

Request for Proposal (RFP)

for

**Selection of Service Provider for Supply,
Installation, Operation and Maintenance of Vehicle
Tracking System for equipment/machinery used in
construction of roads**

under

Pradhan Mantri Gram Sadak Yojana (PMGSY)



**STATE RURAL ROADS DEVELOPMENT AGENCY
(SRRDA)**

Government of Punjab

DISCLAIMER

This RFP is being issued by State Rural Roads Development Agency (hereunder called "SRRDA" or the "Purchaser") for inviting bids for selection of a Service Provider for the Design, Development, Implementation, Operation, Maintenance and Management of Vehicle Tracking System for vehicles/machines used in construction of PMGSY roads (hereunder "Project") on such terms and conditions as set out in this RFP document.

The information contained in this RFP or subsequently provided to Bidder(s), whether verbally or in documentary or any other form by or on behalf of SRRDA 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 SRRDA to the prospective Bidders or any other person. The purpose of this RFP is to provide Bidder(s) with information that may be useful to them in making their technical proposals and financial offers pursuant to this RFP (the "Bid").

This RFP includes statements, which reflect various assumptions and assessments arrived at by SRRDA 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 SRRDA, 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 this RFP 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 depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. SRRDA accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein. SRRDA, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Bidder under any law, statute, rules or regulations or tort, principles or 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 in this Bidding Process. SRRDA 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. SRRDA 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 SRRDA is bound to select a Bidder or to appoint the Selected Bidder, as the case may be, for the Project and SRRDA 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 Bids including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by SRRDA or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and SRRDA 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.

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Abbreviations

Sr. No.	Terms	Definition
1.	ATS	Annual Technical Support
2.	A&M	Approach & Methodology
3.	BoO	Base of Operation
4.	CCN	Change Control Notes/Notice
5.	CD	Compact Disc
6.	CGST	Central Goods & Services Tax
7.	CV	Curriculum Vitae
8.	DD	Demand Draft
9.	DR	Disaster Recovery
10.	EMD	Earnest Money Deposit
11.	EMS	Enterprise Management System
12.	ETM	Electronic Ticketing Machine
13.	EOI	Expression of Interest
14.	ESH	Extended Service Hours
15.	FRS	Functional requirement specifications
16.	IP	Implementation Partner
17.	INR	Indian National Rupee
18.	ICT	Information and Communication Technology
19.	IT	Information Technology
20.	JV	Joint Venture
21.	IVRS	Interactive voice response system
22.	JPEG	Joint Photographic Expert Group
23.	LoA	Letter of Award
24.	LoI	Letter of Intent
25.	LLP	Limited Liability Partnership
26.	LD	Liquidated Damages
27.	MIS	Management information system

Sr. No.	Terms	Definition
28.	MSA	Master Services Agreement
29.	O&M	Operations and Maintenance
30.	OEM	Original Equipment Manufacturer
31.	PBG	Performance Bank Guarantee
32.	PAN	Permanent Account Number
33.	PDF	Portable Document Format
34.	RFE	Request for Empanelment
35.	RFP	Request for Proposal
36.	SGST	State Goods & Service Tax
37.	CCTV	Close Circuit Television Camera
38.	SOW	Scope of Work
39.	SLA	Service Level Agreement
40.	SP	Service Provider
41.	ToR	Terms of Reference
42.	UAT	User Acceptance Test
43.	FAT	Final Acceptance Test
44.	GoP	Government of Punjab
45.	GoI	Government of India
46.	VMU	Vehicle Mounting Unit
47.	VTS	Vehicle Tracking System
48.	PMGSY	Pradhan Mantri Gram Sadak Yojna
49.	PRBDB	Punjab Roads and Bridges Development Board
50.	SRRDA	State Rural Roads Development Agency

Definition of Terms

Sr. No.	Term	Definition
1.	Agreement /Contract	The Agreement entered between the SRRDA and the Agency including all attachments, schedules, annexure thereto and all documents incorporated by reference therein and all amendments, corrigendum /corrigenda, changes thereto
2.	Bidder	Any person(s) including a partnership firm or a company or a LLP or a Consortium or a foreign entity who submits a Bid along with Bid Security as per the terms of this RFP within the stipulated time for submission of Bids.
3.	Purchaser	Tender Inviting Authority i.e State Rural Roads Development Agency (SRRDA)
4.	Bid /proposal	Offer by the Bidder to fulfil the requirement of the Client under the RFP/Contract for an agreed price. It shall be a comprehensive technical and commercial response to the Tender
5.	Confidential information	All information (whether in written, oral, electronic or other format) which relates to the technical, financial and business affairs, dealers, suppliers, products, developments, operations, processes, data, trade secrets, design rights, know-how, plans, budgets and personnel of each stakeholder and its affiliates which is disclosed to or otherwise learned by the other Party in the course of or in connection with this Agreement (including without limitation such information received during negotiations, location visits and meetings in connection with this Agreement);
6.	Deliverables	Products, infrastructure and services agreed to be delivered by the Bidder in pursuance of the agreement as defined more elaborately in the RFP Implementation and the Maintenance phases and includes all documents related to the user manual, technical manual, design, process and operating manuals, service mechanisms, policies and guidelines (such as security related, etc.), inter alia payment and/or process related etc., source code and all its modifications;

Sr. No.	Term	Definition
7.	Consortium	Consortium” shall mean the group of legally constituted entities, who have come together to participate in captioned project and have agreed to terms and Conditions of Consortium Agreement as specified in this RFP for implementing, operating central control system (CCS) and maintaining the VTS Project, subject to the terms of this tender.
8.	Go-live	The date of commencement of Operations and Maintenance phase after the successful completion of each Phase (FAT and acceptance of the overall solution by the SRRDA)
9.	Project implementation	Project Implementation as per the testing standards and acceptance criteria prescribed by SRRDA or its nominated agencies
10.	Request for Proposal / Tender Document	Written solicitation that conveys to the Bidder, requirements for products/ services that the SRRDA intends to buy and implement
11.	SLA	The level of service and other performance criteria which will apply to the Services delivered by the Bidder; Performance and Maintenance SLA executed as part of the Master Service Agreement
12.	SP / SI	The bidder who is qualified & successful in the bidding process and is given the award of Contract and will be referred to as Service Provider (SP)/Implementation Agency / System Provider

1. Introduction

State Rural Roads Development Agency("SRRDA"), the nodal agency for the implementation of PMGSY project in the State of Punjab, invites responses ("Bids") to this Request for Proposal ("RFP") from Service Providers/ Systems Implementation Agencies ("Bidders") for the supply, installation and operation & maintenance for Vehicle Tracking System (VTS) for vehicles/ machinery used in the construction of roads under PMGSY project.

2. Bid Datasheet

S. No.	Particular	Details
1.	RFP Reference Number	RFP/PMGSY/VTS/01
2.	Name of the Purchaser	State Rural Roads Development Agency (SRRDA), Punjab
3.	Name of the Assignment	Selection of Service Provider for Supply, Installation, Operation and Maintenance of Vehicle Tracking System for equipment/ machinery used in construction of roads under Pradhan Mantri Gram Sadak Yojana (PMGSY)
4.	Start date of issue of RFP	July 25, 2022
5.	Last date for submission of Queries for clarifications	August 5, 2022
6.	Date & Time of Pre-Bid Meeting	August 10, 2022
7.	Purchaser's Response to Pre-Bid Queries	August 15, 2022
8.	Last date and time for submission of Proposals (Proposal Due Date)	August 25, 2022

S. No.	Particular	Details
9.	Date and time of opening of Technical Proposals (Proposal Opening Date)	August 29, 2022
10.	Technical Presentation	August 31, 2022
11.	Date of opening of Price Proposals	Will be intimated later to technically shortlisted bidders
12.	Address for Pre-Bid Meeting, Submission & Opening of Proposals and other relevant purposed	O/o Chief Engineer, Punjab Roads and Bridges Development Board (PRBDB) SCO 61-62 Phase-II S A S Nagar, Chandigarh, 160055, Mohali 160055 Phone: 0172- 5134612 Email: ce.prbdb@punjab.gov.in Alternate Email: ddit.prbdb@punjab.gov.in
13.	Cost of RFP document	INR 10,000 to be paid [online through e Procurement website/demand draft]
14.	Bid Security Amount	INR 1 Lakh (Rupees One Lakh) / 10% of the total project cost or whichever is lower.
15.	All Demand Draft (DD) / Bank Guarantees (BG)	Drawn in favour of Joint Secretary PRBDB payable at Mohali
16.	Bid Validity Period	120 days from the Proposal Due Date
17.	Point of Contact from Purchaser regarding RFP	<ul style="list-style-type: none"> • Name: • Designation: Chief Engineer-cum-Joint Secretary • Address: Punjab Roads and Bridges Development Board (PRBDB) SCO 61-62 Phase-II S A S Nagar, Chandigarh, 160055, Mohali 160055 • Phone No.: 0172- 5134612 • Email: ce.prbdb@punjab.gov.in • Alternate Email: ddit.prbdb@punjab.gov.in

S. No.	Particular	Details
18.	E-Procurement Website	https://pmgsytenders.gov.in
19.	E-Procurement Website Helpdesk	Phone No.: 0172-6626641 0172-6626659 For any technical related queries please call at 24 x 7 Help Desk Number 0120-4001 002 0120-4001 005 0120-6277 787 Email: support-eproc@nic.in

3. Instructions to Bidders

3.1 General Conditions

- a. While every effort has been made to provide comprehensive and accurate background information and requirements and specifications, Bidders must form their own conclusions about the solution needed to meet the requirements. Bidders and recipients of this RFP may wish to consult their own legal advisers in relation to this RFP.
- b. All information supplied by Bidders may be treated as contractually binding on the Bidders.
- c. No commitment of any kind, contractual or otherwise shall exist unless and until a formal written Contract has been executed by or on behalf of the Purchaser. Any notification of preferred Bidder status by the Purchaser shall not give rise to any enforceable rights by the Bidder. The Purchaser may cancel this RFP at any time prior to a formal written contract being executed by or on behalf of the Purchaser.
- d. This RFP supersedes and replaces any previous public documentation & communications, and Bidders should place no reliance on such prior communication.
- e. Proposals should be submitted in the English language only.
- f. Proposals must remain valid for 120 days after the submission date.
- g. Technical Bids shall be received by the Purchaser on the e-Procurement portal, <https://pmgsytenders.gov.in> before the time and date specified in the RFP. Original copy of the EMD and hard copy of Technical Proposal shall also be submitted to **Chief Engineer, PRBDB, Mohali 160055**
- h. In the event of the specified date for the submission of Bids being declared a public holiday by the Government of Punjab, the Bids will be received up to the appointed time on the next working day. The Purchaser may, at its discretion, extend this deadline for submission of offers by issuing a corrigendum and uploading the same on e-Procurement portal.
- i. Bids received later than the due time and date mentioned in the RFP will not be considered for this procurement process.

3.2 Eligible Bidder

- 3.2.1 The Bidder may be a single entity or a group of entities (the "Consortium" or "Joint Venture"), coming together to implement the Project. No Bidder shall submit more than one Bid for the Project. A Bidder bidding individually or as a member of a Consortium/JV shall not be entitled to submit another Bid either individually or as a member of any Consortium/JV, as the case may be.
- 3.2.2 A Bidder (or each members of the Bidder, in case of a Consortium/JV) must be a registered business entity (such as Company/LLP/Registered Partnership etc.) incorporated under the applicable laws of its origin. Further, a Bidder (or each members of the Bidder, in case of a Consortium/JV) must also be ISO certified or possessing similar quality certification A Consortium/JV shall be eligible for consideration subject to the conditions set out in Clause 9.5.8 below.
- 3.2.3 Any entity which has been barred by the [Central/ State Government, or any entity controlled by it,] from participating in any project (BOT or otherwise), and the bar subsists as on the date of Bid, would not be eligible to submit a Bid, either individually or as member of a Consortium/JV.
- 3.2.4 A Bidder including any Consortium/JV Member should, in the last 3 (three) years, have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder/Consortium/JV Member, as the case may be, nor has been expelled from any project or contract by any public entity nor have had any contract terminated by any public entity for breach by such Bidder/ Consortium/JV Member.
- 3.2.5 While participation is open to persons from any country, the following provisions shall apply:]
- a) Where, on the date of Bid, not less than 15% (fifteen per cent) of the aggregate issued, subscribed and paidup equity share capital in any Bidder or any Consortium/JV Member is held by persons resident outside India or where a Bidder or

the Consortium/JV Member is controlled by persons resident outside India; or

- b) if at any subsequent stage after the date of Bid, there is an acquisition of not less than 15% (fifteen per cent) of the aggregate issued, subscribed and paid up equity share capital or control, by persons resident outside India, in or of the Bidder or the Consortium/JV Member;] [then the eligibility of such Bidder or in the event described in sub-clause (b) above, the continued eligibility of the Bidder shall be subject to approval of the Authority from national security and public interest perspective. The decision of the Authority in this behalf shall be final and conclusive and binding on the Bidder

3.2.6 The holding or acquisition of equity or control, as above, shall include direct or indirect holding/ acquisition, including by transfer, of the direct or indirect legal or beneficial ownership or control, by persons acting for themselves or in concert.

3.2.7 The Bidder shall promptly inform the Authority of any change in the shareholding, as above, and failure to do so shall render the Bidder liable for disqualification from the Bidding Process or termination of the Service Provider Agreement, as the case may be.

3.2.8 Bidders who qualify after the evaluation of their Technical Bid shall only be eligible for consideration and evaluation of their Price Bids. The Price Bid should be furnished in the format as mentioned in the RFP, clearly indicating the amounts in both figures and words, in Indian Rupees, and signed by the Bidder's authorized signatory. In the event of any difference between figures and words, the amount indicated in words shall be taken into account.

3.2.9 The Bidder should submit a Power of Attorney as per the format prescribed in the RFP authorizing the signatory of the Bid to commit the Bidder. In case the Bidder is a Consortium/JV, the Members thereof should furnish a Power of Attorney in favor of the Lead Member.

3.2.10 In case a Bidder is a Consortium/JV, its shall comply with the

following additional conditions:

- a) Number of members in a Consortium/JV shall not exceed Two (2) members;
- b) An individual Bidder cannot at the same time be member of a Consortium/JV applying for the Project. Further, a member of a particular Consortium/JV cannot be member of any other Consortium/JV applying for the Project. Any Bidder who submits or participates in more than one Bids would be disqualified and would also lead to disqualification of the Consortium/JV of which it is a member;
- c) Members of the Consortium/JV should nominate one member as the Lead Member who shall have a beneficial stake of at least 26% (twenty-six per cent) in the Consortium/JV;
- d) Members of the Consortium/JV shall enter into a binding Joint Bidding Agreement, for the purpose of submitting the Bid. The Joint Bidding Agreement, to be submitted along with the Bid, shall, inter alia:
 - convey the intent to form a Joint Venture in accordance with this RFP, which would enter into the Service Provider Agreement and subsequently perform all the obligations of the Selected Bidder in terms of such Service Provider Agreement, in case the right to undertake the Project is awarded to the Consortium/JV; clearly outline the proposed roles and responsibilities, if any, of each member;
 - members of the Consortium/JV undertake that they shall collectively hold at least 51% (fifty-one per cent) beneficial interest in such Joint Venture at all times during the Contract Period;
 - Further, in addition to combined beneficial interest of 51% as set forth above, commit that each of the members, whose experience will be evaluated for the purposes of this RFP, shall hold a minimum of 26%

beneficial interest in the Concessionaire at all time during the Contract Period;

- include a statement to the effect that all members of the Consortium/JV shall be liable jointly and severally for all obligations of the Successful Bidder/Service Provider in relation to the Project at all times during the Contract Period; and
- except as provided under this RFP and the Bidding Documents, there shall not be any amendment to the Joint Bidding Agreement without the prior written consent of the Authority.

