RAILTEL CORPORATION OF INDIA LIMITED

(A Govt. of India Undertaking)

Registered & Corporate Office:

Plate-A, 6th Floor, Office Tower-2,
NBCC Building, East Kidwai Nagar, New Delhi-110023

Selection of Partner For

"Development and Implementation of Signalling Maintenance Management System Application (Mobile & Web) over Indian Railways"

EOI No: RCIL/EOI/CO/ITP/2021-22/SMMS/09 dated 01.11.2021

NOTICE

RailTel Corporation of India Limited Plate-A, 6th Floor, Office Tower-2,
NBCC Building, East Kidwai Nagar, New Delhi-110023

EOI No: **RCIL/EOI/CO/ITP/2021-22/SMMS/09** **Dated 01.11.2021**

RailTel Corporation of India Ltd., (here after referred to as RailTel) invites EOIs from RailTel's Empaneled Partners for the selection of suitable agency for "Development and Implementation of Signalling Maintenance Management System Application (Mobile & Web) over Indian Railways".

The details are as under:

1	Last date for submission of EOIs by bidders	11.11.2021 before15:00Hrs.
2	Opening of bidder EOIs	11.11.2021 at 15:30Hrs.
3	Earnest Money Deposit (EMD)	Bid Security Declaration
4	Number of copies to be submitted for scope of work	01 in Hard Copy

Prospective bidders are required to direct all communications related to this Invitation for EoI document, through the following Nominated Point of Contact persons:

Contact: Naresh Kumar
Position: DGM/IT
Email: naresh.kumar@railtelindia.com
Telephone: +91124 2714000 Ext 2222

NOTE:

I. **All firms are required to submit hard copy of their EOI submissions, duly signed by Authorized Signatories having Power of Attorney with Company seal and stamp.**

II. **The EOI response is invited from empaneled partners of RailTel. Only RailTel empaneled partners are eligible for participation in EOI process.**

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1. RailTel Corporation of India Limited–Introduction

RailTel Corporation of India Limited (RCIL), an ISO-9001:2000 organization is a Government of India undertaking under the Ministry of Railways. The Corporation was formed in Sept 2000 with the objectives to create nationwide Broadband Telecom and Multimedia Network in all parts of the country, to modernize Train Control Operation and Safety System of Indian Railways and to contribute to realization of goals and objective of national telecom policy 1999. RailTel is a wholly owned subsidiary of Indian Railways.

For ensuring efficient administration across India, country has been divided into four regions namely, Eastern, Northern, Southern & Western each headed by Regional General Managers and Headquartered at Kolkata, New Delhi, Secunderabad & Mumbai respectively. These regions are further divided into territories for efficient working. RailTel has territorial offices at Guwahati, & Bhubaneswar in East, Chandigarh, Jaipur, Lucknow in North, Chennai & Bangalore in South, Bhopal, and Pune & Ahmedabad in West. Various other territorial offices across the country are proposed to be created shortly.

RailTel's business service lines can be categorized into three heads namely B2G/B2B (Business to Government and Business to Business) and B2C (Business to customers):

Licenses & Services

Presently, RailTel holds IP-1, NLD and ISP (Class-A) licenses under which the following services are being offered to various customers:

CARRIER SERVICES

1. National Long Distance: Carriage of Inter & Intra -circle Voice Traffic across India using state of the art NGN based network through its Interconnection with all leading Telecom Operators
2. Lease Line Services: Available for granularities from E1, DS-3, STM-1 & above
3. Dark Fiber/Lambda: Leasing to MSOs/Telco's along secured Right of Way of Railway tracks
4. Co-location Services: Leasing of Space and 1000+ Towers for collocation of MSC/BSC/BTS of Telco's

ENTERPRISE SERVICES

1. Managed Lease Line Services: Available for granularities from E1, DS-3, STM-1 & above
2. MPLS VPN: Layer-2 & Layer-3 VPN available for granularities from 64 Kbps to nx64 Kbps, 2 Mbps& above
3. Dedicated Internet Bandwidth: Experience the "Always ON" internet connectivity at your fingertips in granularities 2mbps to 155mbps

RETAIL SERVICES

RailWire: RailWire is the retail broadband service of RailTel. RailWire is a collaborative public private local entrepreneur (PPLE) model providing broadband services by leveraging the eco system available with different partners like RailTel, Access Network Provider, Aggregation Network Provider (AGNP) and Managed Service Provider (MSP) to offer high speed & cost-effective broadband to end customers. The model uses RailTel's nationwide Core fiber Backbone Network, Access Network available with Local entrepreneurs, FTTH Infrastructure providers etc. and Managed Service Partners/Application Service Providers having IT & management capabilities. The model has been tested for several years now with about 4 lakh+ home broadband users along with 5200+ local access network partners. It is noteworthy that this approach whereby about 54% of the revenue is ploughed back into the local community not only serves the underserved but also creates livelihoods and jobs in the local communities.

2. Objective of EOI

2.1 RCIL is implementing IT-ICT projects like providing Infra & Cloud Services, Application Development, HMIS/E-Office Implementation and Consultancy Services for Indian Railways (IR) and its customers. In its strive for continuous improvement, Indian Railway has been taking various initiatives by the way of introduction of new technology, extensive use of IT systems, optimum utilization of manpower etc. IR believes that first step to achieve efficiency is to measure and then control. In this regard, Indian Railways wishes to implement IT applications for asset, inspection and maintenance management etc. of Signaling department of Indian railways namely Signalling Maintenance Management System (SMMS).

2.2 The SMMS work had been initiated by CRIS and have progress to some extent where they had designed and developed various software modules against the scope of SMMS. Now the said work has been transferred to RailTel (RCIL) for completing entire SMMS development and implementation for 5 divisions of Indian Railways.

RCIL will finalize software development partner through this EOI who have experienced in similar nature of work for designing, developing and implementation SMMS solution for Indian Railways.

Selected partner will be responsible for development of SMMS Application (Web and Mobile), successful implementation, training and support over all sections of five division of Indian Railways namely **Ambala & Moradabad (NR), Kota (WCR), Hyderabad (SCR), Sealdah (ER)**.

2.3 The main objective of SMMS is to do following major functions:

i) To digitize all the S&T Gears and stored it in centralized location.
ii) Field Maintenance and Inspection with the help of hand held/ mobile device.

iii) Capturing of equipment readings by the field staff through handheld devices in online or offline mode and later uploading the data automatically to central location.
iv) Capture geotagged data at the point of origin for future correlation.
v) Asset Register and codal life management.
vi) Inspection schedule and overdue notification to ESM/SSE/JE over mobile application.
vii) Signal Failure register (SFR).
viii) Provide online availability of information regarding day-to-day activities at Station, Divisional, Zonal and Railway Board level;
ix) Provide access to the application through browsing anywhere in the network with three tier architecture;
x) Integration with dataloggers, condition monitoring system to generate failure alarms, generate customized reports, simulation of yard layouts both offline and online.
xi) Provide GIS links to the details of assets from the signaling plan
xii) PCDO
xiii) Asset Utilization and Valuation
xiv) Customized Management Reports
xv) Replacement management of S&T gears
xvi) Any other function advised by Railways in respect of SMMS Scope.

3. Broad Scope of Work

3.1 Indian Railways has introduced the Signalling Maintenance Management System (SMMS) to digitize all the S&T Gears and its maintenance schedule. The project is envisioned to capture all Signalling asset data and their periodic maintenance. The scope also includes inspection, PCDO and signal asset failures etc. Initially the project covers five division of Indian Railways namely Ambala & Moradabad (NR), Kota (WCR), Hyderabad (SCR), Sealdah (ER).

The application will analyse the data and present MIS reports for short term and long-term decision making. The application provides automatic sending of SMS/ email/notification for various faults, deficiencies, overaged gears, overdue maintenance etc.

3.2 CRIS have developed and deployed to some extent of original scope of work. Now, the work has been transferred to RailTel to develop, implement and maintain Indian Railway Signalling maintenance management system.

