Required** |
| **PQ1** | Legal Entity | The Sole Bidder  **OR**  **Consortium**   * Maximum 2 companies are allowed in   a consortium including Lead Member   * Lead Member should be registered in India under Companies Act 1956/2013/ LLP Act 2008 or as amended and should have been in operation for at least 7 years as on date of submission of the bid * Consortium member either should be registered in India under Companies Act 1956/2013/ LLP Act 2008 or as   Amended | * Copy of Certificate of Incorporation / Registration under Companies Act, 1956/2013 * Consortium agreement clearly stating the roles and responsibilities of each member |
| **PQ2** | Turnover | The Sole Bidder should have average annual Turnover of **INR 30 Crore** for last 3 audited financial years (2016-17, 2017-18 and 2018-19) from the business area of ICT Infrastructure / IT System Integration Services/ITeS.  In case of consortium:   * The Lead bidder should have minimum average annual turnover of **INR 30 Cr** from the business area of ICT Infrastructure / IT System Integration Services for last 3 audited financial years (2016-17, 2017-18 and 2018-19). * Other consortium member should have minimum average annual   turnover of **INR 25 Cr.** from the business area of ICT Infrastructure / IT System Integration Services/ITeS for last 3 audited financial years  (2015-16, 2016-17, 2017-18)**.** | * Audited and Certified Balance Sheet and   Profit/Loss Account for the last 3 (Three) Financial Years.   * Certificate from the Statutory Auditor on turnover details from the “business areas” over the last   3 (Three) audited financial years 2016-17, 2017-18 and 2018-19 |
| **PQ3** | Net Worth | The Sole Bidder or the Lead Member of consortium should have positive net worth as per the audited consolidated financial statements in each of the last 3 (Three) financial years 2016-17, 2017-18 and 2018-19 | Certificate from the Statutory Auditor on net worth. |
| **PQ4** | Blacklisting | As on date of submission of the proposal, the Sole Bidder or the Lead Member and each members of the consortium member, in case of a Consortium, shall not be under a declaration of ineligibility for corrupt or fraudulent practices with any of the State government/ Central Government / semi government / PSU / Municipal agencies in India at the time of  submission. | Undertaking by the authorized signatory as per the format given as [Annexure 4](#_bookmark91) |
| **PQ5** | Certifications | The Sole Bidder or the Lead Member of consortium should possess any 2 (two) of the below Certifications of ISO which are valid at the time of bid submission:   * ISO 9001:2008 or Higher for Software Development / System Integration * ISO 20000:2011 for IT Service Management * ISO/IEC 27001:2013 for   Information Security Management System  AND   * CMMI Level 3 or Higher for Software Development (Mandatory) | Valid Copy of certificates on the name of the Sole Bidder or Lead Member in case of consortium |
| **PQ6** | Local Presence | The Sole Bidder or the Lead Member of consortium, in case of a Consortium, should have office in Bengaluru or should furnish an undertaking that the same would be established within 60 days of signing the contract, if project is awarded. | List and address of offices in Madhya Pradesh with GST Registration  OR  Undertaking from authorized signatory to open the local office with GST registration, within 60 days of signing the contract, if  project is awarded |
| **PQ7** | Employees | The Sole Bidder or the Lead Member of consortium should have at least 200 employees in Technical role on their payroll for the proper execution of the project. | Declaration/Undertaki ng by an authorized signatory of the company needs to be submitted in this  regard. |
| **PQ 8** | Experience | The Sole Bidder or the Lead Member of consortium should have completed / in progress at least one project of providing e-governance solution during last 5 years. | Submit Copies of Work Order or Agreements along with completion certificates of projects executed during 5 years earlier from the date of submission of  bid. |

### Technical Evaluation Criteria

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Technical Evaluation Criteria** | **Points** |
| TQ.1.0 | Company’s Financial Profile | 15 |
| TQ1.1 | The turnover from the business area of ICT Infrastructure / IT System Integration Services/ITeS of the Sole Bidder/Lead Member of  Consortium Rs. 30 Cr and above: |  |
| TQ2.0 | Relevant Experience | 35 |
| TQ2.1 | The Sole Bidder or any Member in case of consortium should have completed / ongoing e-governance projects as a System Integrator in last 7 (Seven) financial years (as on the last date of bid submission). (1 Project with cost not less than Rs. 8 Crore = 15 marks, : with every additional project with cost not less than Rs. 5 Crore = 2.5 marks,  maximum 5 marks) | 20 |
| TQ2.2 | The Sole Bidder or Lead Member or any member of its consortium  should have experience of large successful Go-Live/ Completed/ongoing project (not less than Rs. 5 Crore cost) during the last 7 financial years (as on the last date of bid submission). The project should include any of 2 (two) components of the following:   * Command Control Center * Work Flow Management Solution * Operation and maintenance services as a SI * Urban/Metropolitan Vehicle Tracking System * Solid Waste Management Solution   (1 Project = 10 marks, every additional project = 2.5 marks, maximum 5 marks) | 15 |
| TQ 3.0 | CMMi & ISO Certifications | 5 |
| TQ3.1 | CMMi Level 5 + ISO 9001:2008 / ISO 20000:2011 / ISO/IEC  27001:2013 (Any 2 ISO Certifications mandatory) | 5 |
| TQ3.2 | CMMi Level 3 + ISO 9001:2008 / ISO 20000:2011 / ISO/IEC  27001:2013 (Any 2 ISO Certifications mandatory) | 3 |
| TQ 4.0 | Proposed Key Personnel (Requirement is provided in Section 1.4.7 in  the RFP Volume I) | 30 |
| TQ 4.1 | Project Manager | 10 |
| TQ 4.2 | Business Analyst | 6 |
| TQ 4.3 | Solution Architect | 6 |
| TQ 4.4 | Database Expert | 4 |
| TQ 4.5 | Application Development Lead | 4 |
| TQ 5.0 | Technical Presentation | 15 |
|  | * Understanding of the project, Approach & Methodology for Implementation (should cover Solution Architecture, scalability, Interoperability and modularity features considering the future expansion of the project and the detailed project execution plan) (5 Marks) * Strategy for Cloud, SLA and System Security (5 Mark) * Evaluation of Functionalities pertaining to the proposed solution (5 Marks) | To be awarded by  Bid Evaluation Committee |
|  | **Total** | **100** |

Note: (a) Projects executed for bidder’s own or bidder’s group of companies shall not be considered.

(b) #The Technical presentation shall be made by the Project Manager only as per the details provided in the CVs.

Bidder who meets the minimum pre-qualification criteria shall be called for Technical Presentation (maximum duration of 40 Minutes) with respect to above technical evaluation criteria during Technical Bid Evaluation. Date, Time and Venue for the Technical Presentation will be informed later to qualified bidders. AUTHORITY reserves right to enquire bidder’s customer where such a similar project execution has taken place.

### Team Evaluation Matrix

|  |  |  |  |
| --- | --- | --- | --- |
| **S.**  **No.** | **Resource Role** | **Maximum Marks** | **Other Requirements** |
| 1. | Project Manager | 10 | a) Educational Qualification:   * BE / B Tech/MCA/MSc (CS/IT) or Equivalent = 4 Marks * BCA / B.Sc.(CS/IT)or Equivalent = 2 Marks * Else 0   b) Work experience in the capacity of Project/ Program Manager in ICT implementation Projects:   * >=10 years = 3 Marks * >=8 and < 10 years = 2 Marks * >=5 and < 8 years = 1 Mark * Else 0   c) Project/Program management Experience in ICT implementation Project of value > Rs. 8 Crores:   * >= 3 Projects = 3 Marks * 2 Projects = 2 Marks * 1 Project = 1 Mark * Else 0 |
| 2. | Business Analyst | 6 | a) Educational Qualification:   * BE/B Tech/MCA/MSc (CS/IT) or Equivalent = 3 Marks * BCA/B.Sc.(CS/IT) or Equivalent = 2 Marks * Else 0   b) Work experience in the capacity of Business Analyst for project value more than Rs. 3 Cr.   * >=5 years = 3 Mark * >=3 and <5 years =2 Mark * Else 0 |
| 3. | Solution Architect | 6 | a) Educational Qualification:   * BE/B Tech/MCA/MSc (CS/IT) or Equivalent = 3 Marks * BCA/B.Sc.(CS/IT) or Equivalent = 2 Marks * Else 0   b) Work experience in the capacity of Solution Architect for project value more than Rs. 3 Cr.   * >=5 years = 3 Mark * >=3 and <5 years =2 Mark * Else 0 |
| 4. | Database Expert | 4 | a) Educational Qualification:   * BE/B Tech/MCA/MSc (CS/IT) or Equivalent = 2 Marks * BCA/B.Sc.(CS/IT) or Equivalent = 1 Mark * Else 0   b) Work experience in the capacity of Database Expert for project value more than Rs. 3 Cr.   * >=5 years = 2 Marks * >=3 and <5 years =1 Mark * Else 0 |
| 5. | Application Development Lead | 4 | a) Educational Qualification:   * BE/B Tech/MCA/MSc (CS/IT) or Equivalent = 2 Marks * BCA/B.Sc.(CS/IT) or Equivalent = 1 Mark * Else 0   b) Work experience in the capacity of Application Development Lead for project value more than Rs. 3 Cr.   * >=5 years = 2 Marks * >=3 and <5 years =1 Mark * Else 0 |
|  |  |  |  |

* ***CVs needs to be provided in the format provided as*** [Annexure 2.***7***](#_bookmark86) ***in the RFP Volume I***
* ***Project Manager with anyone from above list of Key Personnel should share weekly/monthly progress report; shall attend all the weekly/monthly meetings with AUTHORITY and, should also represent the SI in all the important meetings.***
* ***SI should submit profiles of only those resources who shall be deployed on the project. Any change of resource should be approved by the Authority and compensated with equivalent or better resource. The Authority may interview the resources suggested by SI before their deployment on board. It does not apply in case of change requested by the Authority.***

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

1. The Bidder shall quote only one specific make and model from only one specific OEM, for each of the goods. Providing more than one option shall not be allowed. All goods quoted by the Bidder must be associated with item code and names and with printed literature describing configuration and functionality. Any deviation from the printed specifications should be clearly mentioned in the offer document by the Bidder.
2. The OEM for each products or technology quoted should be in the business of that product or solution or technology for at least 3 (Three) years as on the date of release of the RFP.
3. All the OEMs should have authorized presence in India either directly or through channel partner(s) as on the date of release of RFP.
4. The OEM for all active components should give a declaration that products or technology quoted are neither end-of-sale nor end-of-life as on the date of installation and commissioning and are not end-of-support till the successful completion of O&M period of the project as [Annexure 2.4](#_bookmark83) in the RFP
5. The bidder’s proposed OEM should not have been blacklisted by any State / Central Government Department or Central /State PSUs as on bid submission date.
6. **Adequate supporting documents pertaining to the above points, along with a summary compliance table, should be submitted in the proposal by the Bidder.**
   1. **Award of Contract**

**Award Criteria**

1. The cost indicated in the Financial Proposal shall be deemed as final and reflecting the total cost of services and should be stated in INR only. Omissions, if any, in costing of any item shall not entitle the Bidder to be compensated and the liability to fulfil its obligations as per the Terms of Reference within the total quoted price shall be that of the Bidder. The Bidder shall bear all taxes (including GST), duties, fees, levies and other charges imposed under the Applicable Law as applicable. The lowest Financial Proposal (Fm) will be given a financial score (Sf) of 100 points. The financial scores (Sf) of the other Financial Proposals will be determined using the following formula:

Sf = 100 x Fm/F;

In which Sf is the financial score, Fm is the lowest Financial Proposal, and F is the Financial Proposal (in INR) under consideration. Proposals will be finally be ranked in accordance with their combined technical (St) and financial (Sf) scores:

S = St x Tw + Sf x Fw;

Where S is the combined score, and Tw and Fw are weights assigned to Technical and Financial Proposal that will be **70:30.**

1. AUTHORITY reserves the right to further negotiate the prices quoted by the successful bidder.
2. Bidder achieving the highest combined technical and financial score will be considered to be the successful bidder and will be issued the Letter of Acceptance (LoA).
3. If there is more than one bidder achieving (combined technical and financial score) the equal score, AUTHORITY reserves the right to select the Bidder(s) and that will be binding on all bidders.

### Letter of Acceptance

AUTHORITY will notify the successful bidder in writing or by fax or email, to be confirmed in writing by letter, that its bid has been accepted. LoA will constitute the formation of the contract. Upon the successful bidder’s furnishing of Performance Bank Guarantee, AUTHORITY will promptly notify each unsuccessful bidder.

### Signing of Contract

AUTHORITY shall notify the successful bidder that its bid has been accepted. The successful bidder shall enter into contract agreement with AUTHORITY within the time frame mentioned in the Letter of Acceptance issued to the successful bidder by AUTHORITY.

### Failure to Agree with the Terms & Conditions of the RFP / Contract

Failure of the successful bidder to agree with the Terms & Conditions of the RFP / Contract shall constitute sufficient grounds for the annulment of the award, in which event AUTHORITY may invite the next best bidder for negotiations or may call for fresh RFP.