3.3 Bidder to Inform

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

3.4 Fraud and Corrupt Practices

- a) The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the contrary contained in this RFP.
- b) The Purchaser shall reject a Bid without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "Prohibited Practices") in the Bidding Process. In such an event, the Purchaser shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Purchaser for, inter alia, time, cost and effort of the Purchaser, in regard to the RFP, including consideration and

evaluation of such Bidder's Bid.

- c) Without prejudice to the rights of the Purchaser and the rights and remedies which the Purchaser may have under the [LOI] or the [Agreement], if a Bidder or Service Provider, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LOI or the execution of the Agreement, such Bidder or Service Provider shall not be eligible to participate in any tender or RFP issued by the Purchaser during a period of 2 (two) years from the date such Bidder or Service Provider, as the case may be, is found by the Purchaser to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.
- d) For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:
- i. "Corrupt practice" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Purchaser who is or has been associated in any manner, directly or indirectly with the Bidding Process or the LOI or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Purchaser, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Agreement, who at any time has been or is a legal, financial or technical

consultant/ adviser of the Purchaser in relation to any matter concerning the Project;

- ii. "Fraudulent practice" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Bidding Process;
- iii. "Coercive practice" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Bidding Process;
- iv. "Undesirable practice" means (i) establishing contact with any person connected with or employed or engaged by Purchaser with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and
- v. "Restrictive practice" means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

3.5 Conflict of Interest

A Bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the Authority shall be entitled to forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Authority and not by way of penalty for, inter alia, the time, cost and effort of the Authority, including consideration of such Bidder's proposal (the "Damages"), without prejudice to any other right or remedy that may be available to the Authority under the Bidding Documents and/ or the Service Provider Agreement or otherwise. Without limiting the generality of the above, a Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:

- i. the Bidder (or any constituent thereof) and any other Bidder (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall

not apply in cases where such common controlling shareholders or other ownership interest does not exceed 25%; provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in section 4A of the Companies Act, 1956; or

- ii. a constituent of such Bidder is also a constituent of another Bidder; or
- iii. such Bidder, its Member or any Associate thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, its Member or Associate, or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its member or any Associate thereof; or
- iv. such Bidder has the same legal representative for purposes of this Bid as any other Bidder; or
- v. such Bidder, or any Associate thereof, has a relationship with another Bidder, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each others' information about, or to influence the Bid of either or each other; or
- vi. such Bidder or any Associate thereof has participated as a consultant to the Authority in the preparation of any documents, design or technical specifications of the Project.

Explanation:

In case a Bidder is a Consortium/JV, then the term Bidder as used in this Clause 9.5.9 shall include each Member of such Consortium/JV.

For the purposes of this RFP, Associate means, in relation to a Bidder, a person who controls, is controlled by, or is under the common control with such Bidder (the "Associate"). As used in this definition, the expression "control" means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty percent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law.

3.6 Termination

- a) The Purchaser may, terminate this Contract in whole or in part by giving the Bidder a prior and written notice indicating its intention to terminate the Contract under the following circumstances:
- i. Where the Purchaser is of the opinion that there has been such Event of Default on the part of the Bidder / Bidder's Team which would make it proper and necessary to terminate this Contract and may include failure on the part of the Bidder to respect any of its commitments with regard to any part of its obligations under its Bid, the Tender or under this Contract.
 - ii. Where it comes to the Purchaser's attention that the Bidder (or the Bidder's Team) is in a position of actual conflict of interest with the interests of the Purchaser, in relation to any of terms of the Bidder's Bid, the Tender or this Contract.
 - iii. Where the Bidder / any of Bidder's Consortium/JV partner(s) ability to survive as an independent corporate entity is threatened or is lost owing to any reason whatsoever, including inter-alia the filing of any bankruptcy proceedings against the Bidder or its consortium/JV partner(s), any failure by the Bidder or its consortium/JV partner(s) to pay any of its dues to its creditors, the institution of any winding up proceedings against the Bidder / Bidder's consortium/JV partner(s) or the happening of any such events that are adverse to the commercial viability of the Bidder / Bidder's consortium/JV partner(s). In the event of the happening of any events of the above nature, the Purchaser shall reserve the right to take any steps as are necessary, to ensure the effective transition of the project to a successor agency, and to ensure business continuity.
 - iv. **Termination for Insolvency:** The Purchaser may at any time terminate the Contract by giving written notice to the Bidder, without compensation to the Bidder, if the Bidder becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.
 - v. **Termination for convenience:** The Purchaser may at any time

terminate the Contract in whole or in part for convenience by giving written notice of sixty (60) days to the bidder. In the event of termination under this para (e), the financial payments, if any, to be paid to the bidder shall be either mutually decided between the Parties or through third party determination/ arbitration at that point of time.

- b) In the event of termination of this Contract by the Purchaser before the expiry of the term, the Bidder shall be given a period of 30 days to demobilize itself.
- c) The Bidder may, subject to approval by the Purchaser, terminate this Contract before the expiry of the term by giving the Purchaser a prior and written notice of at least 3 months in advance indicating its intention to terminate the Contract or as mutually agreed to by both the parties.

3.7 Compliant Proposals / Completeness of Response

- a) Bidders are advised to study all instructions, forms, terms, requirements and other information in the RFP documents carefully. Submission of the bid shall be deemed to have been done after careful study and examination of the RFP document with full understanding of its implications.
- b) Failure to comply with the requirements of this paragraph may render the Bid non-compliant and the Bid may be rejected. Bidders must:
 - Include all documentation specified in this RFP;
 - Follow the format of this RFP and respond to each element in the order as set out in this RFP
- c) Bidders are also advised to read the Standard guidelines for GPS System as shared by National Rural Infrastructure Development Agency on 31 January, 2022 attached in Appendix VIII and ensure to store the GPS System data at their end as per the Standard Guidelines. This data will be used to update the Geo Sadak application by NRIDA, thereon, upon consolidation this data will be made available via API for road details, PIU details etc for consumption by the GPS devices.

3.8 Pre-Bid Meeting & Clarifications

Pre-bid Conference

- a) Purchaser may hold a pre-bid meeting with the prospective Bidders as per information given in the Fact Sheet.
- b) The Bidders will have to ensure that their queries for pre-bid meeting should reach the point of contact (Nodal Officer) through email only as mentioned in the Fact Sheet.
- c) The queries should necessarily be submitted in the following format:

Sr. No.	RFP document reference (s) (Section & page number)	Content of RFP requiring clarification (s)	Points of clarification
1.			
2.			
3.			
4.			
5.			

- d) Purchaser shall not be responsible for ensuring that the Bidders' queries have been received by them. Any requests for clarifications post the indicated date and time may not be entertained by the Purchaser.

3.9 Responses to Pre-Bid Queries and Issue of Corrigendum

- a) The Nodal Officer notified by the Purchaser will endeavour to provide timely response to all queries. However, Purchaser makes no representation or warranty as to the completeness or accuracy of any response made in good faith, nor does Purchaser undertake to answer all the queries that have been posed by the Bidders.
- b) At any time prior to the last date for receipt of bids, Purchaser may, for any reason, whether at its own initiative or in response to a

clarification requested by a prospective Bidder, modify the RFP by a corrigendum.

- c) The corrigendum (if any) & clarifications to the queries from all Bidders will be posted on the <https://pmgsytenders.gov.in> and emailed to all participants of the pre-bid conference.
- d) Any such corrigendum shall be deemed to be incorporated into this RFP.
- e) In order to provide prospective Bidders reasonable time for taking the corrigendum into account, the Purchaser may, at its discretion, extend the last date for the receipt of Bids.

3.10 Correspondence

Bidder requiring any Techno-Commercial clarification of the bid documents may contact by email or phone.

Name	Email	Contact No.
Chief Engineer, PRBDB	ce.prbdb@punjab.gov.in	0172-5734612

Verbal clarifications and information given by SRRDA or its employees or its representatives shall not be entertained in any way.

3.11 Key instructions of the Bid

a) RFP document fees

- a. The Bidder will download the RFP document(s) from the website <https://pmgsytenders.gov.in> and an Amount of INR 10,000 will have to be paid through online mode to following bank account number of SRRDA:

SRRDA Bank Account Details	
Name of Bank:	State Bank of India
Name of Payee:	Punjab Roads And Bridges Development Board
Account Number:	5519339592

IFSC Code:	SBIN0003246_
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Snapshot of proof of RFP document fee payment should be attached with the Technical Proposal.

b) Earnest Money Deposit (EMD)

- a. Bidders shall submit an EMD in the form of a demand draft OR bank guarantee (in the format specified in Appendix I: Form 3) issued by a scheduled commercial bank in favour of Joint Secretary, Punjab Roads & Bridges Development Board (PRBDB) payable at "Mohali" and should be valid for 6 months from the last date of submission of the Bid.
- b. EMD of all unsuccessful Bidders would be refunded by the Purchaser within 2 months of the Bidder being notified as being unsuccessful. The EMD, for the amount mentioned above, of successful Bidder would be returned upon submission of Performance Bank Guarantee as per the format provided in Appendix III (Form 1).
- c. The EMD amount is interest free and will be refundable to the unsuccessful Bidders without any accrued interest on it.
- d. Bids not accompanying the EMD or containing EMD with infirmity (ies) (relating to the amount or validity period etc.), mentioned above, shall be summarily rejected.
- e. The EMD may be forfeited in the event of:
 - A Bidder withdrawing its Bid during the period of Bid Validity
 - A successful Bidder fails to sign the subsequent Contract in accordance with this RFP
 - The Bidder being found to have indulged in any suppression of facts, furnishing of fraudulent statement, misconduct, or other dishonest or other ethically improper activity, in relation to this RFP
 - A Bid contains deviations (except when provided in conformity with the RFP) conditional offers and partial offers.

A. Performance Bank Guarantee (PBG)

On receipt of a Letter of Acceptance (“LoA”) from SRRDA, the successful Bidder will furnish a bank guarantee, by way of performance security, equivalent to **10% of the total project cost** on or before the signing of the subsequent Contract, typically within 15 days from notification of the LoA, unless specified to the contrary. In case the successful Bidder fails to submit Performance Guarantee within the time stipulated, SRRDA may at its sole discretion cancel the LoA without giving any notice and encash the EMD furnished by the Bidder, in addition to any other right available to it under this RFP.

The Performance Guarantee furnished by the successful Bidder shall be in the manner prescribed at Appendix III (Form-1). The successful Bidder shall ensure, the Performance Guarantee is valid for 6 years from the date of signing of agreement and during the term of the subsequent Contract (any renewal) and for a period of 60 days beyond all contractual obligations, including warranty terms. SRRDA may invoke the Performance Guarantee in the event of a material breach by the successful Bidder leading to termination for material breach.

3.12 Preparation of Proposal

- a. Bidders are required to submit the bid both in online (soft copy) and offline (hard copy) mode. The offline documents are to be submitted in a single cover envelope. It should be duly sealed and signed. Also, a scanned copy of these original documents needs to be submitted online as part of the online bid submission.
- b. Bidders should submit their responses as per the formats given in this RFP.

Bids needs to be uploaded on the website <https://pmgsytenders.gov.in>

- c. Commercial proposal (Price Quotation) shall be submitted **only** through online mode.

(Please note that prices should be indicated in the Financial Proposal as per the Appendix II: Detailed Financial breakup provided in the RFP. Bidders are advised against providing unreasonable price information. Pricing information which deviate significantly from the market rate may render the proposal non-

responsive)

- d. Only Technical Proposal must be submitted in hard copy.

The solutions proposed must be expandable for future requirements. The system shall not require individual client licenses and the system shall not require any reoccurring license fees. (Additionally, the VENDOR must propose the expansion of the system along with the submitted bid, clearly marked as SYSTEM EXPANSION.)

- e. The cover page of Technical and Financial Form should also indicate clearly the name, address, telephone number, E-mail ID and fax number of the Bidder to enable the Bid to be returned unopened in case it is found to be received after the time and date of Bid submission prescribed herein.
- f. All the pages of the Bid must be sequentially numbered and must contain the list of contents with page numbers. Any deficiency in the documentation may result in the rejection of the Bidder's Bid.
- g. The authorized representative (or representatives) of the Bidder shall initial in all pages of the Proposal. The Bid shall contain no interlineations or overwriting, except as necessary to correct errors made by the Bidder itself. Any such corrections must be initialed by the authorized signatory of the Bidder.

3.13 Bidder's authorized signatory

A Bid should be accompanied by an appropriate board resolution and power of attorney in the name of an authorized signatory of the Bidder stating that he/ she is authorized to execute documents and to undertake any activity associated with the Bidder's Bid.

Please enclose the Power of Attorney in the technical proposal.

3.14 Proposal preparation costs

The Bidder shall be responsible for all costs incurred in connection with participation in the RFP process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of Bid, in providing any additional information required by Purchaser to facilitate the evaluation process, and in negotiating a definitive contract or all such activities related to the bid process.

Purchaser will in no event be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding Process.

3.15 Language

The Proposal should be filled by the Bidder in English language only. For purposes of Bid evaluation, the English translation shall govern.

3.16 Proposals received after designated time of submission

- a) 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 be returned unopened.
- b) The Bids submitted by telex/telegram/fax/e-mail etc. shall not be considered. No correspondence will be entertained on this matter.
- c) The Purchaser shall not be responsible for any postal delay or non-receipt/ non-delivery of the documents. No further correspondence on the subject will be entertained.
- d) The Purchaser reserves the right to modify and amend any of the above stipulated conditions/criteria depending upon project priorities vis-à-vis urgent commitments.

3.17 Downloadability / Visibility of the uploaded document

The Bidder shall ensure that the Bid uploaded on the e-procurement portal is clearly visible and downloadable.

3.18 Format and Numbering of the uploaded document

The Bidder shall ensure that the documents uploaded are correctly numbered so that any specific document can be easily and quickly found using the appropriate serial/page no. All documents shall only be uploaded in the formats mentioned here: PDF, MS Office, Compatibility Mode, and JPEG Format. The unsuccessful opening or download ability of documents which are uploaded in any format other than those mentioned above shall not be entitled for any claim whatsoever.

3.19 Issues in uploading document due to internet connectivity

No claims shall be entertained owing to issues of internet connectivity. The Bidders are advised to upload the bid online well in advance of the deadline to avoid difficulties.

3.20 Deviations, Exclusions and Assumptions

All deviations, exclusions and assumptions if unavoidable shall be submitted along with technical proposal.

4. Bid Eligibility & Evaluation Criteria

4.1 Eligibility Criteria

The overall eligibility will be carried out as per the criteria listed below and only those bids who qualify the eligibility criteria will be subjected to the Technical Evaluation.

S. No	Eligibility Condition	Proof Document Required
1.	<p>a) Bidder must be a single entity or a group of entities (the "Consortium/ JV") to submit their Bid.</p> <p>b) Bidder along with Consortium partner should be incorporated/registered in India under the Companies Act 1956 for at least 5 years* or LLP Act 2008 or the Partnership Act 1932</p> <p>c) Bidder along with Consortium Partner/ JV should be compulsorily registered with the Service Tax Authorities in India.</p>	<p>Bidder along with Consortium/JV Partner/ JV shall provide copies of the following:</p> <p>a) Certificate of Incorporation</p> <p>b) CGST/SGST Registration Details</p>
2.	<p>Sole Bidder/Lead Partner in case of Consortium/JV should have an annual turnover of INR 5 Crores or higher in each of the last 3 financial years (till 2017-18).</p> <p>Last 3 financial years are FY 2015-16, FY 2016-17, FY 2017-18.</p>	<p>Audited financial statements for each of the last three years/CA certificate on its Letter Head (CA membership number should be clearly mentioned and visible in the certificate).</p>
3.	<p>Sole Bidder/ Lead Partner in case of Consortium/JV should have a positive net worth in each of the last 3 financial years</p>	<p>Certificate from the Statutory Auditor/ CA certificate.</p>
4.	<p>Sole Bidder/ Lead Partner in case of Consortium/JV should be ISO 9001:2008 or later certified IT company</p>	<p>Copy of valid Certificate</p>
5.	<p>Sole Bidder/ any of the Partners in case of Consortium/JV should not be currently blacklisted or banned by any Govt./Govt. Department/</p>	<p>An undertaking duly attested by the notary should be provided</p>

S. No	Eligibility Condition	Proof Document Required
	Govt. Agency/ PSU in India for corrupt or fraudulent practices or non-delivery or non-performance in last 3 years.	