3.3 Initially, only Web Application was developed by CRIS. However, in proposed scope of work, development of Mobile Application, API Gateways and Survey Mobile application for Geotagged Asset Survey Module are also included.

In addition to Web Application, mobile application shall be developed and made available to field maintainer/ staff for capturing geotagged field data during inspection, maintenance, monitoring and management of maintenance schedule.

The important aspect of SMMS project is to capture field asset data along with Geotagged location for managing maintenance seamlessly. The mobile application

platform shall be developed to capture various data format from field. The form generation shall be dynamic so that based on field requirement the field of the forms can be modified without changing source code.

API gateway shall also be developed for interfacing third party application like IoT based system, GIS system etc. to enhance signaling maintenance regime.

3.4 The major scope of work for implementation of SMMS is as below:

i) Migration, Porting, Re-Installation and configuration of Existing SMMS solution (developed by CRIS) at RailTel Data Centre

ii) Redesign (application and database), migration from commercial database to open-source database (as per GoI guideline), bug fixing and solution requirement finalization based on existing architecture and modules developed by CRIS

iii) Software design and development of SMMS application (Web & Mobile) as per technical requirement mentioned in this EOI document and as per latest Indian Railway Signal Engineering Manual (SEM) released by Railway board.

iv) Installation, Testing, Deployment and implementation of SMMS Application on RailTel Cloud to go live for five division of Indian Railways namely Ambala & Moradabad (NR), Kota (WCR), Hyderabad (SCR), Sealdah (ER). Later on, the new divisions as per the requirement of Railways will be added in this application. Though, design of application should be for PAN India.

v) Survey of one complete station per division and digitization of Survey record in Asset Management Module further implementation of SMMS Application.

vi) Training to RCIL and Railway users for operation and maintenance of SMMS

vii) Support and Maintenance of application.

viii) Manpower deployment to support queries from field users.

ix) Acceptance of developed Module shall be verified with Railway Authorities in co-ordination with the RailTel.

3.5 **Important Points**

i) Application shall be in both English and Hindi language as per the requirement of Indian Railways.

ii) Auditing/testing of SMMS Application from STQC will be responsibility of successful bidder/Partner with no extra cost to RailTel.

iii) Source Code will be the Property of RailTel only. Software Partner will not be able to use Source Code for other purpose. During contract completion/termination, Partner will help RailTel during hand over the Source Code to the new Partner/RailTel/Railway, if required.

iv) RailTel may ask for the development of similar Application for internal purpose and external customer against separate commercials like Variation, Rate Contract etc.

3.6 **Details of Existing SMMS Application developed by CRIS and Detailed Technical Requirements of SMMS Application are given in Para 21 and 22 of EOI.**

4. Language of Proposals

The proposal and all correspondence and documents shall be written in English. The hardcopy version will be considered as the official proposal.

5. Proposal Preparation and Submission

The Applicant is responsible for all costs incurred in connection with participation in this EOI process, including, but not limited to, cost incurred in conduct of informative and other diligence activities, participation in meetings/ discussions/presentations, preparation of proposal, in providing any additional information required by RCIL to facilitate the evaluation process or all such activities related to the EOI response process. RCIL will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

6. Bidding Document

The bidder is expected to examine all instructions, forms, terms and conditions and technical specifications in the bidding documents. Submission of bids, not substantially responsive to the bidding document in every aspect will be at the bidder's risk and may result in rejection of its bid without any further reference to the bidder.

All pages of the documents shall be signed in ink by the bidder including the closing page in token of his having studied the EOI document and should be submitted along with the bid.

7. Qualification for Participation

7.1 The Bidder should be an empanelled RailTel partner having a valid Permanent Account Number (PAN), Goods and Service Tax Identification Number (GSTIN). Copy of documents in this regard are to be submitted. Bidder should also submit copy of RailTel's Empanelment Letter and valid PBG submitted to RailTel for empanelment purpose. PBG copy is not required to be submitted in case of PBG exemption under empanelment process. BG should be valid as on bidding date.

7.2 Bidder should have cumulative turnover of minimum INR 3.75 crores in last three financial years 2020-21, 2019-20 and 2018- 19. CA certificate or Audited Financial Statement in this regard is required to be submitted.

7.3 The Bidder should not be black listed during last three years by any State / Central Government / PSU / Autonomous Body as on the last date of EOI submission. A Self- Declaration on letter head is to be submitted in this regard.

7.4 There should not be any ongoing or past, arbitration case(s) between RCIL and Applicant on the last date of submission of EOI. Self-Declaration on letter head is to be submitted in this regard.

7.5 The Bidder should have experience of development of similar IT application (Mobile/Web) for Indian Railways or other Government departments. Copies of Work Order/Certificate to be provided for the same. Joint ventures and consortiums are not allowed.

8. Evaluation criteria

The Applicant should have relevant experience and proven application platform as per the requirement of EOI. The applicant may have to demonstrate similar IT application developed for Railway/Government Customers within 2 weeks of submission of EOI or on a pre-appointed date by RCIL, if asked by RCIL. The demonstration shall be conducted by RCIL experts to adjudge readiness of expertise for developing the application as per EOI.

Only technical qualified bidder will be eligible for opening the financial bid. Based on the lowest price offered under financial bid as mention under clause no. 29 by the technical eligible bidder, L1 will be selected. If required, the L1 bidder may be called for negotiation. A Tender Committee would be carrying out the evaluations. RCIL shall evaluate the responses to this EOI and scrutinize the supporting documents / documentary evidence / technical compliance. Inability to submit the requisite supporting documents / documentary evidence/ technical compliance, may lead to rejection. The decision of RCIL in the evaluation of EOI responses shall be final. During the EOI response evaluation, RCIL reserves the right to reject any or all the EOI responses.

9. Bidding Process

The bidder needs to submit the bid in sealed, signed and stamped envelope clearly mentioning of EOI number, EOI name, addressed to the EOI inviting officer as well as Bidding Agency Name and Contact person.

Packet I - Technical BID should consist the following:

1. Covering Letter
2. Notarized Power of Attorney in the name of Company Representative
3. Self-Declaration of Non-Blacklisting as per Clause 7.2
4. Self-Declaration of No past / ongoing arbitration with RCIL as per Clause 7.3
5. Format for Providing Bidder's Information – Clause 20.
6. Documents / Certificates related to Experience as per Clause 7.4
7. Signed and Stamped EOI Document
8. RailTel's Empanelment letter, PBG copy, GST and PAN documents
9. Bid Security Declaration
10. Technical Solution
11. Any other relevant documents

Packet II - Financial BID given in Annexure "A" – Clause 29

1. Submission of Financial BID as per given format.

Note: Both the Packets i.e. Packet – I and Packet – II should be separately put in a common Envelope. The envelope also needs to be sealed, signed and stamped clearly mentioning of EOI number, EOI name, addressed to the EOI inviting officer as well as Bidding Agency Name and Contact person.

10. Period of Validity of bids and Bid Currency

Bids shall remain valid for a period of 180 days from the date of issue of LOI by RCIL Customer. The prices in the bid document to be expressed in INR only.

11. RCIL's Right to Accept/Reject Bids

RCIL reserves the right to accept or reject any bid and annul the bidding process or even reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or without any obligation to inform the affected bidder or bidders about the grounds for RailTel's action.

12. Bid Security Declaration

In lieu of Bid Security/Earnest Money Deposit (EMD) bidder may submit "Bid Security Declaration" in the format given as **Form-2** accepting that if they withdraw or modify their bids during period of validity etc., they will be banned for the period of Three years.

Bid without Bid Security Declaration letter & cost of tender document will be summarily rejected.

13. Security Deposit / Performance Bank Guarantee (PBG)

13.1. Successful bidder has to furnish security deposit in the form of Performance Bank guarantee @ 3 % of issued PO/ LOA value, the same should be submitted within 30 days of issue of LOA/PO, failing which a penal interest of 15% per annum shall be charged for the delay period i.e. beyond 30 (thirty) days from the date of issue of LOA/PO. This PBG should be from a Scheduled Bank and should cover warranty period plus three months for lodging the claim. The performance Bank Guarantee will be discharged by the Purchaser after completion of the supplier's performance obligations including any warranty obligations under the contract.