### BBMP’s Right to Accept any Bid and to Reject any or All Bids

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

#### Performance Bank Guarantee

1. Within fifteen (15) working days from the date of issuance of LOA, the Successful Bidder shall at his own expense submit unconditional and irrevocable Performance Bank Guarantee (PBG) an amount equivalent to 5% of contract value to AUTHORITY.
2. The PBG shall be from a Nationalized Bank or a Scheduled Commercial Bank in the format prescribed in [Annexure 8,](#_bookmark95) payable on demand, for the due performance and fulfilment of the contract by the bidder.
3. All charges whatsoever such as premium; commission etc. with respect to the PBG shall be borne by the Successful Bidder.
4. The PBG shall be valid till satisfactory completion of Post Implementation Support. The PBG may be discharged/returned by AUTHORITY upon being satisfied that there has been due performance of the obligations of the bidder under the contract. However, no interest shall be payable on the PBG. The PBG shall be valid only up to the completion of Go Live + O&M Phase.
5. In case the project is extended after the project schedule as mentioned in the RFP, the PBG shall be accordingly extended by the Successful Bidder till the extended period.
6. In the event of the Bidder being unable to service the contract for whatever reason AUTHORITY would invoke the PBG. Notwithstanding and without prejudice to any rights whatsoever of AUTHORITY under the contract in the matter, the proceeds of the PBG shall be payable to AUTHORITY as compensation for any loss resulting from the bidder’s failure to complete its obligations under the Contract. AUTHORITY shall notify the Bidder in writing of the exercise of its right to receive such compensation within 14 days, indicating the contractual obligation(s) for which the Bidder is in default.
7. AUTHORITY shall also be entitled to make recoveries from the bidder’s bills, PBG, or from any other amount due to him under this Agreement, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.
8. On satisfactory performance and completion of the order in all respects and duly certified to this effect by AUTHORITY, Contract Completion Certificate shall be issued and the PBG would be returned to the Successful Bidder.

## Right to Vary Quantity

1. After the award of contract, the quantity of goods, works or services originally specified in the bidding documents may be increased / decreased by up to 20%, as necessary. It shall be without any change in the unit prices or other terms and conditions of the Bid and the bidding documents.
2. If AUTHORITY 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.
3. 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.

## Warranty & Maintenance

1. Successful Bidder shall also provide complete maintenance support for all supplied hardware and other components as outlined in this RFP for a period of 36 months from the date of **Go-Live**.
2. At the time of delivery, the bidder shall warrant that the goods supplied under the contract are new, unused, of the most recent version/models and incorporate all recent improvements in design and materials unless provided otherwise in the contract.
3. AUTHORITY or designated representatives of the bidder shall promptly notify Successful Bidder in writing of any claims arising under this warranty. Upon receipt of such notice, the Successful Bidder shall, within the warranty period and with all reasonable speed, repair or replace the defective systems, without costs to AUTHORITY and within time specified and acceptable to AUTHORITY.
4. If the Successful Bidder, having been notified, fails to remedy the defect(s) within the period specified in the contract, AUTHORITY may proceed to take such reasonable remedial action as may be necessary, at the Successful Bidder’s risk and expense and without prejudice to any other rights, which AUTHORITY may have against the bidder under the contract.
5. During the comprehensive warranty period, the Successful Bidder shall provide all product(s), patches/fixes, within 15 days of their availability and should carry out installation and make operational the same at no additional cost to AUTHORITY.

#### The Successful Bidder hereby warrants AUTHORITY that:

* The supplied H/w & S/w meeting all the requirements as outlined in the RFP and further amendments if any and provides the functionality and performance, as per the terms and conditions specified in the contract.
* The proposed H/w & S/w shall achieve parameters delineated in the technical specification/requirement.
* The Successful bidder shall be responsible for warranty & maintenance services from licensers of products included in the systems for a period of 3 (Three) Years onsite 100% comprehensive warranty after successful commissioning of system.
* The Successful bidder shall ensure the maintenance of the acceptance criterion/standards in respect of the systems during the warranty and maintenance period.

Scope of Work

# Scope of Work

## Introduction

The performance of the fleet deployed in collection and transportation is one of the most critical aspects to be monitored in SWM. Outflows of the ULB are a direct derivative of distance traveled, and sanctity of destinations to ensure the transporter is not dumping waste is key to the transition of managing C&T scientifically in the SWM chain. With the thrust on digitization of entire data on solid waste management & sanitation under Swachh Bharat Mission and establishment of master data centres at the State and National levels under Smart City programme of MOHUA, BBMP is moving in the right direction of ICT based monitoring of its SWM operations. This approach integrates technology to make SWM services more efficient, ensure resource optimization, bring in transparency and help facilitate decision-making through data against performance benchmarks.

## Present Scenario

At present there are 4000+ Auto Tippers (Primary Collection Vehicles – PCV) and 500+ Compactors (Secondary Transportation Vehicles – STV) deployed on ground to carry out primary collection and secondary transportation of MSW from 198 wards of BBMP. At present, only compactors have been provided with QR code based RFID cards which are read through a mobile Application at the waste processing facilities and landfill at Bellahalli. Currently this measure reflects only arrival of the STVs at their designated destinations.

The attendance of the Auto Tippers at the wards is being captured through Clean Bangalore App by the JHIs through capturing time stamped and geotagged photographs of PCVs at the mustering locations. As an extension of the QR code based RFID monitoring of STVs, the PCVs are now being provided with RFID tag which will be read through another mobile Application at the mustering locations and Garbage Transfer Points (Lorry Points). Therefore, an integration of data from all these Applications is required in order to get the holistic picture of the solid waste operations in the city including monitoring of

## Proposed Fleet Monitoring System

* Vehicle Attendance system for PCVs – build up on the existing QR code based RFID system
* Real time movement tracking of PCVs and STVs through GPS enabled system. This shall be later integrated with citizen dashboard on BBMP/ SWM website.
* Waste transfer data monitoring – This shall be at two levels – Waste transfer from PCVs into STVs through an RFID based system at GTPs and waste input at the processing plants and landfill by STPs.
* Integration of weighbridge data from all processing plants and landfill at the central control room
* Real time monitoring of route of segregated waste collection from households and small commercial establishments through an RFID based solution.
* Integration of all the above into a single dashboard through the smart command control room for SWM. The smart command control room for SWM will be designed to also receive data on other activities such as decentralized destinations – DWCCs, biomethanation units, transfer stations, etc. and other waste streams such as Bulk Generators, animal waste, C&D Waste, etc.
* Automated bill generation through reports at the smart command control room linking it to payment gateway to the SWM service providers.

## Project Duration

The expected timeframe of the project will be 4 months (within which the project ‘Go- Live’ is to be declared). Thereafter a period of 3 years is being proposed for the Operation and Maintenance support.

## Broad Scope of Work

The scope of work involves design, development, installation, operation and maintenance of the following components for pan city.

*(Components are given for reference purpose. Proposed solution should cover all the relevant functionalities captured under these components. In case any system/component needs to be reclassified/redefined, the bidder should provide proper justification for the same)*

Given below is a high level overview of the scope for this phase of implementation.

The key aspects that one needs to consider are:

* Fleet Management **(Vehicle Tracking & Management System) for more than one type of generator**
* Integration with other BBMP systems such as citizen grievance redressal system (ex: BBMP Sahaya)
* **The system should have the ability to scale and support similar requirements from other ULBs in the state of Karnataka**

# SOLUTION - HARDWARE REQUIREMENT SPECIFICATIONS

* **GPS** based Vehicle Tracking System in auto tippers, compactors and push carts
* Tracking of solid waste shift from auto tipper to compactors through **RFID tags** mounted on auto tippers and **RFID readers** mounted on compactors
* **Server and Storage** to support the application as per the defined functional and non-functional requirements

### Bill of Material

|  |  |  |
| --- | --- | --- |
| **#.** | **Description** | **Quantity** |
| 1 | 8 Port Industrial switches | Depending on the Server / Storage Hardware being proposed |
| 2 | LED Screens for Command Center | 10 |
| 3 | Desktop PCs for Command Center & Support Staff | 15 |
| 4 | Vehicle Tracking Devices for Compactors & Auto tippers | 6500 |
| 5 | Active RFID Tags for Auto tippers | 5000 |
| 6 | RFID Readers | 600 |
| 7 | Any other item required to complete the scope of work | - |
| 8 | QR Code stickers & Readers | Per Unit |
| 9 | Server and Storage | As per the application availability & performance requirements |

### Technical Specifications

#### Desktop PCs

|  |  |  |
| --- | --- | --- |
| **S No** | **Parameter** | **Minimum Specifications** |
| **1.** | **Operating**  **System (OS)** | Windows 10 Pro 64 bit |
| **2.** | **CPU** | Intel Core™ i5-6400 Processor (3M Cache, up to 2.70 GHz) or better |
| **3.** | **Memory** | 4 GB DDR4 RAM or Higher |
| **4.** | **Storage** | 500 GB 7200RPM SATA |
| **5.** | **Mouse** | Wired - USB 2 Button optical Scroll Mouse with mouse pad |
| **6.** | **Keyboard** | Wired – USB, 104 Etched keys bilingual compact and light weight  keyboard with Indian Rupees symbol. |
| **7.** | **Graphics Card** | Intel HD Graphics 530 or higher |
| **8.** | **Monitor** | Screen Size: 19.5” or higher LED monitor with 5ms or better  response time. Resolution : 16:9 Ratio |
| **9.** | **Ports** | 4 USB ports with USB 3.0 Ports (at least 2), (1) RJ-45, audio in/out, headphone and microphone.(1) HDMI Out Port |
| **10.** | **Optical Drive** | 8X DVD Writer Drive |
| **11.** | **Audio** | Integrated High Definition audio with inbuilt speaker of 2 Watt or  better |
| **12.** | **Network**  **connection** | Gigabit Ethernet (GigE) network connection required |
| **13.** | **Wireless**  **LAN/WAN** | Intel 3165 AC (1x1), Bluetooth 4.0 or better |
| **14.** | **Security** | Serial, USB enable/disable |
| **15.** | **Certification** | Certification Energy star 5.0/BEE star certified, Power supply  should not be more than 220 Watt |
| **16.** | **Support &**  **Warranty** | 5 (Five) Years onsite 100% comprehensive warranty after  successful commissioning of system. |
| **17.** | **Antivirus** | 3 (Three) year Antivirus license from top 5 Antivirus solution  provider as per last two Quarter IDC report |
| **18.** | **Other Software** | Latest perpetual license version of MS Office (with minimum MS  Word, MS Excel, MS Power Point) and Latest version of Adobe Acrobat Reader. |
| **19.** | **Preferred**  **Make** | Proposed make should be from top 5 brands as per IDC Market Analysis Report for India for Q4 2016. |

#### LED Screens

|  |  |  |
| --- | --- | --- |
| **#** | **Parameter** | **Minimum Required Specifications** |
| 1. | Technology | IPS Panel |
| 2. | Screen Size | Minimum 50’’ (diagonally) |
| 3. | Resolution | Full High definition (1920 X 1080) 16:9 Widescreen |
| 4. | Contrast Ratio | 1000:1 or better |
| 5. | Brightness | 350 Cd/m2 or better |
| 6. | Response Time | 12 ms or better |
| 7. | Viewing Angle | 178 x 178 |
| 8. | Certification | CE, FCC, UL/KC/CB |
| 9. | Standard Inputs | DVI-D,RGB, HDMI, USB |
| 10. | Control | RS-232/RJ-45/IR |
| 11. | Power Consumption | Not more than 80 Watt |

#### 8 Port Industrial Switch

|  |  |  |
| --- | --- | --- |
| **#** | **Characteristics** | **Minimum Specifications** |
| 1 | Number of Ports | 8 Port 10/100/1000Base-T and Minimum Two Gigabit uplinks. (Uplinks should accepts both SMF / MMF sfp)  (Uplinks should accept Copper based Gigabit Modules) |
| 2 | Type and Functionality | Layer 2 Modular, Fully Managed and Industrial Ethernet Switch |
| 3 | Features Specification | **IEEE Standards** |
| IEEE 802.1D MAC bridges, STP |
| IEEE 802.1p Layer 2 COS prioritization |
| IEEE 802.1q VLAN |
| IEEE 802.1s Multiple SpanningTrees |
| IEEE 802.1w Rapid SpanningTree |
| IEEE 802.1AB LLDP |
| IEEE 802.3ad Link Aggregation (LACP) |
| IEEE 802.3af |
| IEEE 802.3at |
| IEEE 802.3af Power over Ethernet |
| IEEE 802.3at Power over Ethernet Plus |
| IEEE 802.3x full duplex on 10Base-T |
| IEEE 802.3 10BASE-T specification |
| IEEE 802.3u 100BASE-TX specification |
| IEEE 802.3ab 1000BASE-T specification |
| IEEE 802.3z 1000BASE-X specification |
| IEEE 802.1X for Authentication |
| IEEE 802.3ad for Port Trunk with LACP |
| **RFC Compliance** |
| RFC 768: UDP |
| RFC 783: TFTP |
| RFC 791: IPv4 protocol |
| RFC 792: ICMP |
|  |  | RFC 793: TCP |
| RFC 826: ARP |
| RFC 854: Telnet |
| RFC 1305: NTP |
| RFC 1534: DHCP and BootP interoperation |
| RFC 1643: Ethernet Interface MIB |
| RFC 2068: HTTP |
| RFC 2131, 2132: DHCP |
| RFC 959: FTP |
| RFC 1157: SNMPv1 |
| RFC 1901,1902-1907: SNMPv2 |
| RFC 2273-2275: SNMPv3 |
| RFC 1166: IP Addresses |
| RFC 2236: IGMP v2 |
| RFC 2571: SNMP Management |
| RFC 4250-4252: SSH Protocol |
| **Management Features**  Configuration Management: Console Port with Command Line Interface (CLI), Web Interface (HTTP/HTTPS), Telnet, SSH Console with CLI |
| System Upgrade/Backup: FTP/SFT/TFTP and Web Interface for Firmware Upgrade and Configuration Backup/Restore. |
| SNMP: V1, V2c, V3 with SNMP Trap Function. Simple Network Management Protocol (SNMP) MIB Objects: MIB-II |
| System Log: Local Mode and Server Mode |
| Management: IPv4 and IPv6 |
| **Software Features Support** |
| Port-based VLAN, IEEE 802.1Q VLAN |
| Max. Number of VLANs: 64 |
| VLAN ID Range: VID 1 to 4094 |
| IGMP Groups: 256 |
| Jumbo Frames Support, Port Trunk IEEE 802.3ad LACP with timer and static port trunk, LLDP,MSTP, STP Portfast, ICMP Vlans, static IP, Trust Ingress DSCP, COS, Priority Port, port- security, |
| Redundant Ring topology |
| IGMP querier, DHCP server SNMP v2/v3, SNMP traps, syslog, IGMP snooping, DHCP snooping,  BPDU guard, Radius client, |
|  |  | Etherchannel, Alarms, PoE capability, |
| Port Configuration: Port link speed, link mode,  port status, enable/disable |
| Port Trunk IEEE 802.3ad LACP with timer and  static port trunk |
| IPv6 Ready |
| 4 | Power over Ethernet | Power over Ethernet The ports shall support  802.3 af/at |
| 5 | Operating temperatures and ingress  protection | Minimum -40’C to 75’C without FAN with IP30 protection rating |
| 6 | Installation/ Mounting | Installation/ Mounting DIN Rail Mount |
| 7 | Power Source | Dual DC power input and reverse power protection |