4.2 Technical Evaluation Criteria

The overall technical evaluation will be carried out as per the criteria listed below and the evaluation be performed as per the marks allocated against each criteria. The total qualifying marks will be minimum 70 out of a total of 100 marks.

Only bidders who qualify this round, will be further subjected to the Financial Opening of bids.

Sr. No.	Technical Criteria	Proof of Document	Marks
a)	Sole Bidder/ Lead Partner in case of Consortium/JV shall have at least 4 projects with total of at least 400 VTUs completed (GPS based). Each project should include procurement, installation, operation and maintenance of VTUs for each such project as on Proposal Due Date.	a) Copy of Work Order. b) Project Completion c) Certificate / Customer satisfaction certificate / certificate Go live for project.	20
b)	Sole Bidder/ Lead Partner in case of Consortium/JV Implemented or currently managing GPS/VTS Solution/ live vehicle tracking via mobile application including software in the last 3 years.	a) Copy of relevant and valid PO/WO/LOA/Contract b) within last 3 years before the date of bid submission. c) The last three years will comprise of periods counted from Apr 2015 onwards. d) Completion Certificate would be preferred.	30

Sr. No.	Technical Criteria	Proof of Document	Marks
c)	Technical Presentation	Bidder will deliver a technical presentation elaborating upon the various aspects highlighting the implementation solution along with application details.	30
d)	Project Plan	A detailed project plan enlisting complete work break down structure. Detailed resource deployment along with dependencies be also included in the plan. The project plan is to be made in MS Projects and to be showcased for evaluation.	20

4.3 Commercial Evaluation

- a) Bidders who qualify the Technical Evaluation will be further evaluated for Commercial proposal (Price Quotation). The price quote shall be that of the cost of the entire project including taxes and additional charges wherever applicable.
- b) The Price Quotation of technically qualified bidders will be opened on the prescribed date in the presence of bidder representatives and SRRDA officials.
- c) The Price Quotation provided by the bidders shall be used for evaluation.
- d) The commercial evaluation of the Bids will be carried out based upon the quotes submitted. The lowest quote bidder will be allotted the declared as the most prospective bidder.

4.4 Bid opening

SRRDA will inform date, time and venue for Bid opening. The Bids submitted up to the last date and time mentioned above will be opened on the mentioned place, time and date by the Nodal Officer or any other officer authorized by the Purchaser, in the presence of

the Bidder's representatives who may be present at the time of opening. The representatives of the Bidders are advised to carry an identity card or a letter of authority from the Bidding entity to identify their bonafide representatives for attending the opening of the Bid.

4.5 Bid validity

The Bid submitted by the Bidders should be valid for minimum period of 120 days from the last date of submission of the Bid.

4.6 Right to Accept Any Bid and To Reject Any or All Bid(s)

SRRDA reserves the right to accept or reject any Bid, and to annul the Bidding Process / public procurement process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for SRRDA action.

4.7 Notification of award

Prior to the expiration of the validity period, SRRDA will notify the successful bidder in writing or email, that its proposal has been accepted. In case the tendering process /public procurement process has not been completed within the stipulated period, SRRDA, may like to request the bidders to extend the validity period of the bid.

The notification of award will constitute the formation of the contract. Upon the successful bidder's furnishing of Performance Bank Guarantee, SRRDA will notify each unsuccessful bidder and return their EMD.

4.8 Signing of Contract

Upon the Successful Service Provider complying the terms and conditions of the LoA, the service provider's agreement shall be signed between the successful bidder and the authority. The terms and conditions of this tender shall constitute the major part of the agreement. Such agreement may have all correspondence (to be discussed and agreed upon separately) between authority and the successful bidder and additional clauses and/or provisions that further explain or clarify provisions of this RFP or certain provisions which Authority may be required to include as per law or being a publicly owned institution, as per its practices. SRRDA hereby reserves the right to modify the terms of the service provider

agreement. It is clarified within 10 days that the issuance of the Letter of Acceptance shall be followed by signing of the service provider agreement and the successful bidder shall commence the project on receipt of Letter of Acceptance. The signing of the service provider agreement shall be completed such time as the Authority may specify. In case the Agreement is not signed within the stipulated time period of 10 days, the performance guarantee will be forfeited.

Any and all incidental expenses of execution of the service provider agreement shall be borne by the successful bidder including cost of stamp duty, registration charges and any other incidental costs and charges relating to the agreement.

4.9 Failure to agree with terms and condition of RFP

Failure of the successful bidder to agree with the Draft Legal Agreement and Terms & Conditions of the RFP shall constitute sufficient grounds for the annulment of the award, in which event SRRDA may award the contract to the next best value bidder or call for new proposals from the interested bidders.

4.10 Laws Governing the Contract

This contract shall be governed and interpreted in accordance with the laws of India and the rules of Government of Punjab. The Courts of Punjab or the place where the contract is to be performed shall have exclusive jurisdiction over all matters arising out of or in respect of the contract.

4.11 Dispute Resolution & Arbitration

The Service Provider and the Purchaser shall endeavor their best to amicably settle all disputes arising out of or in connection with the Contract in the following manner:

- a. The Party raising a dispute shall address to the other Party a notice requesting an amicable settlement of the dispute within seven (7) days of receipt of the notice.
- b. The matter will be referred for negotiation between Nodal Officer of Purchaser/Purchaser and the Authorized Official of the Service Provider. The matter shall then be resolved between them and

the agreed course of action documented within a further period of 15 days.

In case any dispute between the Parties, does not settle by negotiation in the manner as mentioned above, the same may be resolved exclusively by arbitration and such dispute may be submitted by either party for arbitration within 20 days of the failure of negotiations. Arbitration shall be held in "Mohali" and conducted in accordance with the provisions of Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof. Each Party to the dispute shall appoint one arbitrator each and the two arbitrators shall jointly appoint the third or the presiding arbitrator.

The "Arbitration Notice" should accurately set out the disputes between the parties, the intention of the aggrieved party to refer such disputes to arbitration as provided herein, the name of the person it seeks to appoint as an arbitrator with a request to the other party to appoint its arbitrator within 45 days from receipt of the notice. All notices by one party to the other in connection with the arbitration shall be in writing and be made as provided in this tender document.

The arbitrators shall hold their sittings at "Mohali". The arbitration proceedings shall be conducted in English language. Subject to the above, the courts of law at "Punjab" alone shall have the jurisdiction in respect of all matters connected with the Contract/Agreement even though other Courts in India may also have similar jurisdictions. The arbitration award shall be final, conclusive and binding upon the Parties and judgment may be entered thereon, upon the application of either party to a court of competent jurisdiction. Each Party shall bear the cost of preparing and presenting its case, and the cost of arbitration, including fees and expenses of the arbitrators, shall be shared equally by the Parties unless the award otherwise provides.

The Service Provider shall not be entitled to suspend the Service/s or the completion of the job, pending resolution of any dispute between the Parties and shall continue to render the Service/s in accordance with the provisions of the Contract/Agreement notwithstanding the existence of any dispute between the Parties or the subsistence of any arbitration or other proceedings.

4.12 Proposal evaluation

- i. Initial Proposal scrutiny will be held and to confirm that Proposals do not suffer from the infirmities detailed below. The proposal will be treated as non-responsive, if a Proposal is found to have been:
 - Submitted in manner not conforming with the manner specified in the RFP document
 - Submitted without appropriate EMD as prescribed herein
 - Received without the appropriate power of attorney
 - Containing subjective/incomplete information
 - Submitted without the documents requested in the checklist
 - Non-compliant with any of the clauses stipulated in the RFP
 - Having lesser than the prescribed validity period.
 - The EMD of all non-responsive bids shall be returned to the bidders.
- ii. All responsive Bids will be considered for further processing as below.
- iii. State Rural Roads Development Agency (SRRDA) will prepare a list of responsive Service Providers, who comply with all the Terms and Conditions of the Tender.
- iv. All eligible bids will be considered for further evaluation by a committee according to the Evaluation process define in this RFP document. The decision of the Committee will be final in this regard.

5. Project Overview

5.1 Project Background

State Rural Roads Development Agency (SRRDA), a Nodal Agency of the State responsible for construction of Roads with its headquarter at Mohali, is mainly undertaking the work of construction of roads under the PMGSY project.

The State Rural Roads Development Agency strongly dedicated to achieve the key objectives to provide best infrastructure services to citizens at

reasonable price with the use of modern information technology. This project is conceptualized for services that are being provided to citizens & other stakeholders by SRRDA.

Main modules of the project are as follows:

5.1.1 Vehicle Tracking System

The system will help SRRDA to track the position of vehicles/machinery used in the construction of Roads under the PMGSY project. The output assimilated from the VTS equipment installed in the various vehicles/ machinery will be viewed in the Command Control Centre to be established in SRRDA.

5.1.2 Command Control Centre – The Command Control Centre will display vehicle positions and monitor current position of the vehicle on a real-time map application. A help desk will also be stationed in the command Control centre for any grievance redressal.

5.1.3 Web Portal/ Application– The portal will be used by various internal stakeholders of SRRDA for the purpose of viewing reports, device data maintenance etc.

5.1.4 Mobile application – A mobile app for live tracking of the vehicles.

The functionality expected from each of the modules mentioned above is explained in section “Detailed Scope of Work”. The RFP is to invite Service Provider (SP) to implement the project with the above functionalities.

The details of the vehicles generally used for construction of road per site where GPS devices are to be installed is given below:

Type of Vehicle	No. of vehicles
Paver	1
Tipper	5
Smooth Wheel Roller	2
Vibrator Roller	1
JCB / Excavator	1
Total	10

The vehicle count mentioned above is only for construction of one roads. The same needs to be extrapolated based upon the number of projects simultaneously been taken up for the said duration.

A variation of +/-10% of the above total figure should be considered by the Bidder.

5.2 Detailed Scope of Work

The following outlines the broad areas of scope of work for the Service Provider (SP) and the later sections highlight the detailed scope of work for SP in each of the following areas.

1. **Requirements Study:** Preparation of Software Requirements Specification ("SRS") & Functional Requirement Specification ("FRS").
2. **Software Development:** Software design, development, testing, installation and commissioning for the services and functions given in this RFP.
3. **Procurement and installation of required hardware on adhoc basis:**
 - a. Vehicle Tracking Unit: GPS devices to be installed on adhoc basis for live tracking of vehicular movements.
 - b. Command Centre: Wall mount TV Screen with real time tracking of vehicle location on google maps and measuring performance of operational efficiency of vehicle operations through relevant dashboards and reports.
 - c. Cloud Infrastructure: Storage and servers to be hosted on cloud and disaster recovery to be provisioned at SDC.
 - d. Network: Network connectivity required for communication between the systems (VTUs, Display & Tracking systems)- LAN, GPRS (SIMs) etc.

Final Bill of Materials ("BOM") and sizing of cloud server shall be finalized after site survey by the SP. Current BOM is indicative only.

4. **User Support and Maintenance for 2 years:** Service delivery, software and hardware & connectivity provisioning ("O&M") for a total period of 2 years from Go-Live Acceptance Date. The

O&M shall include complete IT infrastructure maintenance and application support. Helpdesk for systems needs to be provided.

5. **Training and Capacity Building:** Design & execution of training and capacity building for successful implementation and operations.
6. **Project Documentation:** At each stage of Project implementation SP should submit relevant detailed documents such as user manuals, test cases, technical and functional specifications of the system etc.

5.2.1. Requirements Study

SP shall prepare detailed System Requirement Specifications (SRS) detailing processes for all modules based on non-functional requirements and functional requirements mentioned in this RFP and also additional requirements as may be identified in consultation with SRRDA and other stakeholders during the Requirement Study phase. The SRS approved by SRRDA will form the baseline for all subsequent phases of application development and deployment from a Solution requirements perspective (e.g., for testing, identifying “change” to requirements etc.).

As part of Requirement Study, the SP shall develop a Project Implementation Plan encompassing the activities mentioned below:

- i. Design and development plan
- ii. Pre-commissioning, delivery, installation, operational and user acceptance testing plan
- iii. Training plan
- iv. Warranty service plan
- v. Task, time schedules
- vi. Post-warranty service plan
- vii. Technical support plan
- viii. Quality assurance and control process details which must include (but not limited to) detailing on metrics, reviews,

problem reporting and corrective action, system audit etc.

- ix. Any other item in consultation with SRRDA.

5.2.2. Software Development

In the software development phase below are the expectations from the SP:

- A. Application Requirement Study and Analysis
- B. Application development.
- C. Application testing.

A. Application Requirement Study and Analysis

The SP shall perform the detailed assessment of the functional requirements for the services listed.

B. Application Development

Detailed functionality of each module are described as follows:

- i. Web Portal for SRRDA stakeholders
 - ii. Vehicle Tracking System
 - v. Command Centre
 - vi. Mobile Application
 - vii. Reporting/Dashboard
 - viii. Documentation
- I. Web Portal for stakeholders

The solution proposed has following stakeholders, for whom SP will be responsible to develop appropriate user interfaces:

- i. Management staff – The management staff at different locations should be able to track the live movement of vehicles at any given point of time.
- ii. Staff at command center – The staff at the command center will be getting the information from across all the locations. The command center staff should be able to see real time vehicle position through GPS coordinates on google maps, dashboards/reports measuring performance of vehicle operations against KPIs. Important KPIs related report measuring performance of vehicle operations, health status of

the cloud server among others.

II. Vehicle Tracking System (VTS)

Vehicle tracking System will be installed on adhoc basis (required only for the period for which the vehicle/machinery is in use for road construction) in all the vehicles/machinery used in PMGSY roads. The VTS should be able to provide information of vehicle location and should be AIS 140 complaint device. The VTS should store and retrieve information from the cloud-hosted server. Any information required for Business Intelligence should be retrieved from the cloud-hosted server and shown in command center wall mounted TVs, portal dashboards, mobile app etc. Additionally, it shall have the below modules:

- Offline tracking
- Trip Report
- Distance travel report
- Idle, Stop report

Dynamic reporting should include:

- Live location of the vehicle
- Working hour/efficiency reports
- Detailed activity reports
- Vehicle summary
- History Report (Showing path taken by Vehicle)
- Trip wise report
- Vehicle stoppage report
- Monthly monitoring summary, etc

III. Command Centre

Key objectives of command center are:

1. Informed Decision Making: The Command Center Application shall provide real time vehicle tracking through GPS, KPIs based dashboards among others, which shall enable informed decision making by SRRDA stakeholders.
2. Device Monitoring: Command Center shall provide for device management of devices including VTS. Device management shall include monitoring services, incident reporting with defined

escalation procedures and health monitoring of all components. Also Key management shall be done at CC level. Security access module of all the equipment shall be issued from CC. CC System will act as a live hub to manage and monitor service related data, which will be viewable through a centralized application.

3. Helpdesk Operations: SRRDA staff will be stationed in Command Center to redirect any incoming query or incident to the authority best suited to resolve the issue. The helpline shall be in operation during the working hours of vehicle operations. Along with SRRDA staff there needs to be employees from the Service Provider to resolve any technical issues that occur. For the sake of clarity, the Service Providers responsibility is to ensure a fully working System for gathering incident related data through the various components.
4. Future Integration with Intelligent Transport initiatives: Command center has been envisaged as the nerve center for SRRDA operation. This will enable SRRDA to integrate existing applications, if required. SRRDA has taken initiative to implement best practices in the VTS monitoring services. These citizen centric (G2C) as well as G2B, G2G initiative will be integrated with command center for ease of monitoring and management. **Future integration with SRRDA's system shall be done by the Bidder at no additional cost.** The integration however will be limited to sharing the required data through APIs.

IV. Mobile Application

This is a one-stop solution to manage, supervise and regularize road construction activities using smart phones. SMS based services shall be available for user with feature phones also.