13.2. The Performa for PBG is given in Form No. 1. If the delivery period gets extended, the PBG should also be extended appropriately.

13.3. The security deposit/PBG shall be submitted to Corporate Office & will bear no interest.

13.4. A separate advice of the BG will invariably be sent by the BG issuing bank to the RailTel's Bank through SFMS and only after this the BG will become acceptable to RailTel. It is therefore in interest of bidder to obtain RailTel's Bank IFSC code, its branch and address and advise these particulars to the BG Issuing bank and request them to send advice of BG through SFMS to the RailTel's Bank.

13.5. The security deposit/Performance Bank Guarantee shall be released after successful completion of Contract, duly adjusting any dues recoverable from the successful tenderer. Security Deposit in the form of DD/Pay Order should be submitted in the favour of "RailTel Corporation of India Limited" payable at New Delhi Only.

13.6. Any performance security upto a value of Rs. 5 Lakhs is to be submitted through DD/Pay order / online transfer only.

13.7. **In case bidder doesn't meet timelines as per EOI, their PBG will be forfeited and bidder will be blacklisted by RailTel for atleast 3 years.**

14. Deadline for Submission of Bids

Bids must be submitted to RCIL at the address specified in the EOI document not later than the specified date and time mentioned. If the specified date of submission of bids being declared a holiday for RCIL, the bids will be received up to the specified time in the next working day.

15. Late Bids

Any bid received by RCIL after the deadline for submission of bids will be rejected and/or returned unopened to the bidder.

16. Modification and/or Withdrawal of Bids

Bids once submitted will treated as final and no modification will be permitted. No correspondence in this regard will be entertained. No bidder shall be allowed to withdraw the bid after the deadline for submission of bids. In case of the successful bidder, he will not be allowed to withdraw or back out from the bid commitments. The bid earnest money in such eventuality shall be forfeited and all interests/claims of such bidder shall be deemed as foreclosed.

17. Details of Financial bid

17.1 The financial bid should clearly bring out the cost of the work with detailed break-up of taxes.

17.2 The financial bid must be submitted as per Proforma under clause No. 29 "Annexure A – Cover Letter and Schedule of Rates"

18. Clarification of Bids

To assist in the examination, evaluation and comparison of bids the purchaser may,

at its discretion, ask the bidder for clarification. The response should be in writing and no change in the price or substance of the bid shall be sought, offered or permitted.

19. Variation in Contract

+/-25% variation may be operated on SOR during the period of Project Schedule with the approval of competent authority with similar terms and procedure as specified in the agreement.

20. Rate Contract

Apart from above scope of EOI, RailTel or its subsidiary company REL may have requirement of technical-functional resources for its own internal requirement or for customer project requirement. Hence during the contract period and as per RailTel requirement, the bidder shall be able to provided additional technical-functional resources at same rate (breakup rates under SOR) for which RailTel will issue LOA to successful bidder. This should not be treated as variation clause. The tentative number of resources/man-month which may be required by RailTel would be maximum 50% of the numbers quoted in Schedule of Rates. Separate LOA will be issued in case of requirement and with same terms & conditions of this Tender.

21. Bidder's Information

Company Name:	
Type of RCIL Business Partner	
Status of Applicant (Partnership, Company etc.)	
Number of Years of Experience	
Number of office locations in India (Provide	
Number of office locations globally (Provide	
Number of employees in India and global	
Total revenue from sales in India (for last 3 financial years)	FY (2018-19):
	FY (2019-20):
	FY (2020-21):

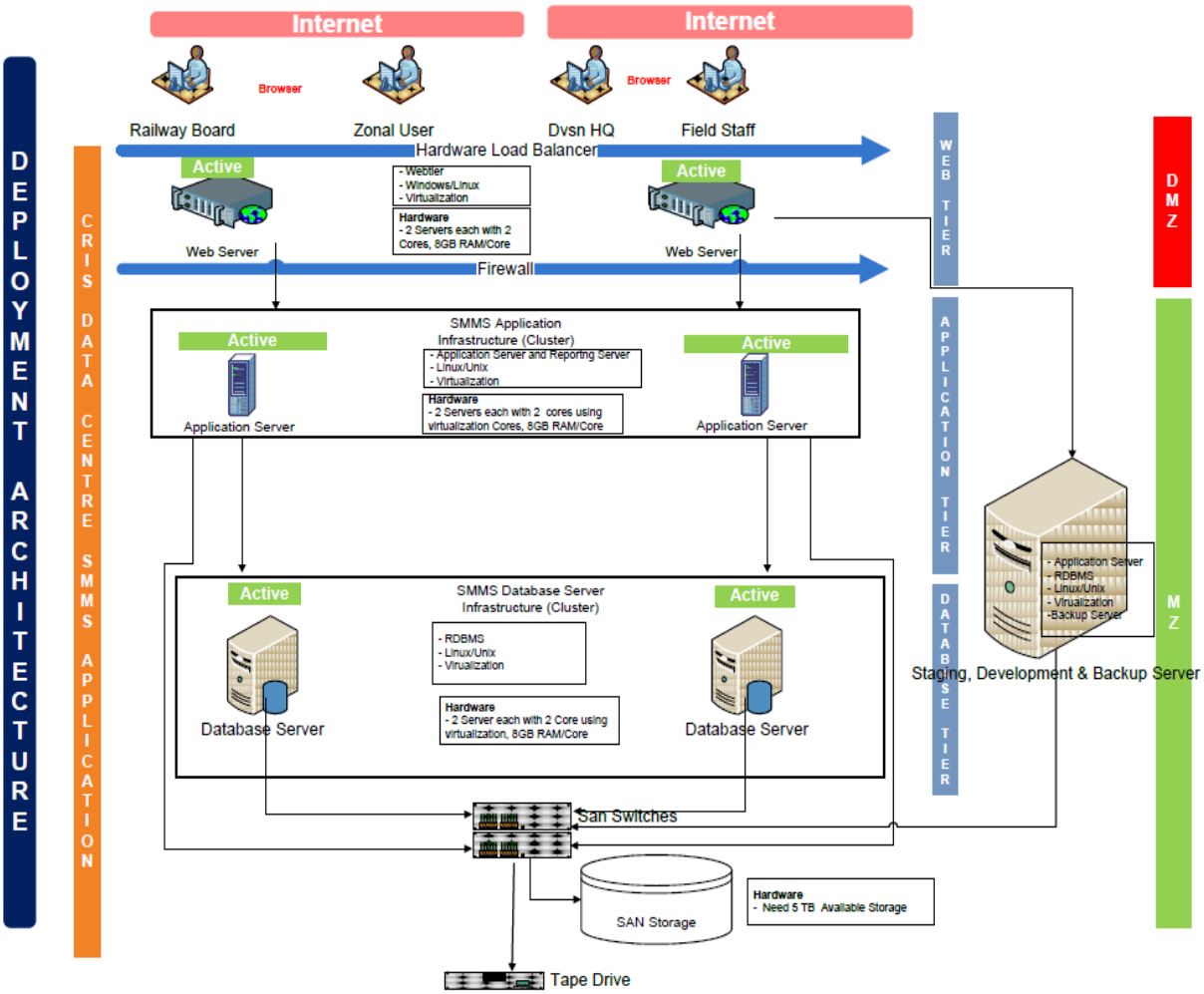
CONTACT DETAILS:			
First Name		Last Name	
Designation			
Address for correspondence			

Contact Number (Office Landline)	
Mobile Number	
Official Email ID	
GSTN No	
PAN No	
Bank Account No	
IFSC Code	
Registered Address of Company	

22. Details of Existing SMMS Application developed by CRIS

22.1 CRIS System Architecture

Signalling Maintenance Management System (SMMS) is an enterprise grade application developed on Oracle Enterprise Database 12c with WebLogic 12c Application Deployment Server. This project is envisaged to capture all signaling asset data and their periodic maintenance. The system architecture of SMMS followed by CRIS is as under:



As depicted in the above diagram, there are many Physical & Virtual Servers/ Partitions in existence at CRIS-Central DC, like the HTTP, Application, Data Base, Backup and Staging (Development) Servers. The Storage components are SAN-Switches, SAN Storage, Tape-Library etc. To meet User loads based on scale of Users, the application has been deployed as shown in the above architectural diagram.