#### Vehicle Tracking Device Specifications

|  |  |  |
| --- | --- | --- |
| **#** | **Module** | **Minimum Specifications** |
| 1 | Technology | GSM/GPRS/GNSS/Blue-Tooth |
| 2 | Tracking Sensitivity | -165 dBM |
| 3 | Accuracy | <3m |
| 4 | Hot start | <1 sec |
| 5 | Warm start | <25 sec |
| 6 | Cold Start | <35 sec |
| 7 | Cellular Technology | GSM |
| 8 | 2G bands | Quad-band 850/900/1800/1900 MHz |
| 9 | Data transfer | GPRS |
| 10 | Data Support | SMS (text/data) |
| 11 | USB | 2.0 |
| 12 | Sensors | Accelerometer |
| 13 | Scenarios | Green Driving, Over speeding detection, jamming detection, GNSS fuel counter, excessive idling detection, immobilizer, unplug detection, towing detection, crash detection, auto geofence, manual geofence |
| 14 | Configuration and firmware update | FOTA web, FOTA, Configurator (USB, Blue-tooth) |

#### RFID Reader Specifications

|  |  |  |
| --- | --- | --- |
| # | Feature | Specification |
| 1 | Compatibility | EPC Gen 2(ISO18000-6C) |
| 2 | Operating Frequency | One of the following: 865-868 MHz, 865-867 MHz, 902-928 MHz, 922-928 MHz, 920-925 MHz, 915-922 MHz |
| 3 | RF power | 0~30dBm |
| 4 | Reading Range | Upto 5 meter or better |
| 5 | Reading Indication | Buzzer, LED |
| 6 | Power | DC supply (12 V, 2.5 A), or use POE+ (IEEE802.3at) |
| 7 | Antenna | Single unit with inbuilt antenna, Circular Polarization Antenna |
| 9 | Communication | Ethernet, Internal or External GSM/GPRS |
|  |  | Module |
| 10 | Operating Temp | From -20℃～+60℃ |
| 11 | Humidity | 95% Non-condensing |
| 12 | IP Rating | IP 65 |
| 13 | GPIO | Minimum 1 x GPO and 1 x GPI |
| 14 | Environment | Metallic / Glass |
| 15 | Durability | Rugged construction for higher durability |
| 16 | Data control Interface | GPRS |

# SOLUTION - MANPOWER REQUIREMENT SPECIFICATIONS

Following is an indicative list of manpower required during the implementation phase

|  |  |
| --- | --- |
| **#** | **Profile** |
| 1 | Project Manager |
| 2 | Solution Architect |
| 3 | Business Analyst |
| 4 | Database Expert |
| 5 | Application Development Lead |
| 6 | Senior Developer |
| 7 | Developer |
| 8 | UI Designer |
| 9 | Technical Writer |
| 10 | Project Lead – Testing |
| 11 | Senior Tester |
| 12 | Release/ Implementation Manager |
| 13 | Security Expert |
| 14 | Integration Specialist |
| 15 | Facility Management Services |

Following is the list of manpower required during the **post Go-live** state

* **One programmer** for the duration of the contract to
  + Support any minor enhancements to the application
  + Bug fixing
  + Provide app related training
  + Ongoing support to users
  + Support onboarding of new vehicles, locations & people
* **Three hardware engineers** for the duration of the contract to
  + Resolve any hardware related issues
  + Replacement of faulty equipment
  + Spares management
  + Provide hardware support to users
  + Provide hardware related training
  + Ongoing support to users
  + Support onboarding of new vehicles, locations & people
* **Data Center engineer** for the duration of the contract to
  + Configure and Support monitoring tools
  + Monitor the hardware & application for availability & performance
  + Provide Data Center infrastructure support including server and storage
  + Scheduling & managing backups
  + Recover as and when a need arises
* **Two Service Desk personnel** for the duration of the contract to
  + Help logging issues via email, app & phone
  + Triaging service calls to the appropriate engineers
  + Following up and closing all pending issues
* **Eight Control Center operators (one per zone)** for the duration of the contract to
  + Monitor the zone wise screens
  + Communicate / Co-ordinate with drivers and other BBMP personnel

# SOLUTION - SOFTWARE REQUIREMENT SPECIFICATIONS

## Login

A login screen shall be displayed using which user can enter user name and password. The user shall be allowed to log in only when a combination of user name and password matches.

The software solution shall have a “forgot password” mechanism which can be used in case registered user forgets password. The temporary password shall be sent to a user's registered mobile number. After logging in with temporary password, user shall have an option to change the password. Different types of users include contractors, BBMP employees, citizens.

## Admin Module

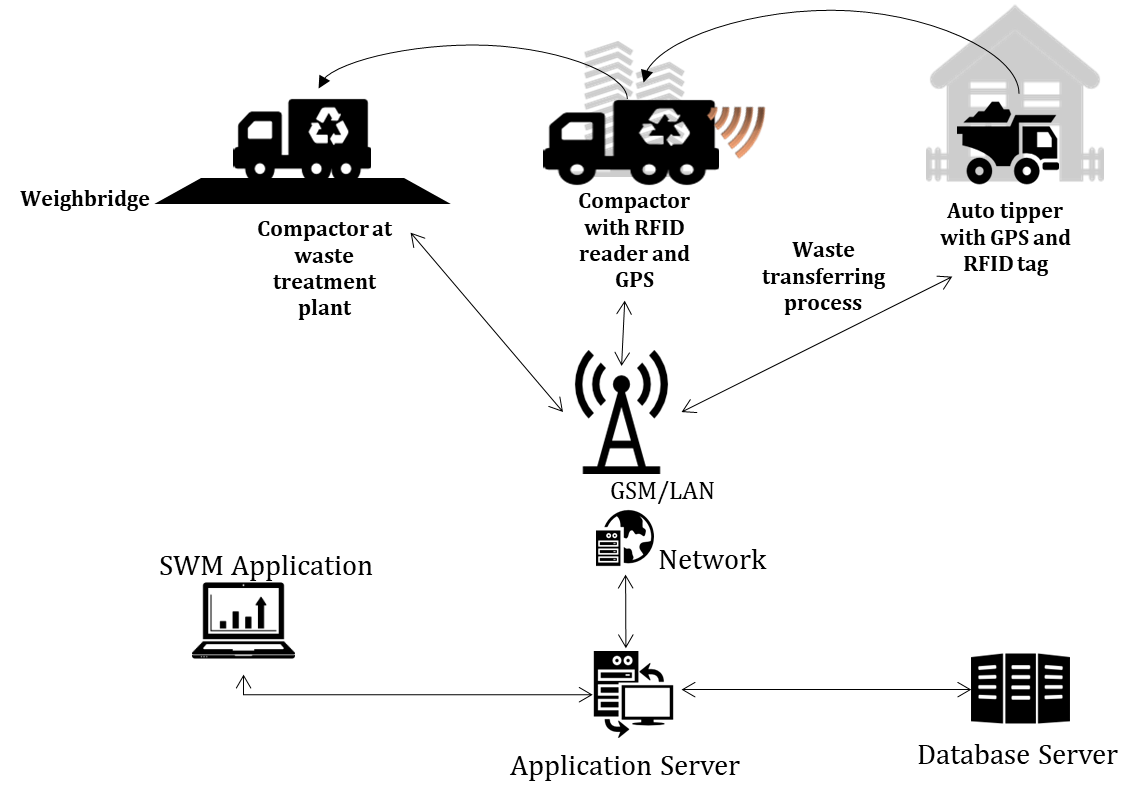
Admin module shall provide functionality of creating and managing users, roles, masters, etc. It shall also enable various other administrative tasks like deletion of records, insertion of records, updation of records, etc. Indicative list of requirements for the module for Admin/Managers is as under:

* User & Role Management Module
  + The software solution shall have facility to register users capturing necessary user details.
  + Necessary fingerprint details for fingerprint authentication shall be captured to complete the registration of user
  + Define roles and associated privileges
  + Create/Edit/Delete user role with specific privileges (The solution shall have capability to show/hide screens based on user roles.)
  + The administrator shall have feature to reset password for users
* Create & Manage masters pertaining to zone, wards
* Create & Manage routes (TPM
* Create & Manage Contracts - Create/Edit/Delete Contacts with details of SLA, payments and penalty
* Create & Manage Vehicles
  + Create/Edit/Delete Vehicles
  + Create/Edit/Delete schedule for specific vehicle/group of vehicles
  + Mapping of Zone/Ward/Group/Sub Group/ Contract/Vehicle with Contractor
  + Mapping of drivers with specific vehicles with contact details
  + Management of vehicles with history including start date and end date of specific vehicle in use
* Create & Manage RFID Readers and Tags
  + Create/Edit/Delete RFID Readers in system
  + Mapping of RFID Readers with specific group/location
  + Create/Edit/Delete RFID Tags in system
  + Mapping of RFID Tags with vehicles
  + Updation of RFID Tags on vehicles with history management (in case RFID Tag gets damaged, it shall be required to install new RFID Tag on vehicle and necessary details of new RFID tag shall be required to be mapped against the vehicle. While the new Tag details are updated against the vehicle, the older Tag details shall be maintained as history for specific vehicle)
* Upon specific user request, the admin user/manager shall have functionality to revert/alter any transactional record. Necessary audit trails shall be maintained in the solution
* Create/Edit/Delete group and sub group for various parameters like vehicle type, zone & wards, contractors, etc
* Create/Edit/Delete locations.
* Mapping of users, groups and vehicles to specific location
* Mapping of users to specific group
* Mapping of Vehicles to specific group
* Define and manage allowed threshold (delay) for garbage collection coverage for specific vehicle / group of vehicles

## Geo fencing / tagging / coding

* Geocoding / surveying of the following components shall be done
  + Waste Collection points (POls) & Routes
  + Specific transfer areas
  + Zone Offices
  + Ward offices
  + Processing facilities
  + Societies/localities
  + Others (as and when new components get added)
* The Geo-tagged locations shall be mapped with the location list prepared by admin/managers
* The accuracy of these locations shall be within a radius of 3 to 5 meters. The implementing agency shall use these locations over the maps and shall deliver the same to BBMP in open source formats or map formats
* Dynamic Route Management: Ability to create and assign routes based on the landmarks and stoppages with option to assign single or multiple vehicles on the route created

## DWCC /Transfer Stations / Wet Waste Processing plants / landfill



The software solution shall correlate, and display vehicle information captured by RFID reader, weight of the waste calculated by weigh bridge system, image (captured by camera) of the vehicle entering transfer station on the desktop screen of the operator stationed at transfer station.

When a vehicle arrives at transfer station and once the data is captured by RFID reader and weigh bridge system, necessary vehicle details shall be displayed on user screen along with a "capture" button on click of which camera shall be able to capture image of vehicle (with number plate visible in the image). Once all the details are available from hardware devices (RFID reader weigh bridge system, camera) on dashboard, supervisor shall be able to validate the same and store details in the centralized database by clicking "submit" button on the screen

In case, multiple vehicles are in the range of RFID reader, a list of vehicles along with “select” option shall appear from where supervisor can select details of appropriate vehicle. In case a supervisor makes a mistake in selecting a vehicle, an option to revert the selection shall be provided to operator at transfer station to correct the entry.

System shall allow mapping of vehicles based on its type. Depending on the type of the vehicle necessary parameters to be captured at the transfer station / disposal site based on the requirement.