The Service Provider shall design, develop and maintain the mobile application & Web based application, which will be accessible over mobile and other portable devices. The web-interface developed will be compatible to work on latest mobile operating systems.

Main modules of Mobile App:

- i. Live tracking of vehicles/machinery
- ii. Route Monitoring & tracking while operations.

iii. Compatibility with existing MIS system to monitor reports

All above Mobile App modules must have following general requirement feature for usable, highly secured and stable apps:

- Flexibility and customization.
- Convenient user interface.
- All the content should be accessed in the simplest way possible.
- Speed of loading mustn't keep users waiting.
- Communication should be as quick and simple as possible, with a minimum number of taps and minimum text input. Intuitive system of search and filters.

V. Reporting/Dashboard

The proposed solution shall be integrated with existing applications. The dashboard must provide:

- i. Preparation of standard reports and charts to measure performance related to vehicle operations so as to support all level of management in decision making related to vehicle operations.
- ii. Instant access to reports on: trips on different routes, break downs and its duration, vehicles offline, accidents – types, impact, losses etc., average speed point to point, travel time analysis, improper stops, deviation in routes, speed violations, at different locations and at different points of time.
- iii. Analytical data (video, text and numerical data) for the top management to support effective management of the services of SRRDA. Cater to requirements of dynamic and context based specific reports graphs and charts
- iv. Other standard reports to give a snapshot view to the SRRDA management on daily, monthly, quarterly, half-yearly and yearly performance.

The above requirement is the minimum expectation, however SP if deemed fit can suggest more reporting features that can aid in increasing the operational efficiency

of SRRDA.

VI. Documentation

The SP shall prepare and provide to SRRDA all documentation including source code of application along with SRS, FRS and all other related documents as per latest industry standards and should incorporate necessary version control mechanism. Whenever any major changes are made in the solution during the life time of project, SP must provide all the updated documents to SRRDA. All the updated documentation along with the source for stable release of the project should be handed over to SRRDA at least 3 months prior to contract expiry.

C. **Application Testing**

The Service Provider shall design the Testing strategy including Traceability Matrix, Test Cases and conduct testing of various components. The testing shall at least include Unit Testing, System Integration Testing, Performance Testing, User Acceptance Testing (UAT), etc. The Service Provider shall obtain the sign-off from SRRDA on testing approach and plan (inclusive of Test cases).

User Acceptance Test (UAT) shall be carried out by SRRDA on the Vehicle Tracking system. The SP shall first train the department's testing team and then facilitate the UAT. SP shall provide test scripts for conducting the UAT.

The Service Provider shall perform the testing of the solution based on the approved test plan, document the results and shall fix the bugs found during the testing. Though SRRDA is required to provide formal approval for the test plan, it is the ultimate responsibility of the Service Provider to ensure that the end product delivered meets all the requirements specified by SRRDA in this RFP.

D. **Final Acceptance Testing**

Final Acceptance Testing shall include Installation & commissioning of all hardware, software supplied under this RFP including customization & deployment of IT application, Helpdesk software, SMS Gateway etc. and it shall also include all documentation related to SRRDA and relevant acceptance test document (including IT Components, Non-IT components).

5.2.3. Procurement and installation of IT Infrastructure:

The bidder will be responsible for providing command center infrastructure at a premise provided by SRRDA, to monitor the movement of the vehicles. All other infrastructure like internet connection, computer, printer, telephone etc. shall be arranged by the SP on its own costs. Electricity consumption charges will be borne by SRRDA.

Below is the indicative list of hardware and infrastructure requirement for the project:

a) At Vehicles

- i. Vehicle tracking system (GPS) with basic features to display real time tracking of vehicles/machinery.

b) At Offices

- i. Personal Laptops (4 Nos.)

c) Cloud Infrastructure

Bidder shall provision the best possible cloud storage infrastructure for seamless user experience in the SDC (State Data Center), Punjab. Storage space should be enough to store the records for five years for vehicles machinery used for PMGSY road construction.

d) At SRRDA Headquarters:

Command Centre: Wall-mount TV Screen (2 nos. of 55 inches) to view reports/dashboards and real time tracking of vehicles, PCs, UPS, and Printers.

The SP will have to install the infrastructure required at the command centre along with required manpower and develop the application for GPS tracking of vehicles.

Final BoQ and sizing of cloud shall be finalized after site survey by the Service Provider.

At least the following activities will be carried out as part of procurement and installation of IT infrastructure:

Sr. No.	Key Activities
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1.	All the hardware shall be procured and installed by the SP on adhoc basis for this Project. However, the Service Provider will be fully responsible for maintaining these Assets as per the Warranty and AMC Clauses and will be fully accountable for the same. The minimum specification of the equipment is mentioned in Appendix VI.
2.	All the software used for SRRDA shall be licensed to SRRDA and will be the property of SRRDA. The licenses shall be perpetual.
3.	The Service Provider shall be responsible for end-to-end implementation and shall quote and provide/supply any items not included in the bill of material but required for commissioning of the application and meet the requirements of the RFP/Contract. SRRDA shall not pay for any of the equipment not quoted in the bid but are required for successful completion of the project. However, the same has to be supplied by the System Provider without any additional fees.
4.	The Service Provider shall procure all required transmission and connecting media as per the network design.
5.	The Service Provider will be responsible for delivering the equipment to the respective locations.
6.	The Service Provider may be asked to supply all the installation material/ accessories/ consumables (e.g. screws, clamps, fasteners, ties anchors, supports, grounding strips, wires etc.) necessary for the installation and operation of the systems.
7.	The Service Provider has to prepare and submit a delivery report including details of components supplied. The delivery report will be validated by the identified SRRDA authorized person.
8.	All the data created/captured under this Project shall also be the property of the SRRDA. The Acceptance testing requirements are detailed out in Appendix V of the RFP. The same may be further fine-tuned at the Project plan

	finalization stage.
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It is assumed that the entire route of a vehicle is covered by GPS and leading mobile network. But there might be some parts of the route where there is no network coverage. So the system must work in off-line mode too for these areas and will provide the data once the vehicle enters in the GPRS zone.

5.2.4. User Support and Maintenance for 2 years

A. Application monitoring and Compliance to Service Level Agreements

It is the responsibility of the Service Provider to:

- Monitor the application on a day-to-day basis to ensure that it functions reliably.
- Monitor application to ensure that the application does not suspend, hang etc.
- Monitor components, including but not limited to, Application servers, Web Servers, Middleware and other Servers on an ongoing basis to ensure smooth functioning of the applications.
- The Service Provider shall ensure compliance to uptime and performance requirements as indicated in the SLA of this RFP and any major changes to the software shall be planned accordingly by the Service Provider for ensuring the SLA requirements.
- Ensure the accuracy and timeliness of data uploaded as received.
- Resolve and report the data discrepancies to the designated SRRDA persons.
- The Service Provider shall submit a document on the performance of the application against the desired SLA on a Quarterly basis.

B. Application support including modifications and integration with future systems

The scope of Service Provider covers the following activities:

- Enhancement / modifications with respect to new /

enhanced / enriched functionality

- Ensure the desired functioning of the Interface / integration
- Test scripts preparation and interim application testing
- Application installation and testing whenever required
- Modification / development of reports
- Provide technical support on system parameters and requirement for SRRDA's Applications Software
- Manage the database administration according to the agreed standards.
- Present relevant information and training if applicable and necessary regarding the use and functions of new products and services to a defined number of relevant Users designated by SRRDA.
- Provide handholding support to end users in carrying out the business process transactions.

C. Bugs / Fixes Management

Bugs or Fixes Management is an important activity and based on the severity level, it becomes highly critical. As the parties involved are Users / functional team members of SRRDA, Application providers and Service Provider, SLAs may not be directly defined. Service Provider commits involvement in resolution on 'best of efforts' basis as per requirements. Following are the steps involved:

- Problem definition
- Context definition (through functional teams as per requirements)
- Request Analysis by System Provider
- Priority Categorization
- Logging with OEM and tracking to resolution

The Service Provider shall address all the errors/bugs/gaps in the functionality offered by the solution (vis-à-vis the SRS/FRS) at no additional cost during the operations & maintenance period (i.e. **2 years** from the date of final GO-Live). The Service Provider shall identify and resolve application problems like system malfunctions,

performance problems, data corruption etc. due to which the solution is not able to give the desired performance

The Service Provider shall be responsible for the following:

- Updating all available patch/ updates to the solution.
- Providing handholding support to end users
- Ensuring proactive and timely support in identification and provision of solutions including OEM Support for resolution.
- Timely logging of Bugs/Problems
- Daily / Weekly / Monthly Status Reports to SRRDA & other Project Stakeholders

D. Software Change and Version Control

- The Service Provider shall define the Software Capacity Building & Version control process and obtain approval for the same from SRRDA . The Service Provider shall maintain version control and configuration information for any system documentation and application software.
- Any changes/customizations to the application performed/ identified within the period of six months post “final Go-Live” are not to be considered as separate Change Requests and hence are to be carried out by the Service Provider at no extra cost. However, total man months for such changes/customizations shall not exceed 6 (six). In case the total effort crosses 6 man-months, further changes/customizations shall be handled through change control process.
- All configuration changes or minor customizations to the application (even if identified after the stabilization period of six months post “Go Live”) which require less than 5 man days of development effort are not to be considered as separate Change Requests and hence are to be carried out by the Service Provider at no extra cost throughout the period of contract.
- Only those major functional customization changes (requiring more than 5 man days of development effort) in the solution which have neither been mentioned in the approved SRS, nor included in the To-be functional solution and have not been

proposed within six (6) months from "Final Go Live", shall be carried out through a separate Change Control Note/Notice (CCN) prepared by the Service Provider (format has been provided as Form 2 Appendix III).

- However, any such requirement mentioned in the approved SRS or included in the To-be functional solution will be done at no extra cost.

Changes in the application software which are mandatorily required for complying to any of the predefined SLA requirements, FRS or To-be Functional solution cannot be treated as a separate Change Request, and hence are to be completed by the Service Provider at no extra cost

- All Change Requests submitted by the Service Provider will contain an effort estimate, which would be discussed with and approved by SRRDA. SRRDA may ask the Service Provider to provide justification using standard methodology like Function Point Analysis or any similar method.
- All changes during the stabilization or support & maintenance phase shall be subjected to the comprehensive & integrated testing by the Service Provider to ensure that the changes implemented in the system meets the desired and specified requirements of SRRDA and doesn't impact any other function of the system.
- For any changes to the software, Service Provider shall submit a document indicating proposed changes, impact to the system in terms of functional outcomes/additional features added to the system etc.
- The Service Provider is required to obtain approval from SRRDA for all the proposed changes before implementation of the same into production environment and such documentation is subject to review at the end of each quarter of operations & maintenance support.
- The Service Provider is required to keep all such documentation up to date to reflect the latest enhancements/modifications made to the application. All documentation should be prepared as per latest industry standards and should incorporate

necessary version control mechanism.

E. Maintenance of Configuration Information & System documentation

The Service Provider will provide detailed final system documentation for reference to SRRDA. Service Provider shall prepare the final User Manuals incorporating details of all menus and functionality provided by the System.

F. Operations and Maintenance of IT infrastructure

Operations and Maintenance of IT infrastructure shall include a range of services related to the operation & maintenance of the IT infrastructure. The Services under this shall cover the new IT Infrastructure setup. Following services shall form a part of managed services:

- a) Basic Infrastructure Services setup &
- b) Monitoring and Management Services

The concerned SLAs have been provided in the RFP.

The Service Provider shall provide monitoring and management services for an agreed service window during the period of **2 years** from the date of final acceptance test (Final Go live). The scope of the services for overall Physical and IT infrastructure management during this period shall include Monitoring, Administration and Management of the entire infrastructure together with other SRRDA's offices. The entire stack of monitoring and management services shall include the following:

- a) Help Desk Services
- b) Monitoring, Administration & Management Services of IT assets
- c) Backup & restore and archival services
- d) Storage, Administration & Management Services
- e) User Administration and Security
- f) Warranty and Annual Maintenance Contract

G. Warranty and Annual Maintenance Contract

Service Provider shall provide comprehensive warranty of all the tendered items supplied for the project. It shall be for 36 months

from the date of supply. Comprehensive AMC should also be provided from the date of end of warranty till the end of **2 years** from the final Go Live. Service Provider shall provide the comprehensive manufacturer's warranty in respect of proper design, quality and workmanship of all hardware, equipment, accessories etc. covered by this bidding document. Service Provider must warrant all hardware, equipment, accessories, spare parts, software etc. procured and implemented as per this bidding document against any manufacturing defects during the warranty period.

H. Annual Technical Service

- Service Provider shall maintain data regarding entitlement for software enhancements, refreshes, replacements and maintenance.
- If the Operating System or additional copies of Operating System are required to be installed / reinstalled / de-installed, the same should be done.
- Service Provider should carry out any requisite adjustments / changes in the configuration for implementing different versions of Application Software.
- Updates: The Service Provider shall provide and implement from time to time the Updates of the software and operating systems as required. The Service Provider should provide updates & patches of the IT software and tools to SRRDA as and when released by OEM without any cost to SRRDA. All the software shall have the latest updates at the end of Contract period.
- Service Provider shall provide patches to the licensed software including the IT software, operating system, databases and other applications.
- Software License Management: The Service Provider shall provide for software license management and control. Service Provider shall provide complete manufacturer's technical support for all the licensed software problems and/or questions, technical guidance, defect and non-defect related issues. Service Provider shall provide a single point-

of-contact for software support and provide licensed software support including but not limited to problem tracking, problem source identification, problem impact (severity) determination, bypass and recovery support, problem resolution, and management reporting.

- The manufacturer's technical support shall at a minimum include online technical support and telephone support during SRRDA's business hours (Business hours in SRRDA will be from 0930 hours to 1800 hours on weekdays (Mon-Sat)) with access for SRRDA and Service Provider to the manufacturer's technical support staff to provide a maximum of 4 hour response turnaround time. There should not be any limits on the number of incidents reported to the manufacturer. SRRDA shall have access to the online support and tools provided by the manufacturer. SRRDA shall also have 24x7 accesses to a variety of technical resources including the manufacturer's knowledge base with complete collections of technical articles.
- Service Provider shall have to undertake Operational Support Services of the entire IT system during the complete Implementation phase till the commissioning free of cost and **2 years** post that. The Service requirement and its associated SLA during the Operation phase are mentioned in separate section (Appendix IV of the RFP) in this bidding document.
- Service Provider shall deploy adequate operational staff at project locations for Application Development, Operations and Maintenance, Training and Capacity Building.
- Qualified Personnel of varying skills shall be provided by the System Provider. Service Provider shall have to propose an optimum (critical to the project) staffing plan so as to meet SRRDA's requirements along with the bid. Detailed role and responsibility of operational staff shall have to be indicated by along with the bid, however, SRRDA reserves the right to get the plans of Service Provider modified depending upon exact requirement. Team Composition as well as staff deployment is part of technical evaluation.

I. Application Development and Customization

Contractor would submit man power deployment plan and would ensure deployment of sufficient specialized and experienced man power throughout the project to complete the implementation, stabilization of the IT system in time successfully. The manpower deployment shall ensure that implementation of all the module shall happen in parallel. The SP shall deploy adequate number of system analysts, programmers, server administrator, and database administrators etc. so as to meet the project requirements including SLAs.

J. Operations and Maintenance

Service Provider shall provide the necessary Handholding support for the entirety of the Contract. However, in case more manpower is needed to meet the service level, the same shall be provided by the Service Provider.

Key Obligation of SP during Operation & Maintenance period	
1.	Maintain the entire project during the contract period as per the requirement provided in scope of work and Technical Specification of this RFP.
2.	Ensure and guarantee smooth functioning of the project during all the time of Contract Period.
3.	Maintain all computer infrastructures including hardware, software and network infrastructure so as to maintain minimum service levels stipulated in Service Level Agreement set forth in this RFP.
4.	Maintain minimum service levels in relation to maintenance of project all times during the Contract Period as set forth in this RFP.
5.	Replace faulty equipment, hardware, software at its own cost so as to maintain minimum service levels stipulated in this RFP.
6.	Shall make necessary arrangements to prevent any damage to VTS equipment
7.	Replace the equipment or system at its own cost, well ahead of the time when the utility thereof is reasonably expected to expire.