22.2 CRIS Work Status

In initial phase, CRIS has started development of SMMS web application. The summary of modules & sub modules with category indicating status of the work are as under:

SN	Module Name	Nominated Railway	Status
A	**Asset & Maintenance Modules**		
1	Electrically Operated Point	NR	Development Completed & Rolled Out
2	DCTC	NR	Development Completed & Rolled Out
3	LED Main Signal	NR	Development Completed & Rolled Out
4	LED Shunt	NR	Development Completed & Rolled Out

SN	Module Name	Nominated Railway	Status
5	LED Route Indicator	NR	Development Completed & Rolled Out
6	LED Calling On	NR	Development Completed & Rolled Out
7	Battery Charger & Battery	NR	Development Completed & Rolled Out
8	Lifting Barrier Maintenance (Electrical LC)	NR	Development Completed & Rolled Out
9	Lifting Barrier Maintenance (Mechanical LC)	NR	Development Completed & Rolled Out
10	Location Box	WCR	Development Completed & Rolled Out
11	Point Detector (Electrical)	NR	Development Completed & Rolled Out
12	IRJ	WCR	Development Completed & Rolled Out
13	Glued Joint Testing	WCR	Development Completed & Rolled Out
14	IPS	WCR	Development Completed & Rolled Out
15	Siemens (AFTC)	NR	Requirement received. Formats for development prepared and draft shared with NR.
16	Bombardier (AFTC)	NR	Requirement received. Formats for development prepared and draft shared with NR.
17	Ansaldo (AFTC)	NR	Requirement received. Formats for development prepared and draft shared with NR.
18	UAC	SCR	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
19	Eldyne (SSDAC)	ER	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
20	CEL (SSDAC)	ER	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
21	G.G. TRONICS (SSDAC)	ER	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
22	MEDHA (SSDAC)	ER	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
23	Eldyne (MSDAC)	ER	User Requirement (asset & maintenance formats) received

SN	Module Name	Nominated Railway	Status
24	CEL (MSDAC)	ER	User Requirement (asset & maintenance formats) received
25	SIEMENS (MSDAC)	ER	User Requirement (asset & maintenance formats) received
26	FRAUSHER (MSDAC)	ER	User Requirement (asset & maintenance formats) received
27	SGE (Block Instruments)	SCR	Development Completed & testing done by NR
28	Push Button (Block Instruments)	SCR	Development Completed & testing done by NR
29	Neales Token (Block Instruments)	SCR	Development Completed & testing done by NR
30	Daido Token (Block Instruments)	SCR	Development Completed & testing done by NR
31	BPAC with UAC	NR	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
32	BPAC with UFSBI	ER	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
33	Ansaldo (Electronic Interlocking)	WCR	Development of Asset &Maintenance formats completed, to be offered for testing with remaining EI modules
34	Medha (Electronic Interlocking)	WCR	User Requirement (Asset and maintenance formats) received, Requirement analysis completed (formats for development) and development to be started
35	Kyosan (Electronic Interlocking)	WCR	User Requirement (Asset and maintenance formats) received, Requirement analysis completed (formats for development) and development to be started
36	Westrace (Electronic Interlocking)	WCR	Development of Asset & Maintenance formats completed, to be offered for testing with remaining EI modules
37	Earth Testing Record	WCR	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
38	Cabin/Relay Room /Relay hut	WCR	Development of Asset & Maintenance formats completed and offered for testing to Northern Railway.
39	Operating cum indication Panel	WCR	Development of Asset & Maintenance formats completed and offered for testing to Northern Railway.

SN	Module Name	Nominated Railway	Status
40	Solar Panel	SCR	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
41	DG Set	SCR	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
42	Selection Circuit Testing	SCR	User Requirement received
43	Cable Testing Summary	All CSEs	Development of Asset & Maintenance formats completed and offered for testing to Northern Railway.
44	Key Transmitter Maintenance	SCR	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
45	Data Logger	ER	Requirement received
46	Power Panel	ER	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
47	ELD	WCR	Development of Asset & Maintenance formats completed and offered for verification of developed format to Nominated Railway.
B	**Inspection Module**		
i	Inspection Module	NR	Development completed and offered for testing to NR.
C	**PCDO**		
i	PCDO	Railway Board	User requirements of 97 Annexures received instead of initial plan of 30 annexures (approx.). User requirement to be reviewed with Railway Board.
D	**Signal Failure Module (Test Room Position)**		
i	Signal failure Module	NR	Part user requirement received, cause of failures and reporting formats yet to be received from Rly
E	**MIS REPORTS**		
i.	Detailed Asset Report, Daily Maintenance asset report, Actionable event report		Reports have been developed and rolled out along with the rollout of concerned Asset
ii	Zone & Division wise pending issues		Exceptional reports viz. parameter out of range & Maintenance overdue have been rolled out for the concerned rolled out assets.

SN	Module Name	Nominated Railway	Status
iii.	Miscellaneous reports		Dash Board& Consolidated report have been developed and rolled out for the concerned rolled out assets.
iv	Inspection report & compliance to inspection report		Maintenance overdue report has been rolled out for the concerned rolled out assets.
v	DASHBOARD		Dash Board (at a glance view in graphical & tabular format which consist of Maintenance Overdue, Gears with deficiencies/out of range measurements, Codal life expiry, Asset register, Map View (Station Master). Developed and deployed on production the concerned rolled out assets.
F	**Periodic SMS & email Notification**		
i.	SMS & email notification on asset entry & maintenance entry		Development completed and rolled out along with the concerned rollout modules. However, revised requirement has been received.
ii.	Notification/ reminder for out-of-range parameters, Maintenance overdue schedules		Development completed and rolled out for first LED Signal, Electrically Optd. Point, DCTC, IPS & Battery set/Charger module. Later, this module was restricted and now, revised requirements have been received.
G	**User Authorization/ access allotment (Security Administrator) for each division**		
i.	Post Creation, User ID/ Password creation, change reporting officer, Master Data Entry (Station, Section, division, zone etc.), Signalling gear allotment etc.		Development completed and rolled out.
H	**SMMS Login Module**		
i	SMMS Login Module		Development completed and rolled out.

23. Detailed Technical Specifications Requirement

23.1 Signaling Maintenance Management System (SMMS) – System Architecture:

System Architecture of SMMS will be as per the technical requirement mentioned in this EOI. Further SMMS application will be developed and hosted on Cloud Infra at RailTel Data Centre.

RailTel further intend to use Open-Source Database (as per GoI guideline) for the SMMS Application.

23.2 Application Architecture Requirement:

Overall SMMS system shall be designed by keeping in mind scalability, modularity and performance. The application architecture ensures that it can scale as the railway demands, meeting the intended business and user requirements while ensuring that all the concepts are correctly isolated among each other.

The objective to build a scalable and reliable application architecture on strongly defined tenets and well-established foundations. This way, it can support rapid growth and massive scalability, while avoiding deployment issues, code maintenance complexities, and change request issues. Microservices based design pattern shall be used.

It is preferable to adopt Clean Architecture for solution. Clean Architecture is the most suitable and now a days being de-facto for application development where scaling, stability and integrity is important. Since the business logic is separated into independent use cases, the solution gets edge on cohesion and decoupling.

23.3 Hardware Requirement

It shall be cloud based solution. As per the application requirement the hardware infrastructure shall be provided by RCIL for Development, Testing and Production. The bidder shall propose hardware requirement along with technical proposal.

23.4 Functional Requirement Specification – Web Based SMMS Application

The SMMS-Project shall be designed to meet the information needs of Field Supervisors and their officers at Station, Divisional HQ, Zonal HQ and Railway Board levels.

Overall scope of the SMMS-Project includes development and implementation of Functional modules at the pilot sites.