The module shall have a print functionality where supervisor at transfer station can print acknowledgement receipt containing details like vehicle details, weight of the waste, contractor details etc. In case it is required to reprint the acknowledgement receipt, the system shall have provision for reprinting of receipt with necessary marking on the receipt about reprinting of the receipt. The receipt shall also print the date and time of print, login user details, etc

The user shall have option to generate day end report summarizing the daily activity like number of vehicles visited the processing facility, amount of weight collected at processing facility etc

The software solution shall be implemented in such a way that supervisor shall be asked to scan finger print after specified duration like 15 minutes or 30 minutes to ensure availability of the designated user

The system shall have provision for generating day wise and shift wise summary and reports. The system and flow shall be designed in such a way that the operator needs to make minimum input and the completion of transaction takes minimum time

## Vehicle tracking and management system



Vehicle Tracking and Management System shall have the following functionality

* System shall be able to take over all functionalities currently served by the existing VTMS application. (All costs related to connectivity, storage and application will need to be borne by the vendor)
* The system shall allow monitoring of each and every vehicle and provide its real time status
* The system shall be able to auto correct the spikes and wandering coordinates (as received from the GPS receivers, which might have been induced by signal loss).
  + It shall be able to correlate that coordinate with the preceding and succeeding coordinates, speed of the vehicle and time. These corrections shall be built in the algorithm of the GPS engine that is to be used by the proposed solution.
* System shall allow to create/ modify/ delete geofences (including but not limited to routes, ward/zone/transfer station/landfill/parking/fuel station boundary), as well as allow import facility of shapefiles/KML or other spatial file formats for the aforesaid purpose; and also allow facility to draw specific routes, points of interest



* The system shall have inbuilt engines of maps and shall be able to store scalable vector data
* System shall be able to show the Scheduled Time of Arrival (STA) of garbage collection vehicles at each lane based on what is expected as per ideal conditions (this will be provided by BBMP); as well as the Estimated Time of Arrival (ETA) based on the actual ground conditions (traffic, collection delays, any other factor)
* System shall be able to monitor the entry and exit of the vehicle in every lane
  + It shall be able to calculate the average time that the vehicle spends in each lane.
  + System shall be able to ensure that geo-fences are enabled on routes of all vehicles (esp. those of SWM), administrative boundaries, transfer stations, workshop, landfill and other features/locations as and when defined upon requirement. In case geo-fencing has not been completed under the current VTMS project, the same will need to be completed first under the scope of this RFP).
* The system shall be able to prioritize the route/s which the vehicle usually takes to reach the transfer station. There could be more than one route that the vehicle takes (in order to avoid congestion on road). These will need to be marked as authorized routes.
* System will need to generate alert if the vehicle spends more than the usual time required to traverse the route from its waste pickup point to the transfer station and back. (This analysis will need to be done using the traffic congestion data like those available on Google maps or other similar platforms/applications)
* Geo Fencing shall be re-configurable based on the route changes/Requirements/Route optimization which will be undertaken every 3-6 months on the basis of Historical Data Analysis. The system shall be able to change existing geo-fences based on specific requirement, or when the routes of the vehicles undergo any changes after route optimization process (as explained in this document).
* Based on data availability for number of households (to be provided by BBMP) in each lane; the time spent in each lane, stoppage time shall be defined and an evaluation beyond permissible limits either side shall be alerted.
* It shall be able to record intermittent stoppages along a particular lane, so that it can be used for indirect inference that time was provided for the residents to deposit their garbage and accordingly it can be deduced that waste has been collected from each and every household of every lane.
* Queue Management on the basis of nearby vehicles and estimated time to reach. This will tell which vehicle shall reach the transfer station first to unload the waste.
  + The prioritization of who will be first unloading the vehicle at transfer station shall be based on:
    - Distance to Transfer Station
    - Estimated time to reach
  + If the vehicle takes more than 10% of its total allocated time at a particular lane/area according to the route guide (pre-defined), then immediate alert shall be raised
* Facility to see vehicle specific or category specific alerts
* Missed POl Alert: In case a POl is missed by a vehicle, the alert shall be given on dashboard
* Vehicle wise missed POl report shall be visible on screen as well in report format for a specific day or date range
* Facility to enable or disable any alerts for specific vehicle or group
* The real time location of the vehicle shall be available on the MAP with the details like Vehicle information, Location, Speed, Time Stamp, Distance travelled, Idle time
* Facility to Create & Manage Vehicle master capturing details like type of vehicle, owner entity, registration no., etc
* Ability to map the RFID tag, GPS device, driver with a specific vehicle
* Ability to display information available from GPS devices installed on vehicles onto GIS/OSM/Google map
* The vehicles and its route shall be color coded for easy identification on map
* Facility to view all or selected vehicles based on vehicle no./contractor/zone/etc
* User shall have an option to select a vehicle based on the assigned route
* User shall have an option to view history (with an option to select a report for a specific date or a date range) of vehicle travelled on the route along with the details of irregularities (missed POl) in covering the specified route
* The map shall display real time movement of vehicles along with status of vehicles like idle, moving, etc
* The solution shall display designated POls along the routes displayed on map
* Real Time Tracking shall provide real time information on vehicle status based on user defined criteria like location, speed, time, etc
* The solution shall have capability to replay a trip of any vehicle displaying the trip replay on map
* Device Tampering Alert: In case of tampering of any equipment, component of vehicle tracking
* system etc., alert shall be given through SMS/ On-screen Pop Up Alert to relevant Mobile Nos. or as suggested by BBMP
* Route Deviation/Excess Stoppage Alert: In case of deviation of vehicle from pre-defined routes or excess stoppage of vehicle beyond a specified time duration alert shall be given through SMS to relevant Mobile Nos. as suggested by BBMP

## Employees mustering (attendance) module

The primary objective of this module is to integrate with the existing Biometric attendance system. The vendor shall provide the following:

* Provide training to end users
* Vehicle Attendance system for PCVs – build up on the existing QR code based RFID system with Geo-fencing of vehicle mustering point.
* Waste workers linked to SWM Fleet (Drivers / helpers / supervisors) attendance system – have a RFID / Biometric based attendance with Geo-fencing of mustering point
* PKs Attendance system – Integrate with the existing biometric attendance system and linkage of sweeping stretch through PK Street Mapping App, with Geo-fencing of mustering point.
* JHIs – Biometric based attendance with Geo-fencing of mustering point

## Route Mapping & Optimization Module

The Route Mapping & Optimization Module shall have the following functionality

* Time Place Movement (TPM) mapping
  + Facility to define route and waste collection points on map
  + All routes and its collection points shall be accurately mapped (for tabular / map report, analysis)
  + Facility to define the schedule for each route and PoI there in, with respect to its collection in terms of start time, end time and grace period if any
  + Facility to assign a specific or multiple route to a particular contractor/vehicle / driver
  + Administration of defined route as per new / updated requirement
* Time Place Movement (TPM) Monitoring
  + Monitoring the route attendance by designated vehicle in terms of in time, out time and duration
  + Monitoring of vehicle movement & stopping points with time stamps
  + Route and collecting points shall be displayed on the city map. e.g. Street name, Apartment name, Complex name is to be displayed in reports as well as on map
  + Through GPS movement, entry/exit and stoppages of vehicle shall be monitored
  + Every collecting point is mapped with the stoppage time interval. If vehicle stops at least for defined stoppage time at that collection point, it can be assumed that waste is collected from that point
  + Alert shall be configurable for notifying incidence of missed route, missed Pol, on missing time schedule
* System shall have functionality to optimize garbage collection route, which can be based on following (but not limited to) parameters:
  + Dynamic creation of geofence
  + Dynamic allocation of collection points raised by citizens
  + Shortest route
  + Shortest time
  + Speed limit restriction
  + Traffic volume at different times of the day
  + One-way streets
  + Turn restrictions
  + Obstacles
* System shall have tools for planning and allocating resources (manpower, vehicle and inventory) in place that will function in tandem with the fleet management system.
  + The system shall be able to record employee movement (as and when he/she is assigned from one ward/zone to another. The systems shall be able to undertake scheduling activities in a systematic manner and generate reports pertaining to the same.
* System shall have alert generation facility against delays or other issues during solid waste pickup duties
* CCTV cameras to be installed at transfer stations to provide video feed (24\*7)
  + It needs to be used to monitor unauthorized entry of vehicles and people;
  + To monitor and ensure, use of safety equipment (like gloves, boot and mask) amongst sanitation workers/authorized rag pickers.
  + System shall be able to store recording for an entire week locally, while there shall be a mechanism to store data for a fortnight at the control centre.
* The system shall have the functionality to ensure that it is able to provide automated traffic analysis involving during following scenarios:
  + Vehicles on their way to transfer station to unload garbage
  + Vehicles already unloading at transfer station
  + Optimized route from the point the vehicle gets filled, to the transfer station, and back to the same spot to continue collection of waste. Vehicular traffic and congestion that may be faced by the vehicle on its way to the transfer station (as available in applications like Google Maps)
  + Speed limit restrictions in place along the route
* Generate route performance report

## Contractor Management Module

Contractor Management Module shall have the following functionalities

* Facility to create new entity / contractor with contract details (contract start date, end date, zone, wards, etc.)
* Defining of payment terms, SLA, penalties etc
* Reporting on non-compliances
* Map vehicles to contractors
* Map drivers to contractors
* Management of Contracts

## Centralized Control Room

* SI shall setup a control center at a central location (to be identified by BBMP) with 8 TV screens (one for each zone) having one operator each to monitor the system on a continuous basis and coordinate with Drivers / other concerned officials. (BBMP will provide the basic infrastructure – Building, Furniture, Power and Internet facility)
* The Control Room shall have facility to communicate with the drivers & BBMP officials

## Street Sweeping Vehicle Module

This module shall have the following functionality

* Real time monitoring of street sweeping machines
* Reporting on total area covered by street sweeping machines
* Reporting on assigned route and violations if any
* Reporting on Utilization of the machine in no. of hours

## Dashboard & Reporting Module

Dashboard feature shall give a quick and easy view to know overall fleet status on real time basis. It shall display status information of waste collections across entire city. The solution shall have option to customize dashboard based on user role. The dashboard of operator can be different from the dashboard of higher officials. The Dashboard view shall provide the following information at a minimum

* Ward/zone wise collections
* Contractor wise activity report
* Category wise (auto tipper, compactor, etc.) activity report
* Summary of the activity at transfer area/processing facility like no. of vehicle trips, weightage collected, etc
* Daily, weekly, monthly collection dashboard
* Granular information about all mapped routes and waste vehicles travelling on the route
* Status of waste collecting vehicle (running/idle etc.) in the form of chart (e.g. pie chart)
* Detailed information about vehicles (e.g. company name, vehicle number, driver details etc.)
* The solution shall have alert dashboard where all generated alerts (e.g, missed POl) shall be displayed and corresponding SOPs shall be triggered (This shall require pre entry of payment and penalty applicable in case of missed POl, vehicle absent etc. which is not covered.)
* The dashboards shall be customizable where operator monitoring the solution can filter out columns/fields required as and when necessary
* The dashboards shall have sort option on all columns
* It shall be easy to create additional dashboard without major custom coding to meet functional requirements
* The dashboard shall have a print functionality
* The system shall have role based view for viewing the dashboard and reports. (It shall also include the parking spot, fuel station and transfer station which are tagged to a vehicle; in case the same are located outside the ward to which the vehicle belongs)
  + Ward (Default view)
  + Zone (Default view) - (Individual Ward view shall be selectable)
  + Entire BBMP (Default view) - (Ward/Zone view shall be selectable) - Super User (Commissioners, Other senior officials of BBMP)

Entire BBMP (Default limited view) (Ward/Zone view shall be selectable) – Residents/Citizen (Without login)

## MIS Reports

* MIS Reports at various levels (Zone, ward, Location) for various periods (Daily, weekly, monthly)
* Verification Report & Exception reports to be developed
* Capturing the GPS Coordinates of the location of data capture is recorded for validation
* Date wise, Zone wise, Route wise, collection points served, not served
* Date wise, Zone wise, Route wise number of vehicles (with vehicle details) used
* Date wise, Zone wise, Route wise list of vehicles transferred / not transferred garbage to processing facility
* Date wise, Zone wise, Route wise details of garbage collected
* Date wise, Zone wise, Route wise list of vehicles violated their routes
* Vehicle wise, date wise vehicle in operation/not in operation details
* Date wise, vehicle wise number of trips at processing facility
* Date wise, Zone wise list of vehicles with nonfunctional GPS
* Display of real time/archived vehicle traversal route on the map (Scheduled Actual)
* Display of Geo-fence, Geo-locations on the map
* Vehicle summary report (vehicle id, first and last collection points, Collection start time and end time for the day, Total distance travelled, Total no of speed violations, Maximum speed attained throughout journey, Graphical as well as tabular display of total collection points served, and points not served by selected vehicle for any particular day
* Show all collection point with their scheduled serve time
* Stoppage Report (Halt Start Time, End Time, Halt Location, and total Halt time for any selected vehicle for specific date)
* Vehicle History (Total distance covered, alerts, violations, average speed, high speed between start and end date (on weekly and monthly basis per Vehicle)
* Payment report for Contractors (Based on weight/trips per vehicle per day)
* Penalty report for Contractors (Based on weight/trips per vehicle per day)

## Mobile App

The selected bidder shall be required to develop a mobile app for android and IOS. The app shall enable monitoring of the activities as well as transactions. As part of waste collection process, the driver of the contracted vehicle must mark attendance at BBMP office. (The door to door garbage collection vehicle usually mark their attendance at respective ward office and the compactor driver usually mark their attendance at zone office) This mobile app shall enable contractors to mark attendance of the vehicle. This app shall also help citizens view the movement of auto tippers. The functionality shall be as given below:

* The mobile app shall have a login screen using which registered user can enter user name and password. Based on the role (citizen, BBMP officials, contractors etc), relevant screens shall appear
* When a supervisor logs in, the mobile app shall have a user interface where the supervisor stationed at zonal check post and ward office shall be able to select vehicle number from a dropdown containing list of vehicle numbers of the vehicles that are assigned (supposed to mark attendance) at that particular zonal check post/ward office
* After confirming the selected vehicle number of the arrived vehicle by manually observing the vehicle number plate, supervisor shall be able to submit attendance in the centralized database
* If a spare vehicle is assigned a duty in case of unavailability of regular vehicle, the app shall allow to assign the duty to the spare vehicle by selection from the list of spare vehicles
* "Assigned vehicle number list" shall be modifiable in such a way that any update/deletion/addition of vehicle number can be performed from backend
* Citizens can view the status of the auto tippers and track their movements. Also, they register a complaint using the app
* The app shall be able to provide the live location feed of ‘door- to-door’ vehicle in charge of specific ward and route.
* The app shall be able to locate the user location and show the concerned vehicles designated for his route/ward
* It shall be able to show the route which has been covered as well as the route that is pending
* It shall be able to show the time at which the vehicle passed by user location.
* It shall provide an interface through which Citizen can register self by giving his/her mobile number (mandatory) and Email ID (optional).
* Mobile app shall also allow to monitor the solid waste collection and disposal activity to BBMP officials
* BBMP officials shall be able to view the activities for a specific ward, zone and BBMP as a whole.
* The mobile app shall have dashboard to display reports of arrived vehicles by zone/ward. These reports shall be observed by BBMP officers registered to use the mobile app.
* App shall provide a consolidated view of the VTMS dashboard with important features previously described under different modules and also provide alerts regarding pendency.
  + Basic details (view mode) from aforesaid modules must be made available
  + System shall be able to generate an alert in case attendance has not been marked.
  + System shall be able to broadcast messages from senior officials (as Text/Multimedia)
* The mobile application shall work in the background in an always ON mode (esp. for PKs/supervisors in-charge of individual wards).
  + The app in this mode shall be able to track the location of the user (i.e. the GPS shall be on and set to high accuracy level where it gets the coordinates based on mobile tower and GPS satellite, so that approximate location can be traced even if the user is inside a building)
* System shall be able to push notifications and bulk SMS’s to citizen (if Elected representatives/Senior officials want to communicate any important matter)
* System shall be able to generate alerts whenever the end date of lease of any particular vehicle is nearing

## Data Confidentiality, Integrity & Availability

* The software and mobile app shall ensure the data Confidentiality, Integrity & Availability is taken care of by means of appropriate security controls such as data encryption both at rest and in transit
* Data localization shall be ensured, and all applicable Data Protection laws are adhered to
* Data shall be backed up on a regular basis and recovered as and when necessary
* There shall be provision for data to be archived as per BBMP’s defined archival & retention policy. The archived data shall be made available in usable format upon demand

## Integration

* The solution shall have capability to integrate with Email and SMS gateway to send Email and SMS.
* Provision for capturing complaint information with regards to the Solid Waste Management activity and integration with BBMP Sahaya”
* The solution shall be accessible from smart devices (e.g. android/IOS mobile phones, tablets etc.)
* Internal & External Integrations: The required application shall be developed with latest technologies and shall be open to integrations with other applications/portals of the Department. The captured data may be integrated with various internal & external interfaces

## Intellectual Property & Licensing

There shall be no restriction with respect to the licenses / number of users using the solution, licenses, number of vehicles getting tracked and hardware devices integrated.

## Application Hosting

* The solution shall be hosted by the vendor as a Private Cloud with dedicated Server / Storage Hardware
* Vendor shall take care of procurement, installation, configuration, hardening of server infrastructure (e.g. CPU, operating system RAM, storage, etc.) that shall host the software application
* The hardware infrastructure shall be able to sustain required load and shall support all functional as well as non-functional requirements.
* All hardware infrastructure proposed to be installed at BBMP Data Center shall be from reputed OEMs.

## Other Technical Requirements

* System must be able to virtually integrate and process information from all applications and devices for Smart City initiatives and entire Smart City vision
* System should also integrate data from project wide functions like Governance, Policy and Risk management, Project Management, Revenue & Expenditure Management.
* System should be based on vendor-agnostic technology and open-source interfaces based on IT standards for controlling all intelligent waste management systems.
* System should be able to acquire, interpret, route, process, and visualize data from thousands of devices and sources.
* System should provide end-to-end monitoring and incident management and should get rid of multiple systems and multiple points of integration between them.
* The system should be able to ensure network device configuration and compliance tracking. It should be able to inherit bundled dashboards, charts, reports and alerts.
* System should be able to monitor virtual machines. Manage storage device health, operability, faults, capacity and performance. Forecast usage growth via trend analysis.
* Solution should come with an embedded low-footprint relational database. The solution should be able to store data in any of the most widely used relational databases.
* Dynamic Mapping: Need to show devices, groups, routes, geofences, links and other objects on geographical maps that use any source, such as Google Maps, Bing Maps, OpenStreetMap, or other. Add layers, controls and selectors to your maps and visually build any custom operator interfaces.
* Alerting and Event Processing: Flexible event management capabilities, including event filtering, acknowledgement, and root cause analysis. Customizable alerts supporting different types of triggers, notifications (e-mail, SMS etc.), escalation, and corrective actions.
* Secure Device Communications: All communications to be bridged through SSL- secured connections and compressed to fit GPRS/3G/LTE and satellite links
* Status Dashboards: Visualize device groups and system-wide KPIs on top-level operator dashboards that have multi-tier drill down navigation to individual devices and services.
* Charting and Trending: Charting to support a wide list of chart types, including dynamically updated charts.
* Comprehensive Reporting: Advanced reporting facility, automatic report generation from any viewed/edited data. Built-in report editor, report printing and exporting in different formats.
* Integrated Security: Designed with a multi-tenant, multi-user approach. Granular permissions and role-based access control need to available in all aspects of the system.
* Maps and GIS plugins for GIS based location services:
* SI should leverage industry leading Maps and GIS related Shared Services for integration with Smart city initiatives like,
  + For Integrated Solution layer for locating site of incidents, site of faulty nodes and devices, etc.
  + Fleet management system for waste collection vehicles and public service vehicles.
  + For Citizen Apps for locating and directing towards points of interest
  + Map modules to be compatible with Google Maps, Open Street Maps, Bing Maps, and other geo informational services. If Internet connection is not available for some reason, it should also be possible to fall back to offline map storage.

# SOLUTION - NON-FUNCTIONAL REQUIREMENTS (NFR)

The Non-Functional Requirements established for the system are described in this section of the document.

## Capacity Estimates and Planning

The architecture of the system shall support the load of 300 concurrent users. The solution is expected to provide acceptable level of performance under peak load

## Performance

The following table provides response time bands for the most significant user-system interaction within the different classes of transaction present in the system.

|  |  |
| --- | --- |
| **Web page response time** | **Target Average End-to-End Response Time (Seconds)** |
| Simple Page / Screen Load | 1 - 3 |
| Complex Page / Screen Load | 5 - 7 |

## Scalability

The system shall be extensible up to additional 50% of existing capacity without necessarily having to

replace the system. It shall be able to scale horizontally and vertically

## Availability

The system shall be available (up and running) to service user requests as per the given below requirements

|  |  |
| --- | --- |
| **Requirement** | **Target** |
| Availability | 99% |
| Mean Time to Repair (MTTR) | 8 hours |

## Maintainability

The Solution shall be easy to maintain. Technical design shall not be monolithic in such a way that any change/repair of a single module affects entire application which needs to be tested every time. Design shall be modular so that only affected module needs to be deployed and tested in case of any change in that module

## Browser Requirements

Solution shall support page display using the following browsers

* IE version 10.x and above
* Firefox version 55.x and above
* Chrome version 48.x and above
* Safari version 1Q.x and above

## Security

Apart from the Data security as mentioned in the Software Requirements Specification section, Vendor shall take care of the security requirements in the following areas

### Directory Services

System shall have capability for integration with active directory supporting LDAP

### Authentication

* System shall support a password-based authentication
* System shall support multiple password policies that can be applied to different categories of users
* System shall support password storage and transmission using strong encryption
* Authentication technologies utilized, must be of industry standards
* System shall allow administrators the ability to create, delete and manage user accounts
* System shall have configurable password restrictions and policies

### Authorization

* System shall support a role based access control model
* System shall support delegated administration of role assignment and management

## Availability & Performance Monitoring

The vendor shall ensure that a tool set is provisioned & configured to monitor the server, storage, database and application for availability and performance. This monitoring shall also include synthetic transaction monitoring to test real-time performance

# POST GO-LIVE SUPPORT

As part of the delivery of the solution, the vendor shall provide Post Go Live Support ("PGLS") for the Solution for 3 years' post releases completion timeline. The vendor shall provide on-site personnel support as mentioned in the manpower requirements specification at a minimum. Beyond, which the vendor shall choose to provide support from off-site locations as appropriate

* Once the systems have been commissioned, the successful bidder shall maintain the system (Hardware & Software) for the period of 3 (Three) years comprehensive annual maintenance period (CAMC).
* The extension of the PGLS contract after 3 (Three) years shall be based on the performance of the successful bidder and there shall be an annual increase which will be mutually agreed on the existing Operation and Maintenance cost for next 2 years. However, BBMP reserves the right to extend the O&M contract based on the mutual agreement between the successful bidder and BBMP
  + It shall involve but not limited to the following activities;
    - Ensure the desired functioning of the Interface / integration
    - Software installation and testing whenever required
    - Provide technical support on system parameters and requirement of BBMP
    - Provide handholding support and training services as part of the post implementation services, on a scheduled basis as well as on a need basis.
  + The comprehensive maintenance and warranty of hardware shall include following but not limited to these;
    - In case of failure, the Successful bidder needs to repair or replace the faulty part/component/device to restore the services at the earliest.
    - The cost of the repairing or replacement of faulty part/component/device has to be entirely born by the Successful bidder.
    - All expenses related to part/component/device, including hiring of specialized technical expertise, in case required, has to be borne by the Successful bidder as part of comprehensive maintenance.
    - The Successful bidder also needs to make alternate arrangement in case of major failure happens in the H/w or S/w, due to which services may be effecting for longer period.
    - After repairing or replacement of the part/component/device, the Successful bidder needs to put the same into operation.
* Note - No extra cost shall be remunerated by BBMP on account of such operations & maintenance activities mentioned herein above.
* PGLS Team shall be available during all working hours and in case of all emergencies.
* All costs related to PGLS Team shall be considered in the OPEX, such as, lodging & boarding, local transportation, out-station travel, insurance, substitution / replacement, training etc.

# KPIs

KPls shall be used to measure the service during the support phase. This is to ensure that the vendor is accountable for the tasks and only get compensated if their work is of high quality and bears maximum efficiency, some basic parameters in KPI as mentioned below. The vendor shall provide daily/monthly reports for these parameters.

## KPIs of Software Application & Measurement

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **KPI** | **Below acceptable level** | **Frequency of Report** |
| **1** | Availability of Application | <=99% | Monthly |
| **2** | Average Response Time | >=5 seconds | Monthly |
| **3** | Security Breach | >=0 | Monthly |
| **4** | Number of Incident tickets per month | >5 | Monthly |

## KPIs of Hardware Devices & Measurement

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **KPI** | **Below acceptable level** | **Frequency of Report** |
| **1** | Uptime of Hardware Devices | <=99% | Monthly |
| **2** | Accuracy of the location tracking | >10 meter | Monthly |
| **3** | Number of Incident tickets per month | >5 | Monthly |

## Operation and Maintenance for 3 (Three) years

1. Once the systems have been commissioned, the successful bidder shall maintain the system (Hardware & Software) for the period of 3 (Three) years comprehensive annual maintenance period (CAMC).
2. The extension of the Operation and Maintenance contract after 3 (Three) years shall be based on the performance of the successful bidder and there shall be an annual increase which will be mutually agreed on the existing Operation and Maintenance cost for next 2 years. However, AUTHORITY reserves the right to extend the O&M contract based on the mutual agreement between the successful bidder and the AUTHORITY.
   1. It shall involve but not limited to the following activities;
      1. Ensure the desired functioning of the Interface / integration
      2. Software installation and testing whenever required
      3. Provide technical support on system parameters and requirement of AUTHORITY
      4. Provide handholding support and training services as part of the post implementation services, on a scheduled basis as well as on a need basis.
   2. The comprehensive maintenance and warranty of hardware shall include following but not limited to these;
      1. In case of failure, the Successful bidder needs to repair or replace the faulty part/component/device to restore the services at the earliest.
      2. The cost of the repairing or replacement of faulty part/component/device has to be entirely born by the Successful bidder.
      3. All expenses related to part/component/device, including hiring of specialized technical expertise, in case required, has to be borne by the Successful bidder as part of comprehensive maintenance.
      4. The Successful bidder also needs to make alternate arrangement in case of major failure happens in the H/w or S/w, due to which services may be effecting for longer period.
      5. After repairing or replacement of the part/component/device, the Successful bidder needs to put the same into operation.

**Note - No extra cost shall be remunerated by AUTHORITY on account of such operations & maintenance activities mentioned herein above.**

1. O & M Team shall be available during all working hours and in case of all emergencies.
2. All costs related to O & M Team shall be considered in the OPEX, such as, lodging & boarding, local transportation, out-station travel, insurance, substitution / replacement, training etc.