8.	Operations Manual, Maintenance Manual and other manuals in consultation with SRRDA or its supervision consultant specifying the detailed operation plan, methodology and time period of regular and preventive maintenance, comprehensive information of equipment, hardware, software used in Project, operation procedure of each sub system installed, the repair and maintenance procedures of each component and equipment of the Project, procedures for diagnosis, removal of bugs and replacement of any item of equipment, diagnosis procedures of faults and procedures for removing it and replacing. These manuals shall be detailed as part of scope of work and Technical Specification Document of RFP.
9.	Guarantee uptime as per the terms specified in technical specification set forth in this RFP during all times of contract period.
10.	Provide all MIS report specified in this RFP and any other reports required by SRRDA.
11.	Take all precautions to ensure that the Project including all software and hardware involved remains safe and secure in general and free from attempted manipulation, fraud, break down, compromising of data security, malware and virus attacks, physical attacks or damage due to neglect or omission.
12.	Ensure that any premises provided by SRRDA to the SP for the purpose of carrying out its obligations shall be used solely for the purpose of carrying out the functions intended and obligations placed under this agreement and not for any other purposes.
13.	Take prompt and reasonable action for redressal of each complaint received including complaints received by SRRDA related to project.
14.	Obtain and keep valid all applicable permits required by it under applicable laws for carrying out its scope of work during the Contract Period.
15.	Abide by all obligations related to maintenance requirement specified in technical specification set forth in this RFP during all times of Contract Period.

SRRDA's Obligation	
1.	Provide necessary access to the project locations for due and punctual performance of its obligations.
2.	Electricity expense at central control room shall be the responsibility of SRRDA
3.	Make regular payment to SP in conformity with the payment terms specified in this Agreement.
4.	Grant or where appropriate provide necessary assistance to the SP in securing applicable permits;
5.	Attempt to grant in a timely manner all such approvals, permissions.
6.	Authorizations which the SP may require or is obliged to seek from the SRRDA in connection with implementation of the project and the performance of SP.

5.2.5. Training and Capacity Building

The SP shall provide training to the department staff on various sub-systems of the project. The training shall include end user training, train the trainer programs, Administrator trainings, refresher courses etc. Providing adequate training to the various users is essential for the successful implementation of the project.

Training needs to be provided to people from the senior management, the Supervisory, Clerical Staff, Operational Staff, Conductors, drivers etc. Trainings need to be conducted based on a requisite mix of theory & practical/operational sessions. The trainings should be conducted in Hindi and Punjabi languages. Trainings may be conducted in shifts over a period of time.

The SP shall also be responsible for retraining the staff concerned whenever changes are made in the software and it is the responsibility of the SP to ensure that the operators are familiar with new versions of Software and its allied services.

The SP shall also conduct refresher courses on periodic basis for some of the trainings. It is mandatory that during the training, at least two trainers (1 technical trainer and 1 process

trainer) are available during the training.

5.2.6. Project Documentation

The Service Provider will provide detailed final system documentation for reference to SRRDA. Service Provider shall prepare the final User Manuals incorporating details of all menus and functionality provided by the System. SRRDA expects the following (not limited to) in the form of product documents. In addition, the Service Provider will provide ongoing product information for reference purposes and to facilitate self-education for SRRDA and other Personnel.

5.3 Project Deliverables and Timelines

Sr. No.	Activity/Task	Deliverables/ Milestone	Timelines (In weeks)
1	Letter of Award (LOA)	Copy of LOA	Project Start Date = T
2	Contract Signing	Copy of Contract	T + 1 week
3	<ul style="list-style-type: none"> • Project Planning • Development Implementation and Maintenance approach 	<ul style="list-style-type: none"> a) Finalized Project plan b) Finalized Inception Report 	T + 1 weeks
4	<ul style="list-style-type: none"> • Finalizing custom requirements • Requirement gathering (FRS) and preparation of SRS 	<ul style="list-style-type: none"> a) Finalized Requirement report b) Approved System requirement specification 	T + 2 weeks
5	<ul style="list-style-type: none"> • System Design – Detailed Test Plan 	Approved Test plan	T + 3 weeks
6	<ul style="list-style-type: none"> • System Development – Application development • System Testing 	Unit and Integration testing reports	T + 6 weeks
7	Procurement and installation of IT Infrastructure	Acceptance Certificate	T + 6 weeks

Sr. No.	Activity/Task	Deliverables/ Milestone	Timelines (In weeks)
8	Complete Cloud Infrastructure and Network Implementation	Acceptance of Cloud Infrastructure and Network Implementation	T + 4 weeks
10	UAT completion	Sign-off on Successful	T+ 7 weeks
11	<ul style="list-style-type: none"> • Training of relevant staff • Project Documentation 		T + 7 weeks
12	Go Live		T + 8 weeks
13	O & M Support, Maintenance and Warranty		2 years from go-live

5.4 Functional Requirements

The functional requirements are listed below:

- a) Vehicle Tracking System
- b) Command Center
- c) Mobile Application
- d) Web application

A. Vehicle Tracking System

The Scope of Work should broadly comprise the following activities:
Ability to locate a vehicle at a given time.

- Facility to auto-generate routes for the vehicles based on origin and destination point.
- Facility to track defined vs. actual movement of vehicles, capture deviations if any.
- Facility to view vehicle movements real-time on digital maps and provide information on current location on demand.
- Facility to view vehicle details of a particular vehicle on an interactive GIS Map supporting latitude, longitude location records generated by GPS device. This should include all possible types of map view like a roadmap, terrain, and other applicable views.

- Facility for users to access and view position/location information on GIS maps near real-time through a web interface with historic data displayed on maps.
- Facility for playing back the recorded details of the vehicle movement along the authorized route.
- The system should have analytics features as per requirements.
- Web-based Vehicle Tracking Software and customize the same as per the requirements to operate and maintain the GPS-based Vehicle Tracking B devices installed in Vehicles.
- It is assumed that the entire route of a vehicle is covered by GPS and a leading mobile network. But there might be some parts of the route where there is no network coverage. So, the system must work in off-line mode too for these areas and will provide the data once the vehicle enters the mobile network zone.
- The Bidder shall be responsible for updating and upgradation (if required) of all Software and Hardware for the successful operation of the project during the contract period.
- All data generated during the operation period shall be the property of the SRRDA & NRIDA. The vendor is also required to submit the data every 3-5 days, this data will be submitted on GeoSadak i.e., <https://geosadak.pmgysy.nic.in/> a web-based GIS application of NRIDA.
- The successful bidder has to share the API/data/ specific MIS as per the requirements of SRRDA / NRIDA without any additional charges.
- All the supporting accessories and associated software, monitoring dashboard will be provided by the bidder, and apart from the quoted in the financial proposal, no other cost will be entertained by the SRRDA thereafter.
- Dynamic reporting system. Provide the following customized MIS report as per requirements of SRRDA/NRIDA. Some of the reports are as follows:
 - Live location of the Vehicle
 - Working Hour/ Efficiency reports
 - Detailed Activity reports

- Vehicle Summary
- History Report (showing path taken by vehicle)
- Trip-wise Report Vehicle stoppage report.
- Monthly monitoring summary etc.

B. Command Centre

- 1) Setup control room at SRRDA level for live tracking of vehicles. Provide a graphical interface to make quick position related assessments. The application shall support dynamic monitoring of vehicles moving out of their defined routes and be able to raise alerts to the control station.
- 2) The application should provide the location and history of the vehicles in the GIS map. The tracking data will be kept live in the system for atleast 6 months. There will be provision to support archive and restore functions for older data.
- 3) The Data Center will be hosted in a cloud environment available with the State Data Center at Mohali.
- 4) The CC shall have seating space for 4-5 persons who can work during the working hours.

C. Mobile Application

Selected Service Provider shall have to develop, deploy and maintain an android/ IOS mobile application to help SRRDA & Field staff to get various information of the movement of the vehicles/machinery during construction of road. The mobile application should have the following specifications:

i. Live Vehicle tracking

1. Display the live position of the vehicle on the map
2. Display the route, stops and live position of the vehicle along that route on a map simultaneously on a single screen.

ii. Other consideration for Service Provider

1. The android mobile application must be compatible with all android smart phones available in the market that support android OS 4.4 or higher.

2. The application must be compatible with all smart phones across all popular platforms – android, IOS, Windows phone, Blackberry, Nokia smart phone.
3. Need of continuous evolution of the mobile application to suite the changing demands as new technology becomes available.
4. Ability to zoom in and zoom out and pan the map inside the mobile application.
5. Map and entire interface to be automatically formatted to fit the size of user screen.
6. The app shall be offered in both English and Punjabi languages.
7. All features except live information should be available in offline mode.

D. Web Application

- 1) The web application should have the basic features of monitoring and should possess a report generating feature. The web application should include GPS vehicle tracking.
- 2) Further, data captured will be ported on GIS web-based application Geosadak through Web API.
- 3) Facility to auto-generate routes for the vehicles based on origin and destination points.

6. Terms of Payment

6.1 Payment Schedule

Payments shall be made as per the below milestones.

Milestones	Amount
30 days after Final Go-live (Completion of Design, Development of Web Application, Mobile Application, setting up of Command Control Center, Installing of 400 VTUs or covering installation of all the machinery /vehicles being used for construction of roads at that instance)	40% of total project cost

Milestones		Amount
O & M + Warranty Period (2 Years)		
Year 1	Q1	7.5 % of total project cost
	Q2	7.5 % of total project cost
	Q3	7.5 % of total project cost
	Q4	7.5 % of total project cost
Year 2	Q1	7.5 % of total project cost
	Q2	7.5 % of total project cost
	Q3	7.5 % of total project cost
	Q4	7.5 % of total project cost

For the O&M period, the payments will be made for each quarter after 30 days of ending of the particular quarter.

6.2 Payment Terms

1. In consideration of the Services and subject to the provisions of the Master Service Agreement (MSA) (to be signed later) and SLA, the SP shall be eligible to receive payments (RS, MG) from SRRDA in accordance with Payment Schedule of the MSA (to be signed later).
2. SRRDA will pay for the Services as stated in accordance with the Terms of Payment Schedule. In the event of failure of the SP to meet the service level defined in the Service Level Agreement, SRRDA would calculate a financial sum and debit the same against the Terms of Payment as defined in the Payment Schedule. Such sum deducted will be determined in accordance with the terms of the Service Level Agreement.

Except as otherwise provided for herein or as agreed between the parties in writing, SRRDA shall not be required to make any payments in respect of the Services other than those covered by the Terms of Payment Schedule.

3. SP will have to submit proof of having completed all payment milestones to SRRDA for its sign-off. SRRDA shall make payments based on due diligence of submitted reports.

6.3 Invoicing and Settlement

1. The Service Provider will submit its invoices in accordance with the following principles:

- a. Generally and unless otherwise agreed in writing between the parties or expressly set out in the MSA(to be signed later), the SP shall raise an invoice after getting sign-off from SRRDA for agreed amount (including SLA & Penalty adjustments if any).
 - b. The invoice shall be submitted along with the necessary approval / signoff/acceptance / certification provided by the concerned parties for the respective Deliverables, failing which SRRDA reserves the right to reject the invoices.
 - c. Along with the invoice, the SP is required to submit the Deliverables linked with the payment in softcopy and hardcopy formats, as applicable failing which SRRDA reserves the right to reject the invoices.
 - d. Any invoice presented in accordance with this Schedule shall be in a form agreed with SRRDA.
2. Invoices shall be accurate and all adjustments (if any) to payments to be made to the SP shall be applied to the next payment invoice of the SP.
 3. Payment for invoices shall be made preferably within 60 days of the receipt of correct and valid invoice by SRRDA, which has to be after completion of the said activities, and after obtaining the signoff from SRRDA for the required Deliverables and is subject to penalties/ adjustments based on the SP's performance. The penalties are imposed on the SP as per the SLA criteria. In case penalties are incurred by the SP, the same shall be adjusted in the payment towards invoices.

6.4 Additional Costs

1. SRRDA shall make payments to the SP at the times and in the manner set out in the Terms of Payment Schedule subject always to the fulfillment by the SP of the obligations herein.
2. All payments shall be made after adjustments required for any SLA based penalties.
3. No invoice for extra work / charge order on account of change order will be submitted by the SP unless the said extra work / change order has been authorized / approved by SRRDA in writing in accordance with Change Control Schedule as agreed MSA.

4. The prices should be mentioned without any qualifications whatsoever and should include all taxes, duties, fees, levies and other charges as may be applicable in relation to the activities proposed to be carried out. It is mandatory that such charges wherever applicable/ payable should be indicated separately. For the project bid, the SP is expected to take into account all taxes (except Service Tax).

6.5 Currency of Payment

Payment shall be made in Indian Rupees only.

6.6 Taxes and Statutory Payments

1. All relevant taxes would be considered for reimbursement on actuals as per SRRDA's discretion and prevailing Government Laws.
2. The SP shall bear all personal / income taxes levied or imposed on its staff, vendor etc. on account of payment received under the contract. The SP shall bear all income/corporate taxes, levied or imposed on the SP on account of payments received by it from SRRDA for the work done under the contract.
3. SRRDA or its nominated agencies shall be responsible for withholding taxes from the amounts due and payable to the SP wherever applicable. The SP shall pay for all other taxes, duties or levies in connection with the MSA(to be signed later), SLAs, and any other Project Engagement Definition including, but not limited to, property, sales, use, excise duty, value-added, goods and services, consumption and other applicable taxes, duties or levies.
4. In the event of any increase or decrease of the rate of GST on Services, the consequential effect shall be to the account of SRRDA.
5. In the event of any increase or decrease of any other tax, levies, currency exchange rates etc. due to any statutory notification(s) during the term of the MSA (to be signed later), the consequential effect shall be to the account of the SP.

6.7 Liquidated Damages

6. In addition to the penalty as mentioned in the SLA, liquidated Damages will be levied on the SP, in the event of the SP:
 - a. Failing to meet the milestones provided for in the MSA,

- b. Failing to perform the responsibilities and obligations as set out in MSA to the complete satisfaction of SRRDA or any of its nominated agencies.
7. SRRDA shall be entitled without prejudice to its other rights and remedies, to deduct from the price payable to the SP and also to encash the Performance Bank Guarantee, provided the total amount recovered does not exceed the Total Contract Value, **whichever is higher.**
8. In the event the bidder is unable to complete the assignment in defined time period, penalty of 1% of contract value will be charged for each week delay, with maximum limit being 10% of total contract amount. If the delay continues beyond 6 weeks, SRRDA may terminate the Agreement and may take action as appropriate as per law.

7. Exit Management

7.1 Exit Management Plan

- a) An Exit Management plan shall be furnished by System Provider in writing to the Purchaser within 120 days from the Effective Date of this Agreement, which shall deal with at least the following aspects of exit management in relation to the Agreement as a whole and in relation to the Project Implementation, and the Service Levels.
 - i. A detailed program of the transfer process that could be used in conjunction with a Replacement System Provider including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer.
 - ii. Plans for the communication with the System Provider's sub-contractors, staff, suppliers, customers and any related third party as necessary to avoid any material detrimental impact on Project's operations as a result of undertaking the transfer.
 - iii. Plans for provision of contingent support to Replacement System Provider for a reasonable period after transfer.
- b) The System Provider shall re-draft the Exit Management Plan annually thereafter to ensure that it is kept relevant and up to date.
- c) Each Exit Management Plan shall be presented by the System Provider and approved by the Purchaser.
- d) In the event of termination or completion of the contract period, each Party shall comply with the exit Management Plan.
- e) During the exit management period, the System Provider shall continue to deliver the Services.
- f) Payments during the Exit Management period shall be made in accordance with the Terms of Payment.
- g) Appropriate spares to carry out the operations shall be handed over by the SP to the Purchaser.