In ordered to develop an integrated and comprehensive web-based system useful to all levels of management, it is necessary to have in place computer-based applications for all the activities. The SMMS needs will be fulfilled in the form of queries and reports generated on a comprehensive data base.

The application shall be developed in consideration of formats approved by Railways or latest SEM released by S&T consist of standardized annexures related to S&T Gears.

23.5 Mobile Application for SMMS

Mobile Application is very critical component of the solution. Since Maintenance of signalling gears to be done at station yard/field level, mobile based application will be handy for the ESM/JE/SSE to upload maintenance data from the location.

As a part of SMMS program by Railway board/CRIS, mobile tablet are also provisioned for the field maintainers. However mobile application is not been developed as part of existing solution.

The mobile application shall ensure following requirement broadly:

1. Mobile application shall work with android OS, however provision for iOS also shall be kept
2. User Friendly Interface for railway maintainers to remind Schedule due / overdue as notification
3. Accessibility Maintenance roaster access, Filling of schedule directly from field, quick access about history of maintenance
4. GPS based Location tagging to ensure maintenance is done from correct field location.
5. GPS tagged Field photograph before and after maintenance, option for video upload
6. Schedule of particular gears shall be visible when maintainers is in the proximity of the location
7. Application shall work in offline mode also since at yard there could be unavailability of mobile data/internet access.
8. Synchronization of offline data with central server whenever network available
9. Access of specification, installation/maintenance videos, document from field.
10. Integration with IOT based online measurement/monitoring system for correlation

23.6 Field Survey Mobile Application:

Android based mobile application shall be developed for capturing asset/gear information from the field. The captured data shall include geo tagged images and other information for creating digital asset register. The application shall work in offline mode as well and then send data to central server whenever gets internet.

23.7 Major Modules of SMMS Application

SMMS is required to be developed for effective monitoring and management of following main modules of Signaling and Telecommunication fields of Railways:

23.7.1 ASSET MANAGEMENT MODULE

The objective of this module is primarily capture field asset information and create digital asset register with geo tagging. This is the first step towards implementation of SMMS and Integrated asset management system.

This module shall capture the details regarding the assets distributed over the division/Railway with focus on the stations/auto sections. Regarding stations statistics like, type of gears, interlocking, block working, route, etc., are captured. Improvements to reliability based on the performance of assets like replacement of over-aged, under-rated and otherwise deficient assets and prevent repeated failures, poor performance, excessive maintenance, vulnerability etc. Augmentation of the Assets based on increase in traffic, infrastructure upgradation and improvement to reliability. Verify the service life and condition to avoid

premature replacements and ensure timely replacement.

The following major information shall be captured against each gear/asset. Gear Name, Type, Make, Model, Sr No, Codal life, Date of Installation, Date of Manufacturing, Geotagged image etc.

The list of gears available are not limited to following:

1. Electrically Operated Point
2. DCTC
3. LED Main Signal
4. LED Shunt
5. LED Route Indicator
6. LED Calling On
7. Battery Charger & Battery
8. Lifting Barrier Maintenance (Electrical LC)
9. Lifting Barrier Maintenance (Mechanical LC)
10. Location Box
11. Point Detector (Electrical)
12. IRJ
13. Glued Joint Testing
14. IPS
15. Siemens (AFTC)
16. Bombardier (AFTC)
17. Ansaldo (AFTC)
18. UAC
19. Eldyne (SSDAC)
20. CEL (SSDAC)
21. G.G. TRONICS (SSDAC)
22. MEDHA (SSDAC)
23. Eldyne (MSDAC)
24. CEL (MSDAC)
25. SIEMENS (MSDAC)
26. FRAUSHER (MSDAC)
27. SGE (Block Instruments)
28. Push Button (Block Instruments)
29. Neales Token (Block Instruments)
30. Daido Token (Block Instruments)
31. BPAC with UAC
32. BPAC with UFSBI
33. Ansaldo (Electronic Interlocking)
34. Medha (Electronic Interlocking)
35. Kyosan (Electronic Interlocking)
36. Westrace (Electronic Interlocking)

37. Earth Testing Record
38. Cabin/Relay Room /Relay hut
39. Operating cum indication Panel
40. Solar Panel
41. DG Set
42. Selection Circuit Testing
43. Cable Testing Summary
44. Key Transmitter Maintenance
45. Data Logger
46. Power Panel
47. ELD

23.7.2 SCHEDULED MAINTENANCE MODULE

Preventive maintenance of all equipment should be done as per SEM/approved schedules on regular basis for better reliability of the system. This module is primarily for the artisan staff who are scheduled to perform maintenance of assigned gears on regular basis. Hence it is necessary to generate schedules on weekly, fortnightly, monthly, half yearly and on yearly basis, as laid down in Signal Engineering Manual and as per local railway instructions. It should be possible to monitor the Maintainer's movement, their schedules and corresponding maintenance schedules for a Station etc. Maintenance chart is prepared for the maintenance staff along with the stations/gears to be maintained, maintenance procedures and periodicity to be followed.

This shall be 3G/4G based system and signaling supervisors or Technicians shall use handheld device like android mobile or Tablet to access SMMS application for entering Maintenance schedule done or parameters measured only when they are in the close vicinity of concerned gear being maintained by them.

The mobile application shall work online and offline mode in case of unavailability of network.

Name and number of gears shall be selectable options so that there are no mistakes in the reports being generated. To achieve this data of all gears of the stations have to make in the form of Data Form, which shall be regularly updated by Divisional HQ immediately after any changes are done. Previous Data sheet shall be automatically stored in the history folder and new data sheet shall be in use. It shall be possible to generate report of such changes highlighting the changes done and authority who did it.

On opening of SMMS, option shall be displayed on Main Screen "Activity to be Done" – Replacement per Codal Life or due to failure or MLR/Maintenance. On selecting of Maintenance further forms shall open up as detailed in next paras. On selecting option of replacement, the EDIT menu shall appear to edit all the details and keeping the previous records. Name & designation of official making this entry should also be entered. Reports shall be generated as per required format which will be given later.

The sub module for Schedule maintenance module is Record Maintenance.

23.7.3 SCHEDULED INSPECTION MODULE

Inspection schedules are to monitor maintenance standards and to ensure reliability of the assets and the mechanism for the timely feedback. Inspections are carried out at various levels from supervisory cadre onwards. Joint inspections with other departments are also captured here. The frequency and the type of inspection, scheduling etc. depends upon the level at which inspection is carried out. Various reports both graphical and tabular are provided.

There are following submodules to be customized as per field requirement:

a) Inspection Module
b) Joint-Inspection Module

23.7.4 PCDO MODULE

There are more than 97 Annexures to be implemented for PCDO module and this would be customized as per field requirement.

PCDO details as submitted by various field units to respective Zonal railways and MCDO from CSTE's to Railway Board have to be incorporated in the application as per the standard formats.

23.7.5 SIGNAL FAILURE REGISTER MODULE

For improving the performance of signalling system, the nature of failures needs to be analyzed before taking timely remedial action. All types of failure and possible causes are made available in the master database which can be added or modified.

Signal Failure Register Module shall provide TEST ROOM POSITION. This shall allow Station master / field staff to enter failure history for all type of signalling gears and shall create centralize SFR database for management reporting. This would be linked to MIS reporting module.

23.7.6 MIS REPORT & DASHBOARD

Documentation is the most important part in any management software. The system shall have inbuilt templates to generate document and can be customize as per requirement of Railways.

The system shall be capable of generating different reports of assets and maintenance as per customer requirement.

i) Application shall have different filter to generate report like Station wise, Division wise, Zone wise, by device type etc.
ii) Software should have facility to query data on date & parameter wise.
iii) View data in Tabular / Graphical form.
iv) Option should be provided to view data in both tabular as well as in Graphical format with selective or composite view of parameters and in different styles viz. bar and line.
v) The system shall be customized to generate reports as per railway required

format. It should have standard filter to filter data and export the result in PDF/Excel etc.