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Profile** | **Technical Qualification** | **Years of experience** |
| 1 | O & M  In-charge | BE / B. Tech (IT, CS, EC) | 5 years |
| 2 | L1  Support resource | Graduate with experience in Computer/IT related technical call center operation  Experience in Application administration, password reset, user re-initiation, should receive calls regarding  complaints (to be available for 16 hours each day) | 2-3 years |
| 3 | L2  Support resource | B. Tech : Experience in Application configuration, patch management, firmware update, application fine  tuning, configuration management, application hardening | 3-5 years |

Note: SI will be responsible for L1 and L2 support for Hardware installed as part of this and SI shall coordinate with other OEM's for earlier project scope, however the maintenance and warranty of the earlier hardware is out of scope for bidder.

* 1. **Project Implementation Schedule, Deliverables and Payment Terms**

1. **Project Implementation and Payment Schedule**

Project Implementation Schedule, Deliverables and Payment Terms shall be as per the Table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Activity** | **Timelines (in Weeks)** | **Payment Milestone (CAPEX**  **ONLY)** |
| 1. | Project Kick Off | T | 5% |
| 2. | SRS preparation | T +3 |
| 3. | Soft launch Module 4 (Aadhaar based Biometric fingerprint  and IRIS Scanner Attendance System)+ necessary documents | T+ 6 |
| 4. | SRS Approval and Sign off from the authority | T+ 4 |
| 5. | Module 1 (Vehicle Tracking Management System) | T +8 | 25% |
| 6. | Device installation & commissioning + necessary documents | T +8 |
| 7. | UAT Module 1 | T +9 |
| 8. | Soft Launch Module 1 | T +10 |
| 9. | Module 2 (Mobile Application)+ necessary documents | T+ 9 | 20% |
| 10. | UAT Module 2 | T+ 10 |
| 11. | Soft Launch Module 2 | T+ 11 |
| 12. | Module 3 (Smart Waste Management System)+ necessary  documents | T+ 12 | 25% |
| 13. | UAT Module 3 | T+ 15 |
| 14. | Soft Launch Module 3 | T+ 15 |
| 15. | Integration Testing | T+ 16 | 25% |
| 16. | FAT | T+ 16 |
| 17. | Go Live (Final Acceptance and Sign off by AUTHORITY) = G | T+ 16 |
|  | **TOTAL CAPEX** | | **100%** |

|  |  |  |  |
| --- | --- | --- | --- |
| **S.**  **No** | **Activity** | **Timelines (in Weeks)** | **Payment Milestone**  **OPEX ONLY** |
| 1. | Detailed Operation and Maintenance (O&M) Plan & Reports   * Operation and maintenance procedures and guidelines * Tracking report of all project assets in real-time * Annual maintenance requirements, timelines, and schedules * Detailed Approach of O&M teams with client’s PMO team * Detailed plan for monitoring of SLAs and performance of the overall system * SLA Conformance & Compliance Report * Fortnightly Progress Report * Monthly SLA Monitoring Report and Exception Report * Quarterly Security Report * Issues logging and resolution report * Cloud Consumption Report | G+3 Years | To be paid in equal quarterly installments based on annual OPEX post GO-Live, |

1. **Other Terms & Conditions**
2. No advance payment shall be made.
3. The Bidder’s request(s) for payment shall be made to the AUTHORITY in writing, accompanied by an invoice describing, as appropriate, Acceptance certificate of services completed. The invoice should be submitted and upon fulfilment of other obligations stipulated in the contract.
4. The request for payment shall be made to the AUTHORITY in writing, accompanied by invoices describing, as appropriate, the services performed, and by the required documents submitted pursuant to general conditions of the contract and upon fulfilment of all the obligations stipulated in the Contract.
5. Due payments shall be made promptly by the AUTHORITY, generally within 30 (Thirty) days after submission of an invoice or request for payment by SI after Approval & Sign Off of the Milestone by AUTHORITY.
6. All remittance charges shall be borne by the SI.
7. In case of disputed items, the disputed amount shall be withheld and shall be paid only after settlement of the dispute.
8. Any penalties/ liquidated damages, as applicable, for delay and non-performance, as mentioned in this RFP document, shall be deducted from the due payments of the respective milestones.
9. Payment shall be made in Indian Rupees by RTGS / NEFT on Bank in the name of SI.
10. It is the responsibility of the bidders to quote for and provide all the H/w and S/w for meeting all the requirements of the RFP. All adjunct / ancillary hardware, software, equipment, services shall be construed to have been included in the Bid, whether specifically mentioned or not in the RFP / BOM.

## Documentations

The selected SI shall provide the following documentations in hard as well as soft copies:

1. Detail Project Plan
2. Fortnightly progress reports
3. Software Requirement Specification (SRS) document containing detailed requirement capture and analysis including functional requirement, Interface Specifications, application security requirements.
4. Solution Architecture / Design document,
5. Technical document covering documentation of code, algorithms, Interfaces and APIs,
6. Source Code of application, Executable files, Master data configuration,
7. Technical Specification of all installed devices, Environment Details,
8. Database Structure document,
9. Training Manuals and literature
10. Systems Administration Manuals
11. User manuals,
12. Installation Manuals
13. Operational Manuals
14. Maintenance Manuals
15. Security policy and procedure for software including Password security, logical access security, operating system security, data classification, and application security and data backups.
16. AV Presentations / Video Tutorials including self-learning modules of the working of the product. This shall be used to inform the working of the solution to the architect and AUTHORITY both.

## Product Upgrades

The selected bidder shall provide AUTHORITY with all new versions, releases, and updates to all the Software provided during the Operations and maintenance period without any additional cost. All such up-gradations to the solution should be submitted to AUTHORITY in the form of logs or AUTHORITY should be able to access the logs to all changes made to the system. All such upgrades or any part of the solution should undergo and comply with the security norms in terms of application and functional audits. All such Audit logs and reports should become a part of the quarterly submission by the bidder.

## Assumptions

The SI shall perform majority of the work at its own premises as per the scope of work given in Section 2.0 of this RFP. The AUTHORITY during normal course of action will be liable to provide only seating space with access to primary needs (water and electricity). Hardware and Software required by the team of SI (deployed onsite) will need to be accounted for in the financial proposal to be submitted in response to this RFP for the entire project duration (including Go-live and O&M).

However, the SI shall be required to meet designated officials of the AUTHORITY once per week (day and time TBD) for a weekly status meeting. All project review meetings will be held at the AUTHORITY’s facility and attended by the SI’s representatives. The AUTHORITY shall provide and arrange for meeting spaces within its facility for all required SI meetings.

Authority shall provide ward wise hard copy route maps of garbage collection vehicles to the selected SI. SI is expected to digitize these maps after field visits and field verifications and create linear reference based network GIS database. SI must ensure that 100% of the defined route of vehicles in each ward of IMC has been properly digitized. Any gaps in the data (route) if found, must be corrected by the SI. Authority shall provide necessary support for ensuring completion of this task,

## Annexure 1 - Guidelines for Pre-Qualification Proposal Annexure 1.1 - Check-list for the Pre-Qualification Proposal

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S**  **No.** | **List of Documents** | **File Name / Reference Page No.** | **Submitted (Y / N)** | **Description** |
| 1. | Proof of Tender Fee and EMD submitted |  |  |  |
| 2. | Bid Covering Letter  As per format provided at [Annexure 1.2](#_bookmark74) |  |  | Reference No: Date of Letter: |
| 3. | Bidders’ Particulars  As per format provided at [Annexure 1.3](#_bookmark76) |  |  | Name of  Bidder(s): |
| 4. | Consortium Agreement (in case of consortium)  As per format provided at [Annexure 1.5](#_bookmark78) |  |  | Name of Lead Member:  Name of  Consortium member:  Date of  Agreement: |
| 5. | Power of Attorney in favour of Authorized signatory  As per format provided at [Annexure 6](#_bookmark93) |  |  | Date of PoA: Name of  Authorize Person: |
| 6. | Copy of Certificate of Incorporation / Registration under Companies Act, 1956/2013/ LLP Act 2008 or  corresponding Act in abroad |  |  | Registration Number:  Date of  Incorporation: |
| 7. | Audited and Certified Balance Sheet and Profit/Loss Account for the last 3 (Three) Financial Years.  Certificate from the Statutory Auditor on turnover details from the “business areas” over the last 3 (Three) audited financial years 2014- 15, 2015-16 and 2016-17.  As per format provided at [Annexure 7](#_bookmark94)  Certificate from the Statutory Auditor on net worth. |  |  | Year-wise details of turnover Average Turnover:  Net worth |
| 8. | Valid copy any 2 (Two) of the below Certifications:   * ISO 9001:2008 or Higher for Software Development / System Integration * ISO 20000:2011 for IT   Service Management   * ISO/IEC 27001:2013 for   Information Security Management System  AND   * CMMI Level 3 or Higher for   Software Development (Mandatory) |  |  | Issuing By: Issuing Date: Validity Date: |
| 9. | Declaration for not blacklisted by Central/State Government/ PSU entity in India or similar agencies globally for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices as on date of submission of the proposal.  As per format provided at Annexure 4 |  |  | Reference No: Date of Letter: |
| 10. | List and address of offices in Madhya Pradesh with GST Registration OR Undertaking from authorized signatory to open the local office with GST registration, within 60 days of signing the contract, if project is awarded. |  |  | Proof / Undertaking |
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| 11. | Declaration/Undertaking by an authorized signatory of the company certifying availability of at least 200 employees in Technical role on their payroll for the proper execution of the  project. |  |  |  |

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| --- | --- | --- | --- | --- |
| **S**  **No.** | **List of Documents** | **File Name / Reference Page**  **No.** | **Submitted (Y / N)** | **Description** |
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**Annexure 1.2 - Pre-Qualification Cover Letter**

(To be submitted on the letterhead of the bidder) Date:

#### To

**The Commissioner**

**Bruhat Bengaluru Mahanagara Palike**

**N.R. Square, Bengaluru – 560 002**

**Subject**: Bid for “***Request for Proposal for Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of Integrated Solid Waste Management System for BBMP***”

**NIT No: 40/BBMP/Project/17-18**

Dear Sir,

With reference to your “***Request for Proposal for Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of Integrated Solid Waste Management System for BBMP*”**, we hereby submit our Prequalification Proposal, Technical Proposal, and Financial Proposal, for the same.

We hereby declare that:

1. We hereby acknowledge and unconditionally accept that the Authority can at its absolute discretion apply whatever criteria it deems appropriate, not just limiting to those criteria set out in the RFP and related documents, in short listing of bidder for providing services.
2. We have submitted EMD of INR [ ] in the form of [ ] and Tender fee of INR

[ ] online through e-Tendering Portal (www.eproc.karnataka.gov.in),

1. We hereby declare that all information and details furnished by us in the Bid are true and correct, and all documents accompanying such application are true copies of their respective originals.
2. We agree to abide by our offer for a period of 180 days from the date of opening of pre-qualification bid prescribed by **Authority** and that we shall remain bound by a communication of acceptance within that time.
3. We have carefully read and understood the terms and conditions of the RFP and the conditions of the contract applicable to the RFP. We do hereby undertake to provision as per these terms and conditions.
4. In the event of acceptance of our bid, we do hereby undertake:
   1. To supply the products and commence services as stipulated in the RFP document
   2. To undertake the project services for entire contract period from the date of signing of the contract as mentioned in the RFP document.
   3. We affirm that the prices quoted are inclusive of design, development, delivery, installation, commissioning, training, providing facility management and handholding support, and inclusive of all out of pocket expenses, taxes (including GST), duties, levies, discounts etc.
5. We do hereby undertake, that, until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and notification of award of contract, shall constitute a binding contract between us.
6. We understand that the **Authority** may cancel the bidding process at any time and that **Authority** is not bound to accept any bid that it may receive without incurring any liability towards the bidder.
   1. We fully understand and agree to comply that on verification, if any of the information provided in our bid is found to be misleading the selection process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so

In case of any clarifications please contact email at

Thanking you,

Yours sincerely, (Signature of the bidder)

Printed Name Designation

#### Seal

Date:

Place:

Business Address:

**Annexure 1.3 - Format to share Bidder’s and Bidding Firms Particulars** The Table below provides the format in which general information about the bidder must be furnished.

|  |  |  |
| --- | --- | --- |
| **S No** | **Information** | **Details** |
| 1. | Name of Bidding firm: |  |
| 2. | Address and contact details of Bidding firm: |  |
| 3. | Firm Registration Number and Year of Registration |  |
| 4. | Web Site Address |  |
| 5. | Status of Company (Public Ltd., Pvt. Ltd., etc.) |  |
| 6. | EPF Registration No |  |
| 7. | Company’s GST Registration No. |  |
| 8. | Company’s Permanent Account Number (PAN) |  |
| 9. | Company’s Revenue for the last 3 years (Year wise) |  |
| 10. | Name, Designation and Address of the contact person to  whom all references shall be made regarding this RFP: |  |
| 11. | Telephone number of contact person: |  |
| 12. | Mobile number of contact person: |  |
| 13. | Fax number of contact person: |  |
| 14. | E-mail address of contact person: |  |

Please submit the relevant proofs for all the details mentioned above along with your Bid response

Authorized Signatory Name

Seal

## Annexure 1.4. - Format to Project Citation (Refer [Annexure 2.6](#_bookmark85))

***Note: The Bidder is required to use the same format for all the projects referenced by the bidder for the Pre-Qualification criteria and technical bid evaluation.***

**Annexure 1.5 - Consortium Agreement**

**DRAFT MEMORANDUM OF UNDERSTANDING EXECUTED BY MEMBERS OF THE CONSORTIUM**

*[On Non-judicial stamp paper duly attested by notary public]*

This Memorandum of Understanding (MoU) entered into this day of [*Date*] [*Month*] 2019 at [*Place*] among (hereinafter referred to as " ") and having office at [*Address*], India, as Party of the First Part and (hereinafter referred as " ") and having office at [*Address*], as Party of the Second Part.