7.2 Transfer of Assets

- a) The Purchaser shall be entitled to serve notice in writing to the Bidder at any time during the exit management period, requiring the

Bidder and/ or its Consortium partners to provide the Purchaser with a complete and up to date list of the Project Assets within 30 (Thirty) days of such notice which are to be transferred/ handed over to the Purchaser.

- b) In the event, if the Project Assets to be transferred are mortgaged to any financial institutions by the Bidder, the Bidder shall ensure that all such liens and liabilities have been cleared beyond doubt, prior to such transfer. All documents regarding the discharge of such lien and liabilities shall be furnished to the Purchaser.

Bidder shall transfer the application/software, software code, databases, hardware, business data, architecture schematics, designs, storage media and other information/documents which will be developed, procured or customized during the project to the purchaser within 30 (Thirty) days of notice period.

- c) SP shall have to transfer the whole setup in optimum performance conditions as per the contract. The System Provider shall provide all such information as necessary to have a seamless handover to the Purchaser or its Replacement System Provider and which the System Provider has in its possession or control at any time during the transfer period.
- d) The System Provider shall commit adequate resources to comply with its obligations under this Exit Management Procedures. The System Provider shall get the exit management plan approved by the purchaser.

8. Appendix I: Technical Forms

8.1 Form 1: Particulars of the Service Provider

Sr. No.	Information Sought	Details to be Furnished
1	Name and address of the bidding Company	
2	Incorporation status of the firm (public limited / private limited, etc.)	
3	Year of Establishment	
4	Date of registration	
5	ROC Reference No.	
6	Details of company registration	
7	Name, Address, email, Phone nos. and Mobile Number of Contact Person	

8.2 Form 2: Bank Guarantee for Earnest Money Deposit

To,

<Name>

<Designation>

<Address>

<Phone Nos.>

<Fax Nos.>

<email id>

Whereas <<Name of the Bidder>> (hereinafter called 'the Bidder') has submitted the bid for Submission of RFP # <<RFP Number>> dated <<Date>> for <<Name of the assignment>> (hereinafter called "the Bid") to State Rural Roads Development Agency(SRRDA) Know all Men by these presents that we << >> having our office at <<Address>> (hereinafter called "the Bank") are bound unto the State Rural Roads Development Agency(SRRDA) (hereinafter called "the Purchaser") in the sum of INR <<Amount in figures>> (Rupees <<Amount in words>> only) for which payment well and truly to be made to the said Purchaser, the

Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this <<Date>>

The conditions of this obligation are:

1. If the Bidder having its bid withdrawn during the period of bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of validity of bid
 - a) Withdraws his participation from the bid during the period of validity of bid document; or
 - b) Fails or refuses to participate in the subsequent Tender process after having been short listed;

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to <<insert date>> and including <<extra time over and above mandated in the RFP>> from the last date of submission and any demand in respect thereof should reach the Bank not later than the above date.

NOTWITHSTANDING ANYTHING CONTAINED HEREIN:

- I. Our liability under this Bank Guarantee shall not exceed INR <<Amount in figures>> (Rupees <<Amount in words>> only)
- II. This Bank Guarantee shall be valid up to <<insert date>>)
- III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this Bank Guarantee that we receive a valid written claim or demand for payment under this Bank Guarantee on or before <<insert date>>) failing which our liability under the guarantee will automatically cease.

(Authorized Signatory of the Bank)

Seal:

Date:

8.3 Form 3: Letter of Proposal

To:

<Location, Date>

<Name>

<Designation>

<Address>

<Phone Nos.>

<Fax Nos.>

<email id>

Subject: Submission of the Technical bid for <Name of the Systems Implementation assignment>

Dear Sir/Madam,

We, the undersigned, offer to provide the Installation and maintenance of Vehicle Tracking System to the Purchaser on <Name of the Systems Implementation engagement> with your Request for Proposal dated <insert date> and our Proposal. We are hereby submitting our Proposal, which includes this technical bid sealed in a separate envelope.

We hereby declare that all the information and statements made in this technical bid are true and accept that any misinterpretation contained in it may lead to our disqualification.

We undertake, if our Proposal is accepted, to initiate the Implementation services related to the assignment not later than the date indicated in Fact Sheet.

We agree to abide by all the terms and conditions of the RFP document. We would hold the terms of our bid valid for <120> days as stipulated in the RFP document.

We understand you are not bound to accept any Proposal you receive.

Yours sincerely,

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:

Location: _____ Date: _____

8.4. Form 4: Project Citation Format

Relevant IT project experience (provide no more than 5 projects in the last 5 years)	
General Information	
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 1. Live Vehicle Tracking Number Of Vehicles	
Other Details	
Total cost of the project	
Total cost of the services provided by the respondent	
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	
Copy of Work Order	

8.5.1 Form 5: Proposed Solution

Technical approach, methodology and work plan are key components of the Technical Proposal. At a minimum you are suggested to provide the sections:

1	<p>Approach and Methodology to perform the work in this assignment which highlights Understanding of the objectives of the assignment: The extent to which the Systems Implementer’s approach and work plan respond to the objectives indicated in the Statement/Scope of Work</p> <p>Completeness and responsiveness: The extent to which the proposal responds exhaustively to all the requirements of all the Terms of Reference</p>
2	<p>Solution Proposed : Qualitative assessment based on Demonstration of understanding of the Department’s requirements through providing:</p> <ul style="list-style-type: none"> – Solution proposed and its components, <ul style="list-style-type: none"> • Technologies used, • Scale of implementation, • Challenges likely to be encountered • Mitigation proposed • Client references
3	Work plan and manpower deployment plan

Any other pertinent section which helps strengthen technical responsiveness can be added

8.5.2 Form 6 A: Bill of Material of entire solution

All components of scope of work including products, applications, system software, hardware, Warranty, AMC, training, Helpdesk etc. components needs to be specified in clear cut tabular format. Brevity, Precisions and completeness is expected in providing the solution. Bill of Material provided in Annexure needs to be provided mandatorily. Since this is key a part of technical evaluation, Bidders are advised to provide full details.

In addition to the above, indicative tabular format are enclosed below. Bidders are free to suitably modify the same.

Solution Proposed

Sr. No.	Proposed Solution (Provide the Product Name or fill Custom Built, in case of a new development)	Version & Year of Release	OEM	Features & Functionalities	O&M Support (Warranty / ATS)/: as required as per RFP)	Reference in the Submitted Proposal (Please provide page number / section number/ volume

System Software

Sr. No.	Item	Proposal Solution (Provide the Product Name or fill Custom Built, in case of a new development)	Unit of Measurement	Number of Licenses (Development Environment)	Number of Licenses (UAT)	Number of Licenses (Training)

8.5.3. Form 7: Proposed Work Plan

Sr. No.	Activity	Calendar Weeks												
		1	2	3	4	5	6	7	8	9	10	11	12	n
1														
2														
3														
4														

8.6. Form 9: Deviations

To:

<Location, Date>

<Name>

<Designation>

<Address>

<Phone Nos.>

<Fax Nos.>

<Email id>

Dear Sir:

Subject: Deviations <Provide Name of the Implementation Assignment>

We declare that all the services shall be performed strictly in accordance with the Tender documents except for the variations and deviations, all of which have been detailed out exhaustively in the following statement, irrespective of whatever has been stated to the contrary anywhere else in our bid.

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

A - On the Terms of Reference

[Suggest and justify here any modifications or improvement to the Scope of Work you are proposing to improve performance in carrying out the assignment (such as deleting some activity you consider unnecessary, or adding another, or proposing a different phasing of the activities). Such suggestions should be concise and to the point, and incorporated in your Proposal.]

Sr. No	Deviation	Material	Non Material	Impacted Deliverable (s)	Impacted Timeline (s)	Financial Impact
1.	<Deviation description >	<Yes / No>	<Yes / No>	<Name(s) of Deliverables to get affected by the Deviation>	<Effect on Timelines due to the Deviation>	<Value>

Sr. No	Deviation	Material	Non Material	Impacted Deliverable (s)	Impacted Timeline (s)	Financial Impact
2.	<Deviation description >	<Yes / No>	<Yes / No>	<Name(s) of Deliverables to get affected by the Deviation >	<Effect on Timeline due to the Deviation >	<Value>

B – Any other areas

Sr. No	Deviation	Material	Non-Material	Impacted Deliverable(s)	Impacted Timeline(s)	Financial Impact
1.	<Deviation description >	<Yes / No>	<Yes / No>	<Name(s) of Deliverables to get affected by the Deviation >	<Effect on Timelines due to the Deviation >	<Value>
2.	<Deviation description >	<Yes / No>	<Yes / No>	<Name(s) of Deliverables to get affected by the Deviation >	<Effect on Timelines due to the Deviation >	<Value>

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Firm:

Address:

8.7. Form 10: Illustrative Manufacturers'/Producers' Authorization Form

[This form has to be provided by the OEMs of the products proposed] No. Date:

To:

OEM Authorization Letter

Dear Sir:

Ref: Your RFP Ref: [*] dated [*]

We who are established and reputable manufacturers / producers of _____ having factories / development facilities at (*address of factory / facility*) do hereby authorize M/s _____ (*Name and address of Agent*) to submit a Bid, and sign the contract with you against the above Bid Invitation.

We hereby extend our full guarantee and warranty for the Solution, Products and services offered by the above firm against this Bid Invitation.

We also undertake to provide any or all of the following materials, notifications, and information pertaining to the Products manufactured or distributed by the Supplier:

- a. Such Products as the Purchaser may opt to purchase from the Supplier, provided, that this option shall not relieve the Supplier of any warranty obligations under the Contract; and
- b. in the event of termination of production of such Products:
 - i. advance notification to the Purchaser of the pending termination, in sufficient time to permit the Bank to procure needed requirements; and
 - ii. Following such termination, furnishing at no cost to the Purchaser, the blueprints, design documents, operations manuals, standards, source codes and specifications of the Products, if requested.

We duly authorize the said firm to act on our behalf in fulfilling all installations, Technical support and maintenance obligations required by the contract.

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.

9. Appendix II: Financial Forms

9.1. Form 1: Covering Letter

To:

<Location, Date>

<Name>

<Designation>

<Address>

<Phone Nos.>

<Fax Nos.>

<Email id>

Subject: Submission of the financial breakup for <Provide Name of the Implementation Assignment>

Dear Sir/Madam,

We, the undersigned, offer to provide the Implementation services for <<*Title of Implementation Services*>> in accordance with your Request for Proposal dated <<*Date*>> and our Technical Proposals. Our Solution for developing, implementing and maintaining the subject line assignment is for the sum of <<*Amount in words and figures*>>. This amount is inclusive of the local taxes.

1. PRICE AND VALIDITY

- All the prices mentioned in our Tender are in accordance with the terms as specified in the RFP documents. All the prices and other terms and conditions of this Bid are valid for a period of <days> calendar days from the date of opening of the Bid.
- We hereby confirm that our prices include all taxes. However, all the taxes are quoted separately under relevant sections.
- We understand that the actual payment would be made as per the existing GST on Services rates during the time of payment.

2. UNIT RATES

We have indicated in the relevant forms enclosed, the unit rates for the purpose of on account of payment as well as for price adjustment

in case of any increase to / decrease from the scope of work under the contract.

3. QUALIFYING DATA

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

4. PERFORMANCE BANK GUARANTEE

We hereby declare that in case the contract is awarded .to us, we shall submit the Performance Bank Guarantee as specified in the <Appendix III> of this RFP document.

Our Financial Costs shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e., [*Date*].

We understand you are not bound to accept any Proposal you receive.

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

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

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Firm:

Address:

*Please note: GST on Services which will be paid extra by SRRDA as per the prevailing rates. All other taxes, duties insurance (if any) will be borne by bidder.

9.2. Form 2: Detailed Financial Breakup

Below is the format for the detailed cost break up to be provided by the Bidder. This is to be submitted online ONLY.

Detailed Breakup of individual components													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sr. No.	Category	Component	Qty.	Unit Price	Total Cost (exclusive of taxes)	Tax	Total Cost (inclusive of taxes) (6+7)	O&M and warranty Support Cost	Total O&M Cost for 2 years excluding taxes (9+10)	Tax on O&M for 2 Years	Total O&M Cost (including taxes 11+12)	Total Tax Amount (7+12)	Total Cost including taxes (8+13)
								2 Yrs.					
1. Vehicle Tracking System													
i.	Software Dev, Testing, Deployment, Maint.)	Vehicle Tracking System application (web portal mobile application + Reporting)											
ii.	Hardware (Procurement, Installation, Commissioning & Maintenance)	Vehicle Mounting Unit (GPS & other consumables)											
iii.	Communication	GPRS SIM (including recurring data cost)											
2. Command Control Center													
i	Hardware (Procurement, Installation,	Display Monitor											

Detailed Breakup of individual components													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sr. No.	Category	Component	Qty.	Unit Price	Total Cost (exclusive of taxes)	Tax	Total Cost (inclusive of taxes) (6+7)	O&M and warranty Support Cost	Total O&M Cost for 2 years excluding taxes (9+10)	Tax on O&M for 2 Years	Total O&M Cost (including taxes 11+12)	Total Tax Amount (7+12)	Total Cost including taxes (8+13)
								2 Yrs.					
	Commissioning, Maintenance)												
ii	Hardware (Procurement, Installation, Commissioning, Maintenance)	Video Wall Solution including controller, LAN wires, any other relevant consumables etc.as per RFP											
3.	SRRDA Office												
i	Hardware (Procurement, Installation, Commissioning, Maintenance)	Laptop											
ii	Hardware (Procurement, Installation, Commissioning, Maintenance)	Printer (including all printing related consumables such as ink, papers etc.)											
4.	Cloud Infrastructure												
i	Software License	License for Google Maps to show real time vehicle position											

Detailed Breakup of individual components													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sr. No.	Category	Component	Qty.	Unit Price	Total Cost (exclusive of taxes)	Tax	Total Cost (inclusive of taxes) (6+7)	O&M and warranty Support Cost	Total O&M Cost for 2 years excluding taxes (9+10)	Tax on O&M for 2 Years	Total O&M Cost (including taxes 11+12)	Total Tax Amount (7+12)	Total Cost including taxes (8+13)
								2 Yrs.					
ii	Training	As and when required in consultation with SRRDA											
iii	Others	Bidders are free to add items which are deemed required for the execution of the project.											
5.	Total Project Cost												

Note: Financial Quotation is to be given for a minimum of 400 vehicles in the field. No additional payment will be made by SRRDA other than for the items listed above.

10. Appendix III: Template for PBG & CCN
10.1. Form 1: Performance Bank Guarantee

PERFORMANCE SECURITY:

<Designation>

<Address>

<Phone Nos.>

<Fax Nos.>

<Email Id.>

Whereas, <<name of the supplier and address>> (hereinafter called "the Bidder") has undertaken, in pursuance of contract no. <Insert Contract No.> dated. <Date> to provide Implementation services for <<name of the assignment>> to Purchaser (hereinafter called "the beneficiary")

And whereas it has been stipulated by in the said contract that the Bidder shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with its obligations in accordance with the contract;

And whereas we, <Name of Bank> a banking company incorporated and having its head /registered office at <Address of Registered Office> and having one of its office at <Address of Local Office> have agreed to give the supplier such a bank guarantee.

Now, therefore, we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of INR<Insert Value> (Rupees <Insert Value in Words> only) and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of INR <Insert Value> (Rupees <Insert Value in Words> only) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Bidder before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the Bidder shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This Guarantee shall be valid until <<Insert Date>>)

Notwithstanding anything contained herein:

I. Our liability under this bank guarantee shall not exceed INR <Insert Value> (Rupees <Insert Value in Words> only).

II. This bank guarantee shall be valid up to <Insert Expiry Date>)

III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this bank guarantee that we receive a valid written claim or demand for payment under this bank guarantee on or before <Insert Expiry Date>) failing which our liability under the guarantee will automatically cease.