The application shall have various dashboard are as follows:

i) Maintenance Dashboard
ii) Asset Dashboard
iii) Failure Dashboard

The Dashboard shall be customizable as per the customer requirements.

List of modules regarding dashboard and reports are mentioned below:

a) Reporting Dashboard
b) Detailed Asset Report, Daily Maintenance asset report, Actionable event report
c) Zone & Division wise pending issues
d) Miscellaneous reports
e) Inspection report & compliance to inspection report
f) Codal life based custom search
g) Frequently failure gears
h) PCDO
i) Asset Utilization
j) Custom report for management
k) Inventory Management report
l) Predictive Maintenance Report

23.7.7 Rule Engine Module

This module shall be developed for configuration of gear wise threshold allowed parameters which shall be integrated to SMS & Email notification module.

23.7.8 PERIODIC SMS & EMAIL NOTIFICATION MODULE

Notification/reminder for out-of-range parameters, Maintenance overdue schedules shall be sent to respective railway employee.

a) SMS & email notification on asset entry & midlife rehabilitation alerts
b) Notification/reminder for out-of-range parameters, Maintenance overdue schedules

23.7.9 USER MANAGEMENT MODULE

Web Based Application Software should provide a login interface to the administrator to interact with user management module. Post Creation, User ID/Password creation, change reporting officer, Master Data Entry (Station, Section, division, zone etc.), Signalling gear allotment etc. are main activities of this module. Administrator shall be able to:

1. Manage User - Add User / Delete User / Edit User Information
2. Access Role – Software should have following access role the use the application:
   a) **Administrator** – Shall be able to do everything
   b) **Edit User** – Shall be able to perform add, edit, delete operation on his/her assign work area.
   c) **View User** – Shall be able to view the records only. Viewer should not be allowed

to perform edit and delete and create operation.

d) **Mobile User** – The user shall have mobile access only to fill the maintenance and inspection records.

3. Software should support the creation of role-based access of the information. It should have feature to define the privileges of user to access the limited information based on his/her role.

   User Search - Software should provide the feature to search Users based on their name, contact number or location etc.

   a) User ID/Password creation
   b) Zone/Division/Station Allocation

23.7.10 REPLACEMENT MANAGEMENT MODULE

The application shall be able to keep track of replacement of gear used in railway. The replacement management is very vital in decision making. If any type of gear which is frequently getting replaced, this module helps user to act against and try to replace this gear with other manufacturer.

23.7.11 SCHEDULE MANAGEMENT MODULE

The preventive maintenance module is used to create preventive maintenance plans for the equipment. The plans include service tasks to be performed for certain equipment at predetermined intervals of time or other usage metrics. These plans are then used by the system to automatically create work orders for equipment. The system can schedule work based on calendar time such as daily, weekly, monthly or yearly or based on a certain meter reading i.e. every 1000h machine hours.

SMMS application should have capability to create gear wise schedule. Each gear has different schedule which can be managed using this module. There shall be provision to start and stop the particular schedule at any time. There shall be provision to start the schedule of gear at any specific time.

There should be following options for scheduled operations:

- Fortnightly
- Monthly
- Quarterly
- Half Yearly
- Yearly
- 2 Yearly
- 3 Yearly
- 5 Yearly

Schedules should be simply created from menu driven web-based user interface. Special engineering skills, programming skills shall not be required to make, edit or change the schedule. There should be following features / checks in schedule configurator:

1. Multiple schedule - Application Software should support multiple schedules on any

gear/asset.

2. Schedule conflict Resolution – Application Software should be able to resolve the case of (time-based schedules being set up from server) schedule conflict i.e. in case of multiple schedules; it should not allow creating such schedules that are doing exactly opposite to any existing schedule on same time interval, and on same gear.
3. Group Scheduling - Software should provide an interface via which schedule can be applied on a single gear / asset or on a group of newly created as well as existing gear / assets.
4. Group creation for schedule - Software should support gear/asset type, administrative unit wise grouping of gears / assets so that a common schedule can be applied on these different groups as per the requirement.
5. Schedule Import - Software should also support import of schedules scheme from external sources - excel/csv files. Software should provide template to create START/STOP schedule.
6. Schedule - Software should have feature by which user can view:
   a. All Schedules Created by User
   b. Schedule Execution History
   c. Schedule Deletion from Enterprise Database
   d. Schedule Edit
   e. Schedule Reset/Delete for Gear
   f. Software shall support printing of history of executed schedules
7. Software shall support querying the currently active schedules from schedule management.
8. Schedule Status - Software shall maintain and display the current status of schedule. Status can be Due, Overdue, Ontime.
9. One of the most important functions of a SMMS is planning and scheduling maintenance work. Planning of maintenance is strategic and refers to the design of maintenance work over time and how it will be done. Scheduling, on the other hand, is tactical and refers to what work will be done on what day and with what resources. For SMMS, planning refers to determining the maintenance policy for assets, including preventive maintenance programs, tasks, parts, and resources required for maintenance. Scheduling in CMMS refers to developing daily, weekly and monthly schedules, determining priorities for work, assigning maintenance work to technicians and maximizing asset availability.

23.7.12 EQUIPMENT MANAGEMENT MODULE

Equipment management contains information about each equipment in the system including subcomponents and even individual parts. The information can include basic information about the equipment such as identifying information, categorization information, and instructions, blueprints and pictures. It is also used to record the maintenance history of the equipment: the preventive and corrective maintenance done to it, what parts were replaced and when and what the downtime of the equipment has been. This enables analysis of equipment performance and maintenance costs

23.7.13 VENDOR MANAGEMENT MODULE

One of the goals of vendor management is to gain the commitment of your vendors to assist and support the operations of your business. So, Vendor Management plays vital role. This application shall be able to store all the information of vendor like Vendor Name, Contact Details, Address, Responsible Person etc.

23.7.14 WORK ORDER MANAGEMENT MODULE

This is one of the important module of SMMS. They are used to initiate, track, and record all maintenance related activities. Work orders start as requests, which are then approved, the work is planned and scheduled, performed and finally recorded. Work orders contain detailed data about the maintenance in question and they produce valuable information on maintenance performance, costs and equipment history. Among the information tracked with work orders are: - maintenance tasks and their start and completion dates - detailed spare part usage - detailed work instructions for each step - labor and materials costs - information about who performed the work - life cycle information: where the work order originated from, when it was scheduled, approved, performed etc. After the work order has been completed the information can be used to track maintenance costs for the equipment. The two main types of expenses that are tracked are time and material charges. Work order backlog is useful for determining staffing requirements and shutdown periods.

23.7.15 AMC MANAGEMENT MODULE

Every service-based industry provides service to their customer to retain them by taking AMC. Customer can manage his/her AMC service by using SMMS software. With the help of this module customer shall be able to easily identify that the AMC of the gear is going to expire in which year or month.

23.7.16 SMC RECORD BOOK MANAGEMENT MODULE

The Inspector or Maintainer of railway shall be able to submit the SMC record as per the existing SMC record book.

23.7.17 MIDLIFE REHABILITATION MODULE

Alert generation for any gears or assets or items if it passes through its at least midlife of its expiry period and to be customized as per site requirement.

23.7.18 GIS BASED ASSET MANAGEMENT MODULE

The system shall have GIS capabilities to show all the outside gears on GIS Map for better visibility. There shall be provision to see the details of that asset by clicking on gear and redirect to details of assets.

23.7.19 DISCONNECTION MEMO(DCN) MODULE

Linking of maintenance activities of Signal requiring Disconnection Memos (DCN). This Module shall be made to monitor DCN activities and acceptance of DCN.

23.7.20 DRAWING & DOCUMENTATION MODULE

The Signal and telecommunication drawings are the important documents to be prepared at Head Quarters level and the executions are carried out at field level. As drawings are to be corrected and approved at Head Quarters only, with the competent authority's approval, all these stages are covered in this module. Converting all the Signalling documents into the scanned images/CAD formats and

the proper indexing for viewing and taking printouts can be done, if necessary, by using local resources.