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

WHEREAS BBMP, has issued a Request for Proposal dated [*Date*] (RFP) from the Applicants interested in **Request for Proposal for *Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of Integrated Solid Waste Management System for BBMP*:**

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

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

1. The purpose of this Agreement is to define the principles of collaboration among the Parties to:
   1. Submit a response jointly to Bid for the “**Request for Proposal for *Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP*”** as a Consortium.
   2. Sign Contract in case of award.
   3. Provide and perform the supplies and services which would be ordered by the Authority pursuant to the Contract.
2. This Agreement shall not be construed as establishing or giving effect to any legal entity such as, but not limited to, a company, a partnership, etc. It shall relate solely towards the Authority for “**Request for Proposal for *Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP*”** for and related execution works to be performed pursuant to the Contract and shall not extend to any other activities.
3. The Parties shall be jointly and severally responsible and bound towards the Authority for the performance of the works in accordance with the terms and conditions of the RFP document, and Contract.
4. ------------------------------------ (Name of Party) shall act as Lead Member of the Consortium. As such, it shall act as the coordinator of the Party’s combined activities and shall carry out the following functions:

a.To ensure the technical, commercial and administrative co-ordination of the work package

b. To lead the contract negotiations of the work package with the Authority.

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

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

1. That the Parties shall carry out all responsibilities as Developer in terms of the Project Agreement.
2. That the broad roles and the responsibilities of each Party at each stage of the Bidding shall be as below:

Party A: Party B:

1. That the Parties affirm that they shall implement the Project in good faith and shall take all necessary steps to see the Project through expeditiously.
2. That this MoU shall be governed in accordance with the laws of India and courts in Madhya Pradesh shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

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

(Party of the first part) (Party of the second part) Witness:



## Annexure 2. – Guidelines for Technical Proposal

**Annexure 2.1 - Check-list for the documents to be included in the Technical Proposal**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S No.** | **List of Documents** | **Name of**  **File /**  **Reference page no.** | **Submitted (Y / N)** | **Description** |
| 1. | Technical Bid Covering Letter |  |  | Reference No: Date of  Letter: |
| 2. | Technical Compliance Matrix |  |  | - |
| 3. | Project Implementation Approach |  |  | - |
| 4. | OEM Authorization Form  As per format provided at [Annexure](#_bookmark83) [2.4](#_bookmark83) |  |  | OEM Name: Date: |
| 5. | Audited and Certified Balance Sheet and Profit/Loss Account for the last 3 (Three) Financial Years.  Certificate from the Statutory Auditor on turnover details from the “business areas” over the last 3 (Three) audited financial years 2015- 16, 2016-17 and 2017-18  As per format provided at [Annexure](#_bookmark94) [7](#_bookmark94)  Certificate from the Statutory Auditor on net worth. |  |  |  |
| 6. | Copy of Work order and completion certificate to support that the bidder has completed / substantially completed at least 1 (One) e- governance projects as a System Integrator in India with the project cost not less than Rs. 8 Crore and remaining projects with cost not less than Rs. 5 Crore in last 7 financial years (as on the last date of bid submission).  As per [Annexure 2.6](#_bookmark85) |  |  |  |
| 7. | Copy of Work order and completion certificate to support that Sole Bidder or Lead Member or any member of its  consortium should have experience of large successful Go-Live/ Completed/ongoing project during the last 7 (Seven) financial years (as on the last date of bid submission).  The project should include any of 2 (two) components of the following:   * Command Control Center * Work Flow Management Solution * Operation and maintenance services as a SI * Urban/Metropolitan Vehicle Tracking System * Solid Waste Management Solution   Atleast one project should have cost not less than Rs. 8 Crore and rest of the projects not less than Rs. 5 Crore.  As per [Annexure 2.6](#_bookmark85) |  |  |  |
| 8. | Copies of following Certifications:  — CMMi Level 3 or above  — ISO 9001:2008  — ISO 20000:2011  — ISO/IEC 27001:2013 |  |  |  |
| 9. | CVs of proposed resources in required format  As per [Annexure 2.7](#_bookmark86) |  |  |  |
| 10. | Duly filled ‘Technical Compliance Matrix” as per [Annexure 2.5.1](#_bookmark85) |  |  |  |

**Annexure 2.2. - Technical Bid Cover Letter**

(To be submitted on the Letterhead of the responding firm) Date: dd/mm/yyyy

To

**The Commissioner**

**Bruhat Bengaluru Mahanagara Palike**

**N. R. Square, Bengaluru – 560 002**

**Sub :** Request for Proposal for “**Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP**”

NIT No: 40/BBMP/Project/17-18 Dear Sir,

Having examined the RFP, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide the professional services as required and outlined in the RFP for **“Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP**“

We attach hereto the technical response as required by the RFP, which constitutes our proposal. We undertake, if our proposal is accepted, to adhere to the implementation plan (Project schedule) for providing Professional Services in **“Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP**“, put forward in RFP or such adjusted plan as may subsequently be mutually agreed between us and BBMP or its appointed representatives.

If our proposal is accepted, we will obtain a Performance Bank Guarantee issued by a nationalized bank in India, for a sum of equivalent to 5% of the contract value for the due performance of the contract.

We agree for unconditional acceptance of all the terms and conditions set out in the RFP document and also agree to abide by this tender response for a period of 180 days from the date of submission of Bid and it shall remain binding upon us with full force and virtue, until within this period a formal contract is prepared and executed, this tender response, together with your written acceptance thereof in your notification of award, shall constitute a binding contract between us and BBMP.

We confirm that the information contained in this proposal or any part thereof, including its exhibits, schedules, and other documents and instruments delivered or to be delivered to BBMP is true, accurate, and complete. This proposal includes all information necessary

to ensure that the statements therein do not in whole or in part mislead BBMP as to any material fact.

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

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

Date: (Signature) (Name)

(In the capacity of ) [Seal / Stamp of bidder]

## Annexure 2.3 - Project Implementation Approach

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

1. Understanding of requirement and Implementation approach
   * Understanding of requirements
   * Proposed Architecture and its components
   * Work Plan & its adequacy
2. Robustness and quality
   * End to end integrated solution proposed
   * Equipment deployment and integration approach encompassing all solutions
   * Timelines and modalities for implementation in a time bound manner
   * Project implementation approach or strategy and operations and maintenance plan including comprehensiveness of fallback strategy and planning during rollout
   * Any other area relevant to the scope of work and other requirements of the project
3. Assessment of Manpower deployment, Training and Handholding plan
   * Deployment strategy of Manpower
   * Contingency management
   * Mobilization of existing resources and additional resources as required
   * Training and handholding strategy
4. Project Monitoring and Communication Plan– Bidder’s approach to project monitoring and communications among stakeholders.
5. Risk Management Plan – Bidder’s approach to identify, respond / manage and mitigate risks
6. Quality Control plan – Bidder’s approach to ensure quality of work and deliverables
7. Operation and Maintenance Plan
8. Escalation matrix during contract period

#### Note:

* + All the pages (documentary proofs and other documents that may be attached) should contain page numbers and would have to be uniquely serially numbered.

## Annexure 2.4. - Format for OEM Authorization

(This form has to be provided by the OEMs of the products proposed)

Date:

To,

**The Commissioner**

**Bruhat Bengaluru Mahanagara Palike**

**N. R. Square, Bengaluru – 560 002**

RFP Ref: <-->

Dear Sir,

We \_, (name and address of the manufacturer) who are established

and reputed manufacturers of having factories at

(addresses of manufacturing / development locations) do hereby authorize M/s

(name and address of the bidder) to bid, negotiate and conclude the contract with you against the abovementioned tender for the above equipment / software manufactured / developed by us.

We herewith certify that the abovementioned equipment / software products are not end of the life and we hereby undertake to support these equipment/software for the duration of minimum 3 years from the date of Submission of the Bid.

Yours faithfully, (Name)

(Name of Producers)

*Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. The Bidder in its Bid should include it.*

## Annexure 2.5. - Deleted.

**Annexure 2.6 – Format for Project Citation**

|  |  |  |
| --- | --- | --- |
| **Item** | **Details** | **Attachment Ref. Number** |
| **Name of the project** |  |  |
| Client for which the project  was executed |  |  |
| Name and contact details of  the client |  |  |
| **Project Details** |  |  |
| Description of the project |  |  |
| Scope of services |  |  |
| Outcomes of the project |  |  |
| **Other Details** |  |  |
| Total cost of the project |  |  |
| Total cost of the services  provided by the Bidder |  |  |
| Duration of the project (no. of months, start date, completion date, current  status) |  |  |
| **Other Relevant Information** |  |  |
| Letter from the client to indicate the successful completion of the projects (if  any) |  |  |
| Copy of Work  Order/Agreement |  |  |

Note: The Bidder is required to use above formats for all the projects referenced by the bidder for the technical qualification criteria

## Annexure 2.7 –Format for CV of Key Personnel

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Name of the Staff | | |  | | | | | | |
| 2 | Current Designation in the  Organization | | |  | | | | | | |
| 3 | Proposed Role in the Project | | |  | | | | | | |
| 4 | Proposed Responsibilities in the  Project | | |  | | | | | | |
| 5 | Date of Birth | | |  | | | | | | |
| 6 | Education | | |  | | | | | | |
| 7 | Summary of Key Training and  Certifications | | |  | | | | | | |
| 8 | Countries of Work Experience | | |  | | | | | | |
| 9 | Language Proficiency | | |  | Language | Reading | Writing | Speaking |  | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| 10 | Employment Record  (For the total relevant experience) | | |  | From / To: | |  | |  | |
| Employer: | |  | |
| Position Held: | |  | |
|  | | | | | | |
| 11 | Total No. of Years of Work  Experience | | |  | | | | | | |
| 12 | Total No. of Years of Experience for  the Role proposed | | |  | | | | | | |
| 13 | Highlights of relevant assignments handled and significant accomplishments (Use following format for each project) | | | | | | | | | |
|  | Name of assignment or project: |  | | | | | | |  |
| Year : |  | | | | | | |  |
| Location: |  | | | | | | |  |
| Client: |  | | | | | | |  |
| Main project features: |  | | | | | | |  |
| Positions held: |  | | | | | | |  |
| 14 | Certifications  I, the undersigned certify that:  To the best of my knowledge and belief, this CV correctly describes me, my Qualifications, and my experience. Yes/No  I understand that my willful misstatement described herein may lead to my disqualification or dismissal, if engaged.  Name & Signature (Authorized Representative) | | | | | | | | | |

**Annexure 3 – Guidelines for Financial Proposal** **Annexure 3.1 - Financial Proposal Cover Letter** (To be submitted on the Letterhead of the Bidder)

Date: dd/mm/yyyy To

**The Commissioner**

**Bruhat Bengaluru Mahanagara Palike**

**N. R. Square, Bengaluru – 560 002**

**Subject**: Bid for the Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP

#### NIT No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dear Sir,

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 Agreement & in conformity with the said bidding document for the same.

1. 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 taxes/duties as mentioned in the financial bid (BoQ).
2. I / We undertake, if our bid is accepted, to deliver the goods & services in accordance with the delivery schedule specified in the RFP.
3. I/We undertake to successfully operationalize the entire solution as per scope of work mentioned in the RFP document.
4. I/ We have examined and have no reservations to the Bidding Documents, including any corrigendum/addendums issued by BBMP;
5. I/We understand that any additional hardware and software required to make the entire solution operational shall have to be provided by us.
6. I/ We hereby declare that in case the contract is awarded to us, we shall submit the contract performance bank guarantee as prescribed in the RFP.
7. I / We agree to abide by this bid for a period of 180 days from the date of bid submission and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
8. 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.
9. 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.

We understand that you are not bound to accept the lowest or any bid you may receive. We agree to all the terms & conditions as mentioned in the RFP document and submit that we have not submitted any deviations in this regard.

In witness thereof, I/we submit this Bid under and in accordance with the terms of the RFP document.