10.2. Form 2: Change Control Note/Notice (CCN) Format

Change Control Note	CCN Number:
Part A: Initiation	
Title:	
Originator:	
Sponsor:	
Date of Initiation:	
Details of Proposed Change	
(To include reason for change and appropriate details/specifications. Identify any attachments as A1,	
A2, and A3 etc.)	
Authorized by :	Date:
Name:	

Signature: Received by the IP	Date:
Name:	
Signature:	
Change Control Note	CCN Number:
Part B : Evaluation	
(Identify any attachments as B1, B2, and B3 etc.) Changes to Services, charging structure, payment profile, documentation, training, service levels and component working arrangements and any other contractual issue.	
Brief Description of Solution:	
Impact:	
Deliverables:	
Timetable:	
Charges for Implementation: (including a schedule of payments)	
Other Relevant Information: (including value-added and acceptance criteria)	
Authorized by the Implementation Partner	Date:
Name:	
Signature:	

11. Appendix IV: Service Levels

11.1. Purpose of this Agreement

The purpose of this SLA is to clearly define the levels of service to be provided by SP (System Provider) to Purchaser (State Rural Roads Development Board) for the duration of this contract or until this SLA has been amended.

11.2. Description of Services Provided

SP shall provide service as defined in Detailed Scope of Work section.

11.3. Duration of SLA

This Service level agreement would be valid for entire period of contract.

11.4. Service Level Agreements & Targets during Operations, Support and Maintenance

This section is agreed to by Purchaser and SP as the key SP performance indicator for this engagement. The following section reflects the measurements to be used to track and report systems performance on a regular basis. The targets shown in the following tables are for the period of contract or its revision **whichever is later.**

Sr.No.	Service	Minimum SLA/ Uptime required	Penalty
1	Entire VTS system implementation	Within the prescribed timeline.	Penalty of 1% of contract value for each week delay, with maximum limit being 10% of total contract amount
2	Application availability	>=99%	No deduction
		97% to 99%	2% penalty on the monthly charges

Sr.No.	Service	Minimum SLA/ Uptime required	Penalty
		95% to 97%	5% penalty on the monthly charges
		93% to 95%	8% penalty on the monthly charges
		91% to 93%	10% penalty on the monthly charges
		<91%	Not acceptable. SRRDA may terminate the contract.
3	Hardware repair & replacement	Should be repaired or replaced within 12 - 24 hrs. from the time of logging the complaint	No deduction
		24 hrs. to 48 hrs.	1% penalty on the monthly charges
		48 hrs. to 72 hrs.	2% penalty on the monthly charges
		72 hrs. to 96 hrs.	4% penalty on the monthly charges
		96 hrs. to 120 hrs.	6% penalty on the monthly charges

Sr.No.	Service	Minimum SLA/ Uptime required	Penalty
		120 hrs. to 144 hrs.	8% penalty on the monthly charges
		144 hrs. to 168 hrs.	10% penalty on the monthly charges
		168 hrs. to 192 hrs.	20% PBG deduction
		192 hrs. to 216 hrs.	50% PBG deduction
		>216 hrs.	Not acceptable. SRRDA may terminate the contract.
4	Training	100%	Training to be provided to department as per finalized schedules. Non completion of training within specified time frame will leads to a Penalty of Rs.500/- per person /Week

Note: Monthly Charges = (Quarterly payment amount/3)

Uptime Calculation for the month:

- a) $\{\% \text{ Monthly Availability} = [(\text{Actual Uptime} + \text{Scheduled Downtime}) / \text{Total No. of Hours in a Month}] \times 100\}$
- b) "Actual Uptime" means, of the Total Hours, the aggregate number of hours in any month during which each of the equipment is actually available for use.
- c) "Scheduled Downtime" means the aggregate number of hours in any month during which each equipment, is down during total Hours, due to preventive maintenance, scheduled maintenance, infrastructure problems or any other situation which is not attributable to SP's (or Service provider's) failure to exercise due care in performing SP's responsibilities.
- d) The Purchaser would provide a maximum of 04 hours of planned downtime for the preventive maintenance (as part of scheduled downtime) per month per equipment/service.
- e) The downtime for scheduled maintenance (patch application, upgrades – OS, Database, etc.) would need to be mutually agreed between Purchaser and the Bidder. To reduce this time, various maintenance activities can be clubbed together with proper planning.
- f) "Total Hours" means the total hours over the measurement period i.e. one month (24 * number of days in the month).

Cumulative Downtime Calculation:

- a) The recording of downtime shall commence at the time of registering the call with Service Provider for any downtime situation for the equipment.
- b) Downtime shall end when the problem is rectified and the application/ service is available to the user.
- c) Down time will not be considered for following:
- i. Pre-scheduled preventive maintenance and health checks (Scheduled Downtime).
 - ii. Failover time (30 minutes) in case of cluster environment. Beyond which the service would be considered to be not available and appropriate penalty shall be imposed on the SP.
- d) If the department elects to continue the operation of the machine / equipment, when a part of the machine is giving problem and leading

to downtime, the commencement of downtime shall be deferred until the purchaser releases the machine / equipment to the SP for remedial action.

11.5. Breach of SLA

In case the SP does not meet the service levels mentioned in para '4 - Service Level Agreements & Targets during Operations, Support and Maintenance' of this section, for three (3) continuous time-periods in a quarter as specified in the relevant clause, the Purchaser will treat it as a case of breach of Service Level Agreement. The following steps will be taken in such a case:-

- i. Purchaser issues a show cause notice to the SP.
- ii. SP should reply to the notice within three working days.
- iii. If the Purchaser authorities are not satisfied with the reply, the Purchaser will initiate termination process.

11.6. Exclusions

The SP will be exempted from any delays or slippages on SLA parameters arising out of following reason:-

- a) Delay in execution due to delay (in approval, review etc) from Purchaser's side. Any such delays will be notified in written.

11.7. Reporting Procedures

The SP's representative will prepare and submit SLA performance reports in an agreed upon format by the 5th working day of subsequent month of the reporting period. The reports will include "actual versus target" SLA performance, a variance analysis and discussion of appropriate issues or significant events.

11.8. SLA Change Control

a) General

It is acknowledged that this SLA may change as Purchaser's business needs evolve over the course of the contract period. As such, this document also defines the following management procedures:

- i. A process for negotiating changes to the SLA.
- ii. An issue management process for documenting and resolving particularly difficult issues.

- iii. Purchaser and SP management escalation process to be used in the event that an issue is not being resolved in a timely manner.
- iv. Any changes to the levels of service provided during the term of this agreement will be requested, documented and negotiated in good faith by both parties. Either party can request a change. Changes will be documented as an addendum to this document and consequently the contract.

b) SLA Change Process

Both the parties may amend this SLA by mutual agreement in accordance. Changes can be proposed by either party. Normally the forum for negotiating SLA changes will be Purchaser's monthly review meetings.

c) Version Control

All negotiated SLA changes will require changing the version control number. As appropriate, minor changes may be accumulated for periodic release (e.g. every quarter) or for release when a critical threshold of change has occurred.

11.9. Management Escalation Procedures

The purpose of this escalation process is to provide a quick and orderly method of notifying both parties that an issue is not being successfully resolved at the lowest possible management level. Implementing this procedure ensures that purchaser and SP management are communicating at the appropriate levels. Escalation should take place on an exception basis and only if successful issue resolution cannot be achieved in a reasonable time frame.

- a) All issues would be raised to the project management team, which is completely responsible for the day to day aspects of the implementation. The project management team shall classify the issues based on their severity level and resolve them within appropriate timelines.
- b) If project management team is unable to resolve an issue, the issue would be escalated to the top management with options/ risks detailed for decision. Top management will make decisions based on the options/ risks presented.

In case one or both the parties are unsatisfied with the decision of the top management of the Purchaser, the dispute will be resolved as specified in this RFP

12. Appendix V: Acceptance Testing Requirements

Acceptance Testing

Acceptance testing is an essential part of any IT Solution implementation project. In this stage the Service Provider (SP) will test and demonstrate the various individual user specific functionalities as an entire system. The primary goal of Acceptance Testing is to ensure that the solution implemented (including all the systems, deliverables and services) meets the pre-defined requirements/ specifications for functionalities, performance and security. This is ensured by defining clear, quantifiable metrics for accountability for each of the following:

- IT Application (all the modules & sub-modules and integration with other IT systems/ legacy applications
- IT Infrastructure including Network connectivity & hardware components · Project Documentation

The Service Provider shall primarily be responsible for ensuring that the Acceptance testing is carried out. SRRDA along with the project management team (PMU) will approve the completeness of such acceptance testing. Service Provider will have the fundamental responsibility of designing, developing, installing, testing & commissioning the various components of the project to deliver the services in complete conformity with the requirements stated in the RFP & the requisite SLAs. All the corrections/ modifications identified and agreed during the Acceptance Test Procedure (ATP) must be carried out by the System Provider. The Service Provider will ensure that it provides the system/ test documents for Acceptance Test Procedure as per the Implementation Schedule and then with the facilitation of SRRDA will demonstrate, handhold and complete the Acceptance testing expeditiously. If certain minor problems/ faults persist, the Service Provider may proceed with the Acceptance Testing & make mention of the same in the ATP proceedings. The faults can be pursued subsequently and a supplementary ATP limited to maximum of 2 supplementary tests in total can be carried out for the concerned areas.

The SP shall finalize an Acceptance Test schedule at least 7 days in advance of offer for acceptance testing in consultation with SRRDA. SP shall also clearly indicate the specifications clause(s) verified by

each test. The Acceptance Test schedule shall be exhaustive based on the specifications and will generally cover the following:

- Setting up of the test environment
- Functional test on individual equipment, network, software, Reporting etc. as per specifications
- System and/or Integration test on solution as a whole
- Hardware and network equipment testing before commissioning
- Capacity/ Load test
- 100% traffic trials on the network.
- Data updating at DR site with incremental update as well as flush update. · Switch over from main site to DR site, Backup, High Availability and Fallback on N+ 1 server.
- Intrusion detection, prevention and security preparation test
- Operation of help desk
- User acceptance testing with parallel run

12.1 Site Preparation Acceptance

Service Provider in the presence of SRRDA or the Nodal Agency accompanied by the PMU team shall perform the site acceptance testing to ensure that the Cloud and other locations which includes installation of Hardware, quality and completeness of Solution, Environment control etc. is in compliance with the specifications/ requirements of the project. Any deviations/gaps identified in the site preparation acceptance will have impact on the payments to be made to the SP.

12.2 Integration testing

After the entire development cycle is over, all the components have to be tested end to end; System Integrated Testing (SIT) would be done. Here SP has to demonstrate the system in a controlled production environment. The SP will carry out the Integration testing to ensure the integration of all the locations with the cloud server. The SP will submit the Test plan, Test cases & the Test Data prior to carrying out the Integration testing. The test plan will include the expected results. After the test, the SP will submit the Test Results which would be used to compare the actually observed

results recorded during the test against the expected results. The Observations/ Shortfalls/ Errors detected will be rectified by the SP within the specified period of time. The integration testing shall include testing of Network connectivity at all the locations and integration with the cloud. This phase will include at least the following activities:

- Test Planning
- Test Data Preparation – while SP can state the test data requirement, SRRDA will assist in defining the criteria for creation of dummy test data or actual data wherever possible.
- Integration Test Environment Setup in accordance with Technical Architecture Blueprint
- Integration testing (verification of features, inter-operability, application performance, conformance to Architecture Document, conformance to operations procedures & documentation). Architecture Document shall be prepared by SP and submitted to SRRDA for approval.
- Mock User Acceptance Test
- Mock Parallel Runs
- Problem Resolution

12.3 Functional Requirements Review

The IT solution developed by SP shall be reviewed and verified by SP in the presence of SRRDA or its representatives so as to match the Functional Requirements/ To-be Solution blueprint signed-off between the SRRDA and SP. Any gaps shall be addressed by SP immediately. One of the key inputs for this testing shall be the traceability matrix to be developed by the SP for the implementation of the project. Apart from Traceability Matrix, the SRRDA Nodal Agency and PMU team appointed by SRRDA may develop its own testing plans for validation of the compliance of the system against the defined requirements.

For conducting the User Acceptance Testing, SRRDA's domain experts team along with any other identified employees from respective divisions/units/verticals, who are responsible for day-to-day operations of the functions automated through this implementation, will validate the tests done by the SP. The system, during

the functional requirements review, shall necessarily satisfy the user acceptance testing process.

12.4 User Acceptance Test

For conducting the User Acceptance Testing, SRRDA's IT Core Team along with any other identified employees from respective divisions/units/verticals, shall be responsible for validating and reviewing the day-to-day testing of the functions automated through the IT solution. The system should necessarily satisfy the user acceptance testing process. The IT solution Implemented by SP shall be reviewed and verified, against the Functional & Technical Requirements signed-off between SRRDA and SP. Any gaps, identified as a severe or critical in nature, shall be addressed by SP I immediately prior to Go-live of the solution. One of the key inputs for this testing shall be the traceability matrix to be developed by the SP for IT solution. The traceability Matrix is a useful tool to determine if a test has been designed for every requirement. It documents the relationship between requirements and acceptance tests. Apart from Traceability Matrix, SP may develop its own testing plans for validation of compliance of system against the defined requirements.

12.5 Final Acceptance Testing

Pre- requisite of Final Acceptance shall have the following:

- Installation & commissioning of all hardware, software supplied under this RFP including customization & deployment of IT application, Helpdesk software, SMS Gateway etc.
- All documentation related to SRRDA and relevant acceptance test document (including IT Components, Non IT components).
- Installation and commissioning shall include:
- Installation and Commissioning of IT, Non – IT components
- For both IT & Non-IT equipment's software manuals / brochures / Data Sheets / CD / DVD / media are supplied to SRRDA
- All hardware and software items must be installed and commissioned on cloud as per the specification.

- Availability of all the defined services shall be verified and mutually agreed between SRRDA and the successful bidder
- The SP shall be required to demonstrate all the features / facilities / functionalities as mentioned in the RFP.

12.6 Performance Review

Performance is another key requirement for the Project and SRRDA or the Nodal Agency accompanied by the PMU team shall validate and review the performance of the deployed solution. Performance Review will be a regular activity conducted quarterly for the first year after Go-Live during the stabilization and subsequently half yearly for the balance support periods.

Ongoing Performance Review is to be done after Go-Live at the above mentioned periodic interval of time during the contract period or as decided by SRRDA. This review will be done against certain key parameters defined in SLA, to validate the compliance to all service conditions agreed. SRRDA or its representatives may carry out all the tests detailed in the acceptance test schedule to confirm that the performance of the different modules, subsystems, and entire installation satisfies the specified requirement of specifications including service performance

For SRRDA to validate the performance, the SP needs to demonstrate the tests and their results to SRRDA during the testing phase. Such parameters include request response time, work-flow processing time, concurrent sessions supported by the system etc.

The SP shall make available the software programs and testers required for carrying out the acceptance tests as per the schedule. Any additional test equipment deemed required during validation shall be arranged by the SP at no cost to SRRDA, so as to complete the validation as per the specified time schedule in this document. The SP shall indicate whether the software package includes programs for testing under full load conditions and overload conditions by creation of artificial data in consultation with SRRDA. Such test program shall be provided by the SP for the limited purpose of testing.

Any deficiency found during validation in performance of the system as per the requirement shall be rectified by the SP immediately at all

the locations. Any components or modules failing during the acceptance tests or requiring alterations necessary to meet Specification requirements shall be replaced at no extra cost to the Purchaser at site by the SP. These shall be done within two weeks of the initial reports.

12.7 Acceptance of Project Documentation

SRRDA's Nodal Agency along with the PMU team appointed by SRRDA, shall review the project documents developed by SP including requirements, design, installation, training and administration manuals, version control etc. Any issues/gaps identified in any of the above areas, shall be addressed to the complete satisfaction of SRRDA.

13. Appendix VI: Minimum Specifications

This sections details out the minimum technical specification of the hardware and software to be used in the project. The bidder needs to size the hardware & software accordingly to meet the service requirements of the project and should ensure to meet the minimum technical specifications as mentioned below. The bidder is free to provide any additional features or capabilities.