Module shall be there to keep database of all drawings and documents of gears and shall be available through searching criteria and to be customized as per requirement

23.7.21 STATION BASED WEB YARD LAYOUT

Provision for display of Web yard layout dashboard for viewing signaling gears schedule history and condition based on last maintenance or current health once integrate with Predictive maintenance system.

23.7.22 API GATEWAY

The Bidder will develop the APIs and the application shall be capable to expose API to any authorized third party with API Key for the secure and authorized access.

23.7.23 INTEGRATION WITH CONDITION MONITORING SYSTEM

The application shall be capable of integrating with Condition Monitoring System. The application shall be capable of feeding data into maintenance or inspection form by clicking on fetch button.

23.7.24 EMPLOYEE MANAGEMENT MODULE

The application shall be capable of storing all the employee information like employee name, registration id, contact number, email address etc.

23.7 FORMATS/ANNEXURES

RailTel will provide formats/annexures of modules with successful bidder/partner which are approved/used by Railways. Bidder may also see the formats/annexures for their reference in latest Signal Engineering Manual (SEM) of Indian Railways (https://indianrailways.gov.in/railwayboard/uploads/directorate/signal/2021/IRSEM.pdf).

24. Database Requirements

Database application should be in RDBMS Open-Source platform where the server can store collected real time data in tabular structure with following broad applications:

1. The database shall be object relational open-source database.
2. **It shall be enterprise class open-source relational database** that supports both SQL (relational) and JSON (non-relational) querying.
3. Highly scalable and reliable data store with ability to scale seamlessly.
4. Data base structure should have defined Schema, Tables, and Indexes with Keys etc.
5. The tables should have primary and foreign keys and indexes if required for faster retrieval of data.
6. The data table must be scalable to incorporate multiple types of data storage.
7. It should be capable of maintaining data history, version management and

conflict detection / resolution.

8. It should support database replication functionalities
9. The RDBMS software shall be capable to run multiple databases for production and test/training purpose. Each partition shall be independent of the other and shall not affect the performance in the production
10. Importing of existing data from CRIS SMMS database to newly designed open-source database.

25. Post Go-Live and Production Environment Set Up

25.1 Manpower Support

Post Go-Live and Production Environment Set Up, successful bidder should support the SMMS application for a period of one year (extendable) by having Project Manager / Team Leader, Sr. Application Developer, Web front end developer, System Administrator and as per requirement (Software Engineer) etc. Agency should have its resources in Delhi/NCR region and RCIL shall decide for SMMS 1-2 support resources to be available in RCIL premises. In this case, RCIL will provide infrastructure and seats in its premises on weekdays and routine working hours (Monday to Friday – 9:30am to 5:30pm).

25.2 Integration Formats

Successful Bidder should have above resources for review and exploration of any new SMMS based requirements and accordingly provide integration formats.

25.3 Training and Documentation

Successful Bidder shall provide training and documentation to RCIL/Railways.

26. Data Centre Infrastructure

RailTel will be providing Infrastructure and services in its own data center wherein SMMS application will be deployed, hosted and managed. Bidder shall propose required infrastructure and OS requirement in following format.

SN	Virtualized Machine	vCPU	RAM	STORAGE	Remarks

27. Format for statement of Deviation

The following are the particulars of deviations from the requirements of the Instructions to bidders:

SN	CLAUSE	DEVIATION	REMARKS (Including Justification)

Note: In case of no deviation, bidder shall fill up above format with NIL deviation and submit along with Bid document.

28. Phases with Timelines and Responsibilities

Bidder to understand that all the items/activities of the SMMS project are independent and Project needs to be completed with parallel engagement of teams.

Phases	RailTel	Bidder/Agency	Timeline
	Award of LOA to Bidder		**T0**
Phase-I	RailTel to provide approved formats/ annexures for SMMS Modules	Preparation and submission of application design and deployment architecture document along with Software requirement specification	T0+20 Days
	RailTel to Provide IT Infrastructure at its Data Centre.	Agency to Assist in Infra set up, Network Configuration, Operating System Set Up etc with RCIL Data centre team.	
		Agency to Set Up and configure development as well as testing & release environment along with necessary Middleware application and database server(s).	T0+45 Days
	RailTel to Provide Source Code to selected agency/ bidder	Design Review, Code Review, Requirement Mapping along with Existing Codebase and deployment of existing application developed by CRIS	
Phase-II	RailTel to co-ordinate with Railways for any issue in approved Formats/Annexures for SMMS Modules	Development of Field Survey application, Asset Management module, User Management module and Employee Management Module	T0+ 4 Months
		Implementation of Field Survey application, Asset Management module, User Management module and Employee Management Module in one of the Station per Division	T0+ 5 Months
Phase-III		Development of Mobile Application with Asset Management and User Module	T0+ 5 Months
Phase-IV		Development of Inspection, Maintenance, Signal Failure Module, PCDO, MIS Reports, Dashboard and other modules defined in EOI document.	T0+ 7 Months
		Implementation of Inspection, Maintenance, Signal Failure Module, PCDO, MIS Reports, Dashboard and other modules defined in EOI document in one of	T0+ 8 Months

		the Station per Division	
Phase-V		Development of Mobile Application with balance Modules as per EOI	T0+ 8 Months
Phase-VI		Handholding, Customization and Support on Monthly basis	To Start at the end of Phase-V
Phase-VII	RailTel to set up time/location and teams who shall undergo trainings.	Training, Documentation and Technology Transfer	T0+ 11 Months
Phase-VIII		Start of Maintenance Support Period for One Year	To Start after end of Phase-VII

Note: All phases and timelines shall be complied with technical requirement and general requirement of the EOI/Tender.

Bidder to complete the above work within 11 months from the award of LOA.

29. Financial Bid and Schedule of Rates

Bidder has to submit financial bid as per Annexure-A

Annexure A

Annexure A: Financial Bid Schedule Cover Letter
"Development and Implementation of Signalling Maintenance Management System Application (Mobile & Web) over Indian Railways"

(To be submitted in on Letter Head sealed envelope marked "Financial-EOI Number: ……")

Date: .....
Invitation for EOI No.: .....
Name of Bidder: .....

Schedule of Rates:

The financial bid schedule is divided into following items / application schedules along with phases, timelines and payment terms:

SN	Work Item	Unit	Qty (Q1)	Unit Rate (R1)	Basic Amount in INR (A1 = Q1xR1)	Basic GST Amount in INR (B1 = A1x18%)	Total Amount with GST (A1+B1)
1	Migration, Porting, Gap analysis, requirement document finalization, re-installation and configuration of Existing SMMS solution to Cloud Infra at RailTel Data Centre	Lot	1				
2	Development of SMMS Web Application as per scope of work defined in EOI document	Lot	1				

SN	Work Item	Unit	Qty (Q1)	Unit Rate (R1)	Basic Amount in INR (A1 = Q1xR1)	Basic GST Amount in INR (B1 = A1x18%)	Total Amount with GST (A1+B1)
	(**Bidder to provide the types of resources and Man-month Unit Rate taken, in Annexure-A1 given below)**						
3	Development of SMMS Mobile application as per scope of work (**Bidder to provide the types of resources and Man-month Unit Rate taken in Annexure-A2 given below)**	Lot	1				
4	Survey of one complete station per division and digitization of Survey record in Asset Management Module further implementation of SMMS Application **(One station per Division)**	Station	5				
5	Installation, Testing, Deployment and implementation of SMMS Application on RailTel Cloud to go live for five division of Indian Railways namely Ambala & Moradabad (NR), Kota (WCR), Hyderabad (SCR), Sealdah (ER).	Division	5				
6	Training of Railway users at RailTel/Railway premises during implementation period as detailed in the tender document.	Lot	1				
7	**Maintenance Support Cost of SMMS Application** (**Bidder to provide the types of resources and Man-month Unit Rate taken in Annexure-A3 given below)**	Year	1				
	Total Amount in INR						
	TOTAL AMOUNT in INR (Words)						

We offer to execute the Work in conformity with the Bidding Documents;

Name .....
In the capacity of .....
Signed .....
Duly authorized to sign the Bid for and on behalf of .....
Date

29.1 Break-up of Resources against SOR No. 2 (Development of SMMS Web Application)

Annexure-A1

SN	Type of Resource	No. of Man- month taken	Unit Rate (in INR)	Total Cost
1				
2				
3				
4				
5				
	Total Cost of SOR no. 2			

29.2 Break-up of Resources against SOR No. 3 (Development of SMMS Mobile application)

Annexure-A2

SN	Type of Resource	No. of Man- month taken	Unit Rate (in INR)	Total Cost
1				
2				
3				
4				
5				
	Total Cost of SOR no. 3			

29.3 Break-up of Resources against SOR No. 7 (Maintenance Support Cost of SMMS Application)

Annexure-A3

SN	Type of Resource	No. of Man- month taken	Unit Rate (in INR)	Total Cost
1				
2				
3				
4				
5				
	Total Cost of SOR no. 7			

30. Payment Terms:

30.1 All payment terms shall be in accordance with agreement between RailTel and Customer. RailTel will make payment to selected firm on submission of Tax invoice.