Yours faithfully,

(Signature of the Authorized signatory)

(Name and designation of the of the Authorized signatory)

Date:

Place:

Name and seal of Bidder/Lead Member

## Annexure 3.2 - Financial Proposal Format & Instructions

**To be submitted on e-Tendering Portal only (i.e.** www.eproc.karnataka.gov.in) **NIT No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

#### Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP (Inclusive of all taxes and duties)

* + 1. **Total Price Summary**

|  |  |  |  |
| --- | --- | --- | --- |
| **S No** | **Head** | **Amount (In INR)** | **Amount (In**  **Words)** |
| **1** | **Total CAPEX** |  |  |
| **2** | **Total OPEX for 3 years** |  |  |
| **3** | **Grand Total (1 + 2)** |  |  |

**NOTE: CAPEX shall not be more than 70% of the total project cost.**

**OPEX shall not be less than 30% of the total project cost.**

* + 1. **Price component for CAPEX:**

The Bidder shall consider all the components and quantity to fulfill the RFP and project requirements in totality.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.**  **No.** | **Item Description** | **Quantity (Q)** | **Unit Rate (in INR)**  **(R)** | **Total Price P= Q x R**  **(in INR)** |
| **A** | **Cost for Hardware Materials /Equipment** | | |  |
| A 1 | 8 Port Industrial switches | Depending on the Server / Storage Hardware being proposed |  |  |
| A2 | LED Screens for Command Center | 10 |  |  |
| A3 | Desktop PCs for Command Center & Support Staff | 15 |  |  |
| A4 | Vehicle Tracking Devices for Compactors & Auto tippers | 6500 |  |  |
| A5 | Active RFID Tags for Auto tippers | 5000 |  |  |
| A6 | RFID Readers | 600 |  |  |
| A7 | Any other item required to complete the scope of work | - |  |  |
| A8 | QR Code stickers & Readers | Per Unit |  |  |
| A9 | Server and Storage | As per the application availability & performance requirements |  |  |
| **Total Cost of A (1+2+3+…..+8+9) (In INR)** | | | |  |

* + 1. **Price Component for OPEX** (including all incidental and logistics costs)

|  |  |  |  |
| --- | --- | --- | --- |
| **S.**  **No.** | **Period** | **Quantity** | **Annual Operation and Maintenance Cost (INR)** |
| **C** | **Hardware, Software, Services, Equipment,**  **etc. (repair and replacement as necessary)** | |  |
| C1 | Year 1 | Lumpsum |  |
| C2 | Year 2 | Lumpsum |  |
| C3 | Year 3 | Lumpsum |  |
| **Total Cost of C (1+2+3) (In INR)** | | |  |
| **D** | **Human Resources** | |  |
| D1 | Year 1 | Lumpsum |  |
| D2 | Year 2 | Lumpsum |  |
| D3 | Year 3 | Lumpsum |  |
| **Total Cost of D (1+2+3) (In INR)** | | |  |
| **TOTAL OPEX Amount = C + D (INR)** | | |  |
| **TOTAL OPEX Amount in Words** | | |  |

#### Instructions:

1. *The actual quantity for the given items may vary. Payment shall be made based on unit cost quoted for the particular item on actual work/item undertaken/supplied.*
2. *All items provided should be under Insurance. The Insurance should be for entire duration of the Project (including 3 Years of O&M) and comprehensive covering damages for Theft, Fire, Natural Calamities, Riots and Terrorists activities etc.*
3. *Value quoted as total price must contain all the components required for the successful implementation of the project. Nothing extra will be paid by the authority beyond the value quoted in the above form.*
4. *Price to be inclusive of all adjunct / ancillary hardware, software, services and works, whether specifically mentioned or not*
5. *AUTHORITY shall take into account all Taxes, Duties & Levies for the purpose of evaluation.*
6. *The Bidder needs to account for all Incidental as well as Out of Pocket expenses, no additional payment shall be made by AUTHORITY whatsoever for any omission.*
7. *Bidder should refer the RFP for details on the technical requirements of the system and the benchmark specifications for the items mentioned in the financial formats.*
8. *Bidders must carefully read the Scope, Technical Requirements and the SLAs mentioned in the RFP and accordingly propose the software, hardware, accessories and services and their respective quantities required to completely meet the requirements of this RFP.*
9. *The extension of the Operation and Maintenance contract after 3 years shall be based on the performance of SI and mutual agreement between SI and the AUTHORITY.*

## Annexure 4 - Format for Declaration by the bidder for not being Blacklisted / Debarred

(To be submitted on the Letterhead of the Bidder) Date: dd/mm/yyyy

To

**The Commissioner**

**Bruhat Bengaluru Mahanagara Palike**

**N. R. Square, Bengaluru – 560 002**

**Subject:** Declaration for not being debarred / black-listed by Central / any State Government department in India as on the date of submission of the bid

#### NIT No: 40/BBMP/Project/17-18

Dear Sir,

I, authorized representative of , hereby solemnly confirm that the

Company is not debarred / black-listed by any Central/State

Government/ PSU entity in India or similar agencies globally for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices or for any other reason as on last date of submission of the Bid. In the event of any deviation from the factual information/ declaration, BBMP reserves the right to reject the Bid or terminate the Contract without any compensation to the successful bidder.

Thanking you,

Yours faithfully,

Signature of Authorized Signatory (with official seal)

Date:

Name:

Designation:

Address:

Telephone & Fax:

E-mail address:

## Annexure 5 - Format of sending pre-bid queries

#### NIT No: 40/BBMP/Project/17-18

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Bidder’s Request for Clarification** | | | | | |
| Name and complete official address of Organization submitting query / request for clarification | | | | Telephone, Fax and E-mail of the organization Tel:  Fax:  Email: | |
| **Sr.**  **No.** | **Clause No.** | **Page No.** | **Content of RFP Requiring Clarification** | | **Change Requested/ Clarification required** |
| 1 |  |  |  | |  |
| 2 |  |  |  | |  |

Signature:

Name of the Authorized signatory:

Company seal:

Date and Stamped

**Note: Bidder(s) are requested to send the queries in PDF with Sign and Company Seal and also in MS Excel for making consolidation process easy.**

**Annexure 6 - Power of Attorney**

*[To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant Stamp Act. The stamp paper to be in the name of the company who is issuing the power of attorney]*

Know by all men by these presents, We (Name of the Bidder and address of their registered office) do hereby constitute, appoint and authorize Mr. / Ms \_ (name and residential address of Power of attorney holder) who is presently employed with us and holding the position of

as our Attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our Proposal for the **“Request for Proposal for Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP”**, including signing and submission of all documents and providing information / responses to the BBMP, representing us in all matters before BBMP, and generally dealing with the BBMP in all matters in connection with our Proposal for the said Project.

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

For Name:

Designation: Date:

Time:

Seal:

Business Address:

Accepted,

(Signature)

(Name, Title and Address of the Attorney)

Note:

* + The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
  + The Power of Attorney shall be provided on Rs.100/- stamp paper.
  + The Power of Attorney should be supported by a duly authorized resolution of the Board of Directors of the Bidder authorizing the person who is issuing this power of attorney on behalf of the Bidder.

#### Lead Member has to submit the Power of Attorney in favour of Authorized signatory in below given format in case of Consortium.

**POWER OF ATTORNEY FOR LEAD MEMBER BY CONSORTIUM MEMBER**

BBMP has invited Bids from interested companies for “**Request for Proposal for Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP** ("Project").

Whereas, ---------------------, and . (collectively the "Consortium”) being members of the Consortium are interested in offering for the services in accordance with the terms and conditions of the Request for Proposal document (RFP) and other connected documents in respect of the Project, and;

Whereas, it is necessary under the RFP document for the members of the Consortium to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's Bid for the Project.

Whereas, we have decided that M/s shall be Lead Member of this Consortium.

NOW THEREFORE KNO W ALL MEN BY THESE PRESENTS

We, ---------------------------- having our registered office at., (hereinafter referred to as the "Member") do hereby designate, nominate, constitute, appoint and authorize --------------------------------------------- having its registered office at ., being one of the members of the Consortium, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the "Attorney"). We hereby irrevocably authorize the Attorney (with power to sub-delegate) to conduct all business for and on behalf the Consortium and any one of us during the Bid process and, in the event the Consortium is awarded the Contract, during the execution of the project, and in this regard, to do on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the selection of the Consortium, including but not limited to signing and submission of all Applications, Proposals and other Documents and writings, participate in pre-proposal and other conferences, respond to queries, submit information/ documents, sign and execute contracts and undertakings

consequent to acceptance of Bid of the Consortium and generally to represent the Consortium in all its dealings with the BBMP and/or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Consortium's Bid for the above Project and/or upon award thereof till the Contract Agreement is entered into with the BBMP.

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

IN WITNESS WHEREOF WE THE MEMBER ABOVE NAMED HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS  DAY OF

..20

For 

(Name & Title)

Witnesses:

1.

2. 

(To be executed by the Member of the Consortium)

#### Note:

* The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
* Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder:

## Appendix 7 – Format for Annual Turnover

#### ANNUAL TURNOVER

**Requirements:** The Average Annual Turnover to be provided in the following format for the last 3 Audited Financial Years (2015-16, 2016-17, 2017-18).

|  |  |  |  |
| --- | --- | --- | --- |
| **Financial Information** | | | |
| Financial Year | 3rd Last Financial Year | 2nd Last  Financial Year | Last  Financial Year |
| Annual Turnover (in INR) |  |  |  |
| **AVERAGE ANNUAL TURNOVER** | | | |
| Note: Annual turnover should be supported by Audited Balance Sheet and certified by  Statutory Auditors. | | | |

## Annexure 8 – Format for Performance Bank Guarantee

For Contract Performance Bank Guarantee

***Ref :*** < --- >

Date:

Bank Guarantee No.:

To

**The Commissioner**

**Bruhat Bengaluru Mahanagara Palike**

**N. R. Square, Bengaluru – 560 002**

Dear Sir,

PERFORMANCE BANK GUARANTEE – For <Project Name> WHEREAS

M/s. (name of Bidder), a company registered under the Companies Act, 1956/2013, having its registered and corporate office at (address of the Bidder), (hereinafter referred to as “our constituent”, which expression, unless excluded or repugnant to the context or meaning thereof, includes its successors and assigns), agreed to enter into a Contract dated (Hereinafter, referred to as “Contract”) with you for “**Request for Proposal for The Selection of System Integrator for Design, Development, Implementation and Operation & Maintenance of SWM Fleet Management System for BBMP”**, in the said Contract.

We are aware of the fact that as per the terms of the Contract, M/s. (name of Bidder) is required to furnish an unconditional and irrevocable Bank Guarantee in your favour for an amount of 5% of the Total Contract Value, and guarantee the due performance by our constituent as per the Contract and do hereby agree and undertake to pay any and all amount due and payable under this bank guarantee, as security against breach/ default of the said Contract by our Constituent.

In consideration of the fact that our constituent is our valued customer and the fact that he has entered into the said Contract with you, we, (name and address of the bank), have agreed to issue this Performance Bank Guarantee.

Therefore, we (name and address of the bank) hereby unconditionally and irrevocably guarantee you as under:

In the event of our constituent committing any breach / default of the said Contract, and which has not been rectified by him, we hereby agree to pay you forthwith on demand

such sum/s not exceeding the sum of 5% of the Total Contract Value i.e., <in

words> without any demur.

Notwithstanding anything to the contrary, as contained in the said Contract, we agree that your decision as to whether our constituent has made any such default(s) / breach(es), as aforesaid and the amount or amounts to which you are entitled by reasons thereof, subject to the terms and conditions of the said Contract, will be binding on us and we shall not be entitled to ask you to establish your claim or claims under this Performance Bank Guarantee, but will pay the same forthwith on your demand without any protest or demur.

This Performance Bank Guarantee shall continue and hold good till 180 days after completion of the Contract Period, subject to the terms and conditions in the said Contract.

We bind ourselves to pay the above said amount at any point of time commencing from the date of the said Contract until 6 months after the completion of Contract Period.

We further agree that the termination of the said Agreement, for reasons solely attributable to our constituent, virtually empowers you to demand for the payment of the above said amount under this guarantee and we would honor the same without demur.

We hereby expressly waive all our rights: Requiring to pursue legal remedies against BBMP; and for notice of acceptance hereof any action taken or omitted in reliance hereon, of any defaults under the Contract and any resentment, demand, protest or any notice of any kind.

We the Guarantor, as primary obligor and not merely Surety or Guarantor of collection, do hereby irrevocably and unconditionally give our guarantee and undertake to pay any amount you may claim (by one or more claims) up to but not exceeding the amount mentioned aforesaid during the period from and including the date of issue of this guarantee through the period.

We specifically confirm that no proof of any amount due to you under the Contract is required to be provided to us in connection with any demand by you for payment under this guarantee other than your written demand.

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. 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.

This Performance Bank Guarantee shall not be affected by any change in the constitution of our constituent nor shall it be affected by any change in our constitution or by any amalgamation or absorption thereof or therewith or reconstruction or winding up, but will ensure to the benefit of you and be available to and be enforceable by you during the period from and including the date of issue of this guarantee through the period.

Notwithstanding anything contained hereinabove, our liability under this Performance Guarantee is restricted to 5% of the Contract Value, and shall continue to exist, subject to the terms and conditions contained herein, unless a written claim is lodged on us on or before the aforesaid date of expiry of this guarantee.

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.

We further agree that the exercise of any of your rights against our constituent to enforce or forbear to enforce or any other indulgence or facility, extended to our constituent to carry out the contractual obligations as per the said Contract, would not release our liability under this guarantee and that your right against us shall remain in full force and effect, notwithstanding any arrangement that may be entered into between you and our constituent, during the entire currency of this guarantee.

Notwithstanding anything contained herein:

Our liability under this Performance Bank Guarantee shall not exceed 5% of the Total Contract Value. This Performance Bank Guarantee shall be valid only from the date of signing of Contract to 180 days after the End of Contract Period; and

We are liable to pay the guaranteed amount or part thereof under this Performance Bank Guarantee only and only if we receive a written claim or demand on or before 180 days after the completion of Contract Period.

Any payment made hereunder shall be free and clear of and without deduction for or on account of taxes, levies, imports, charges, duties, fees, deductions or withholding of any nature imposts.

This Performance Bank Guarantee must be returned to the bank upon its expiry. If the bank does not receive the Performance Bank Guarantee within the above-mentioned

period, subject to the terms and conditions contained herein, it shall be deemed to be automatically cancelled.

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.

Dated ……………………. this ……….. day 20….

Yours faithfully,

For and on behalf of the Bank,

(Signature)

Designation

(Address of the Bank) Note:

This guarantee will attract stamp duty as a security bond.

A duly certified copy of the requisite authority conferred on the official/s to execute the guarantee on behalf of the bank should be annexed to this guarantee for verification and retention thereof as documentary evidence in the matter.

## Annexure 9 – Data to be collected by SI for which all necessary support will be provided by AUTHORITY

**END OF DOCUMENT**