13.1. Specification of Vehicle Mounted Unit of Vehicle Tracking System (GPS)

Service Provider has to provide a device compliant with AIS 140 performance standards.

13.2. Mobile Application

1.	Shall be developed in an open platform
2.	Should be scalable and technically adaptable to future enhancements.
3.	Should be published and released in all the major platforms including iOS/Android/ windows etc.
4.	Should support Unicode and be multilingual in at least English, Hindi & Punjabi
5.	Should be easy to update as some data will be updated daily. Ability to collect data with high volume, velocity, and variety.
6.	Should provide accurate mapping and navigation services.
7.	Shall be SSL (Secured Socket Layer) compliant.
8.	Should adhere the best practices for localization of mobile web applications in Indian Languages released by Ministry of Electronics & Information Technology

Mobile Platform Requirement:

- iOS (Version 6 and Above): Portrait or landscape both iPhone (480 x 320), iPhone Retina (960 x 640), iPhone 5(1136 x 640), iPad (1024

x 768), iPad Retina (2048 x 1536) or Latest Support Resolution and Pixel Density as per latest technology.

- Android 4.1 and Above: Small (426dp x 320dp) Normal (470dp x 320dp) Large (640dp x 480dp) XLarge (960dp x 720dp) or As per industry need

13.3. Specification for Cloud Infrastructure

Bidder shall provision the best possible cloud storage infrastructure for seamless user experience in the State Data Center, Punjab.

13.4. Specification for Display Monitor

Sr. No.	Panel	Minimum Specifications
1	Screen Size	55 inch
2	Aspect Ratio	16:09
3	Native Resolution	1920 x 1080 (FHD)
4	Brightness	350 nit or Higher
5	Orientation	Landscape
	Connectivity	
6	Input	HDMI (2 Nos.), USB port
7	Output	External Speaker Out
8	External Control	RJ45, IR Receiver
9	BIS Compliant	The screen should be BIS compliant from day one. Should have UL/CB, FCC.

13.5. Specification for Personal Laptops

Sr. No	Minimum Specifications
1	Intel® Core™ i7 Processor with 2.4 Ghz
2	Latest Windows OS 64 bit

Sr. No	Minimum Specifications
3	16 GB RAM
4	13.3 inch Display with SVGA Port
5	1 TB SSD
6	1GB Network Interface Card
7	USB Port
8	HDMI Port
9	Option to add memory card
10	Sound and support multimedia with latest supported Wi-Fi card

13.6. Specification for Printer

Sr. No	Features	Minimum Specifications
1	Type	Black and White LaserJet
2	Print quality	True 600 x 600 dots per inch (dpi) for text and graphics
3	Resolution technology	FastRes (1200 dpi)
4	Language	Host-based
5	Print speed	Letter size - P1566: Up to 23 pages per minute (ppm) P1606dn: Up to 26 ppm. 12 pages per minute for A4 and letter-size paper. First page out in as low as 10 seconds
6	Duty cycle	3,000 single-sided pages per month (maximum) 1,000 single-sided pages per month (average)

Sr. No	Features	Minimum Specifications
7	Dimensions	Weight-minimum 5 kg,, Height-minimum 200mm , Depth-Minimum 280mm, Width-minimum 350mm
8	Connectivity	Hi-Speed 2.0 USB port and Network with Gb port
9	Cartridge	Black with Input and Output Tray(Paper, Envelopes, Transparencies)
10	Others	Should support all types of paper sizes, Envelopes, Post cards, Transparency films etc. Duplex printing (printing on both sides of paper) and Multiple pages printed on one page.

14. Appendix VII: Bill of Materials (Indicative)

The following list is minimum requirement, bidders are expected to propose the best possible BOM as part of overall solution for technical scoring.

Indicative Bill of Materials				
Sr. No.	Category	Component	Units	Minimum Quantity
1. Vehicle Tracking System				
1.1	Software	Vehicle Tracking system application (web portal + mobile application)	Nos	1
		VMS Application	Nos	1
1.2	Hardware	Vehicle Mounting Unit (GPS and other consumables)	Nos	10
1.3	Communication	GPRS SIM (including recurring data cost)	Nos	10
2. Reporting / Dashboard				
2.1.	Software	Report generation for various operations	Nos.	1
3. Command Control Centre				

Indicative Bill of Materials				
Sr. No.	Category	Component	Units	Minimum Quantity
3.1	Hardware	Display Monitor	Nos	3
3.2	Hardware	Video Wall Solution including controller, LAN wires, any other relevant consumables etc.as per RFP	Nos	1
4.	SRRDA Office			
4.1	Hardware	Laptop	Nos	4
4.2	Hardware	Printer (including all printing related consumables such as ink, papers etc.)	Nos	1
5.	Cloud Infrastructure	As per requirement.		
6.	Software License	License for Google Maps to show real time vehicle position		
7.	Training	As and when required in consultation with SRRDA		
8.	Others	Bidders are free to add items which are deemed required for the execution of the project.		

These figures provided in Bill of Material are **indicative**. The vehicle count mentioned above is only for construction of one roads. The same needs to be extrapolated based upon the number of projects simultaneously been taken up for the said duration.

Bidder is expected to perform an independent assessment of the infrastructure requirements for the proposed system and provide a detailed BOM for the proposed infrastructure in line with the requirements of the project and performance on service level agreements. Purchaser or authority designated by purchaser shall review and approve the BOM of the successful bidder at the time of implementation / deployment / commissioning.

The numbers specified may vary during the course of the project. Hence, supplier shall make his/her own independent assessment to meet the desired service levels as stated in the RFP.

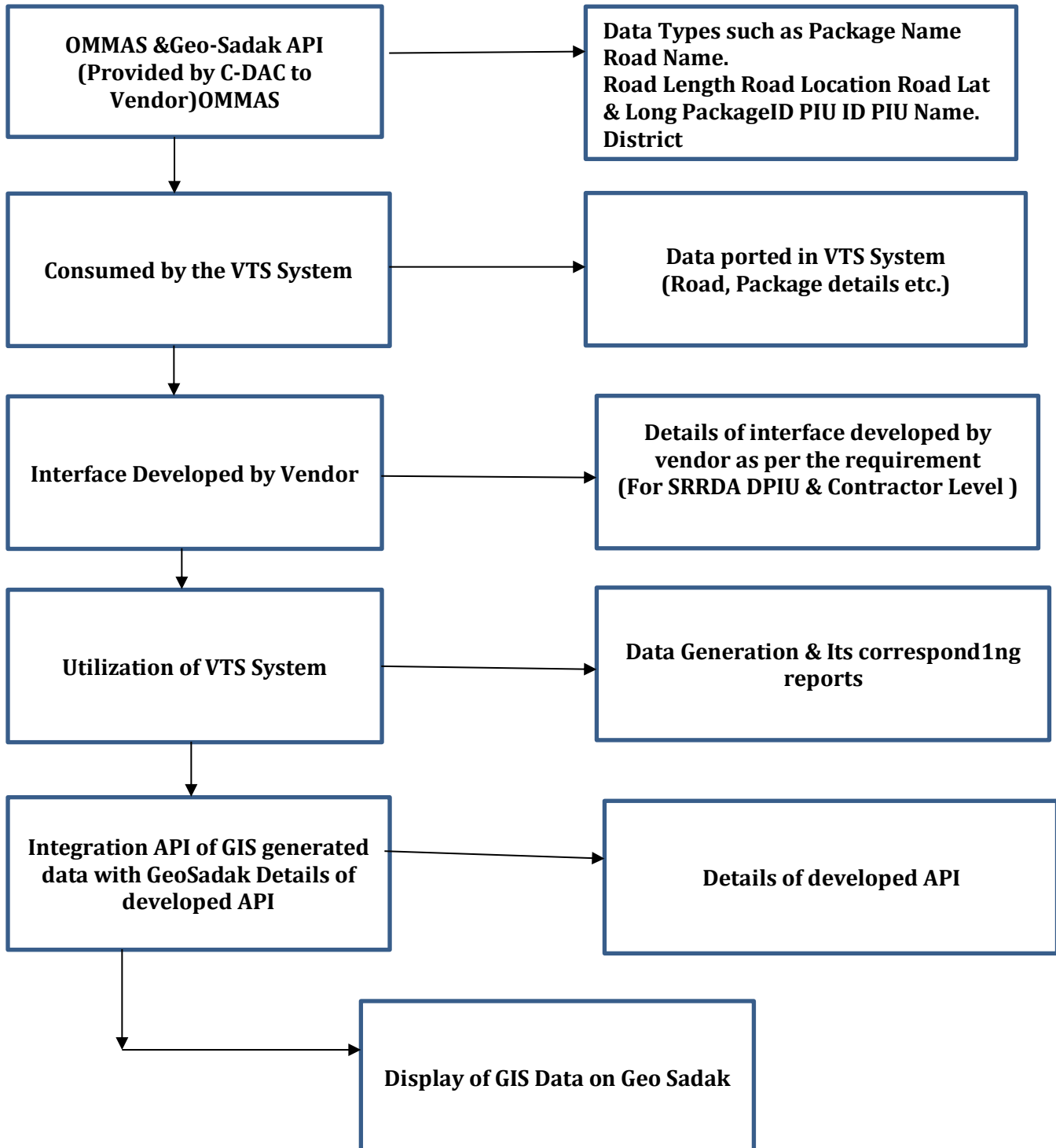
15. Appendix VIII: Standard Guidelines of GPS System as shared by NRIDA

Standard Guidelines for Vehicle Tracking System Requirement for PMGSY road construction

Objective: To provide a high-level design of VTS System to the vendor and other stakeholders

Overall Architecture :

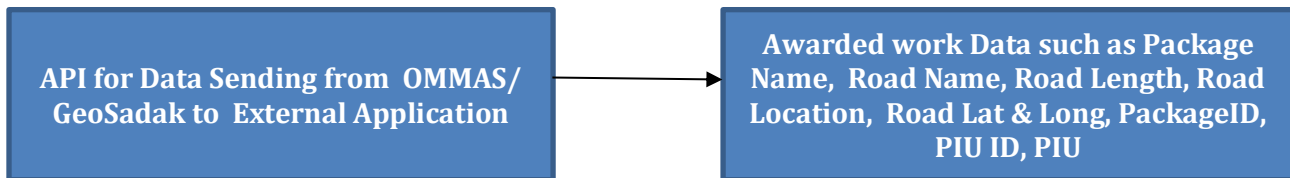
High Level Design of VTS System



GPS API

API allows other systems to automatically access various GPS-generated data from point A to point B. Such actions in their turn can easily be fed into the GPS tracking system which, among other features, offers the option of transmitting destinations and work orders to the navigation units used by drivers.

What data can be accessed via API?



Once details are received from Geo-Sadak/OMMAS thereafter Vendor can MAP all data in their System accordingly so that the devices which are embedded on the vehicle will start using the GPS System and will generate GPS data accordingly. Data will contain numbers of vehicle, vehicle id / GPS id distance, speed, stoppages, route playback, vehicle on the map, over speeding, geo fencing, ignition on/off, live status, location, total miles travelled etc.



After completion of capturing of Data, that data will be exported to Geo-SADAK through API and provided GPS File should be in GPX format (preferably) and other supported format, later on it will be live to be viewed. This data will be shown on Geo SADAK Visualization tool along with drillable report generation option for each road and block.

The data format for pushing data to GEOSADAK should be sought from NRIDA at the time of implementation

A difference in proposed alignment and constructed alignment should be flagged and provision to finalised the same as built alignment should be provided to state as same way as proposals being finalised.

This data will be shown to states through their respective logins, also this data available at NRIDA logins therefore NRIDA can view this data at any point of time. For NRIDA level data should be viewable at State Level, District Level, Block Level. VTS vendor will provide the visualization of vehicles at different login level such as SRRDA login will show all the active GPS devices within the state, DPIU Level it will provide the visualization of vehicles at district level works and contractor level login will provide the visualization of vehicles which are working at their level.

Further, once data is ported at GcoSadak, through NRIDA level officials can view the VTS data layer in visualization at PAN India level.

Pull API (Data From GEOSADAK)

The following data will be made available to the VTS from GEOSADAK:

1. Work ID
2. Work Name
3. District ID, Name
4. Block ID, Name
5. PIU ID, Name
6. Date of Sanction
7. Contractor Name
8. Contractor ID

It will include all awarded works for the state; this list will get updated from time to time and the VTS provider has to ensure they fetch the data and make it available in VTS for the registration etc. process. The VTS provider should request the details for the API endpoint from SRRDA/NRIDA once onboarded.

Push Data (Sending Data to GEOSADAK/OMMAS)

The following data elements need to be stored by VTS System later on these data will be migrated through API from VTS System to Geo-Sadak, therefore it is requested to kindly direct your empaneled vendor to store these data items mentioned below:

1. Data Elements

GPS stores below data elements:

- User data
- Vehicle data
- Contractor data
- Location data
- Geofence data
- Notification data
- Reporting data
- Work Data

2. User data

User data are stored in confidential manner and can be exposed via secured APIs if required.

Data Element	Description
First Name	First name of the user
Last Name	Last name of the user
Mobile No.1	First mobile number of the user
Mobile No.2	Second mobile number of the user
User Id	User ID of the user
Email	Email of the user
DPIU Address	Address of the user
District_ID	As received from OMMAS/GEOSADAK
Block D	As received from OMMAS/GEOSADAK
PIU_ID	As received from OMMAS/GEOSADAK

3. Vehicle data

Vehicle data are stored in confidential manner and can be exposed via secured APIs if required.

Data Element	Description
IMEI	IMEI of the device
Vehicle Number	Vehicle number of the vehicle
Sim Number	Mobile number of the sim installed in the device
Vehicle Type	Vehicle Type Vehicle type of the vehicle
Installed By	Installed by details
Model	Model of device installed in the vehicle
Speed Limit	Speed limit for the vehicle
Installed Date	Installation date of the device

4. Contractor data

Driver data are stored in confidential manner and can be exposed via secured APIs if required.

Data Element	Description
Contractor Name	Name
Mobile Number	Mobile number
Address	Contact Details
Contractor_ID	As received from GEOSADAK/OMMAS during registration of the work

5. Location data (Track)

Location data (array, GPX) are stored in confidential manner and can be exposed via secured APIs if required.

Data Element	Description
IMEI	IMEI of the device
Track Date	Time Date time of the GPS location received from the device
Latitude	Latitude of the GPS location
Longitude	Longitude of the GPS location
Altitude	Altitude of the GPS location
Satellite	Number of satellite data received from the device in GPS location data
Speed	Speed of the vehicle
Direct	Direction of the vehicle
Ignition	Stores ignition status information
Digital Input 1	Stores digital input 1.(Battery Status) Battery External or Internal of Vehicle
Digital Input 2	Stores digital input 2. Low Battery etc.
Analog Input 1	Stores analog input 1.(Battery Voltage)
Analog Input 2	Stores analog input 2.(Signal Strength) etc.
Inserted Date	Date time of the record insertion.

6. Notification data

Notification data are stored in confidential manner and can be exposed via secured APIs if required.

Data Element	Description
Alert Type	Alert type such as ignition, ac, speed, geo fence, disconnection
Latitude	Latitude of the GPS location
Longitude	Longitude of the GPS location
Track Date Time	Date time of the GPS location
Inserted Date Time	Date time of the record insertion
Speed	Speed of the GPS location

7. Reporting data

Reporting data are stored in a confidential manner and can be exposed via secured APIs if required. Reporting data are available for the below reports:

- Stoppage Report
- Idle Report
- Travel Report
- Trip Details Report
- Vehicle Summary Report
- Over speed Report
- Geo Fence Alert Report
- Tempering Report

8. **Reference Range** -The PIU has to fixup standard reference range for particular chainage.
Example - In case of Bitumen how many cycle of the Road roller needs to complete.
9. Each work in OMMAS has a unique work_id which the VTS system will fetch from GEoSADAK in beginning. The work id is how the data should be returned back to GEoSADAK as well.