30.2 All payments shall be on back to back basis i.e milestone payment to selected bidder shall be made after receiving payment from Customer.

30.3 In case of any penalty or deduction from Customer, same shall be passed on to selected bidder on proportionate basis.

30.4 Indicative payment terms separated based on individual application technical scope, phases and delivery as per Phases with Timelines and Responsibilities clause no 28. are as under:

SN	Phases/Activity/Milestone	Payment Terms	Remarks
	SOR no. 1, 2, 3, 4 , 5 & 6		
1	On Completion of Phase-I	10%	On Verification by RailTel Authority
2	On Completion of Phase-II	20%	On Acceptance Certificate by Railway Authority and Verification by RailTel Authority
3	On Completion of Phase-III	20%	-Do-
4	On Completion of Phase-IV	10%	-Do-
5	On Completion of Phase-V	10%	-Do-
6	On Completion of Phase-VI	10%	-Do-
7	On Completion of Phase-VII	10%	-Do-
8	On Completion of Phase-VIII	10%	-Do-
	SOR no. 7		
9	Quarterly Payment of Maintenance Support after completion of each quarter		On Verification by RailTel Authority

31. Completion Period of Association/Validity of Agreement

The completion period will be governed as mentioned in Phases and timeline section. Post deployment, contract will be for one year for support services, however Contract Tenure may be extended further by RCIL based on mutually agreed terms & Conditions.

32. Other Terms and Condition

1. Bidders are requested to quote their best prices.
2. Unless otherwise specified all prices quoted must remain firm except for statutory variation in taxes and duties during contractual delivery period. Any increase in taxes and duties after expiry of the delivery period will be to vendor account.

3. Offer should preferably be typewritten and any correction or over- writing should be initialed. Rates to be indicated both in words and figures.
4. Sealed offer in envelope super scribing tender enquiry number and due date of opening must be sent by Registered or Speed Post or to be dropped in the Tender Box specified for the purpose. Offers received after specified date and time are liable to be rejected.
5. Offer should be valid for a minimum period of 180 days from the date of signing of MoU with customer.
6. Printed conditions on the back side of the offers will be ignored.
7. Any increase in taxes and duties after expiry of the delivery period will be to supplier's account. This will be without prejudice to the rights of RCIL for any other action including termination.
8. RCIL shall have the right to terminate the contract by giving 30 days notice without assigning any reasons thereof. However, in the event of any breach of terms of the contract, RCIL will have right to terminate the contract by written notice to the Seller.
9. FORCE MAJEURE: Any delay or failure to perform the contract by either party caused by acts of God or acts of Government or any direction or restriction imposed by Government of India which may affect the contract or the public enemy or contingencies like strikes, riots etc. shall not be considered as default for the performance of the contract or give rise to any claim for damage. Within 7 days of occurrence and cessation of the event(s), the other party shall be notified. Only those events of force majeure which impedes the execution of the contract at the time of its occurrence shall be taken into cognizance.
10. In case of any dispute or difference arising out of the contract which cannot be resolved mutually between RCIL and vendor, it shall be referred to a Sole Arbitrator to be appointed by the CMD, RCIL.
11. The Arbitration and Conciliation Act, 1996 and rules made there under shall apply to the Arbitration Proceedings.
12. The contract shall be governed by and construed according to the laws in force in India and subject to exclusive jurisdiction of the Courts of Delhi only.
13. RCIL may place the order in full or partial manner based on customer requirement.

33. Penalty for Delay in Completion

33.1 If the bidder fails to execute and complete the work within the timeline specified in the EOI, the bidder shall accept reduction in the total amount payable to him by the purchaser at the rate of 0.5% per week or part thereof (rounded off to the nearest whole number) of the incomplete value of the work (phase-wise) for the actual delay occasioned beyond the appointed time by which the work shall have been completed under the contract.

35.2 The total value of penalty on account of above shall be limited to maximum of 10% (Ten percent) of the total contract value.

34. Format for COVERING LETTER

COVERING LETTER (To be on company letter head)

EoI Reference No: RCIL/EOI/CO/ITP/2021-22/SMMS/09 dated 01.11.2021

Date:

To,

DGM/IT
RailTel Corporation of India Ltd.
Plate-A, 6th Floor, Office Tower-2,
NBCC Building, East Kidwai Nagar,
New Delhi 110023

Dear Sir,

SUB: Participation in the EoI Process

Having examined the Invitation for EoI document bearing the reference number ___ released by your esteemed organization, we, undersigned, hereby acknowledge the receipt of the same and offer to participate in conformity with the said Invitation for EoI document.

If our application is accepted, we undertake to abide by all the terms and conditions mentioned in the said Invitation for EoI document.

We hereby declare that all the information and supporting documents furnished as a part of our response to the said Invitation for EoI document, are true to the best of our knowledge. We understand that in case any discrepancy is found in the information submitted by us, our EoI is liable to be rejected.

Authorized Signatory
Name
Designation
Contact Details

35. Proforma for Performance Bank Guarantee Bond

Form No. 1

PROFORMA FOR PERFORMANCE BANK GUARANTEE BOND
(On Stamp Paper of Rs one hundred)

(To be used by approved Scheduled Banks)

1. In consideration of the RailTel Corporation of India Limited, having its registered office at Plate-A, 6th Floor, Office Tower-2, NBCC Building, East Kidwai Nagar, New Delhi-110023 having agreed to exempt ……(Hereinafter called "the said Contractor(s)") from the demand, under the terms and conditions of an Purchase Order No……dated……made between……and…….. for (hereinafter called " the said Agreement") of security deposit for the due fulfillment by the said Contractor (s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. ……(Rs …….. only). We …… (indicate the name of the Bank) hereinafter referred to as "the Bank") at the request of…… Contractor(s) do hereby undertake to pay the RailTel an amount not exceeding Rs……..…. against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We, ……. Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel by reason of breach by the said Contractor(s) of any of terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs . ……

3. We, ……. bank undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Tenderer(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal. The payment so made by us under this Bond shall be a valid discharge of our liability for payment there under and the Contractor(s) / Tenderer(s) shall have no claim against us for making such payment.

4. We, …… Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried

out by the said Contractor(s) and accordingly discharges this Guarantee. Unless a demand or claim under the Guarantee is made on us in writing on or before the …… We shall be discharged from all liability under this Guarantee thereafter.

5. We,…… (indicate the name of Bank) further agree with the RailTel that the RailTel shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for any time or from time to time any of the powers exercisable by the RailTel against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension to the said Contractor(s) or for any forbearance, act or omission on the part of RailTel or any indulgence by the RailTel to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.

This Guarantee will not be discharged due to the change in the Constitution of the Bank or the Contractor(s) / Tenderer(s).

(indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the RailTel in writing.

……the day of 2021

for ……..
(indicate the name of the Bank)

Witness

1. Signature Name

2. Signature Name

Note: Claim Period of BG will be 365 days more than the BG Validity date.

36. Format for Bid Security Declaration

Form No. 2

Format for Bid Security Declaration
(On Non-judicial stamp paper of Rs. 100/-)

Whereas, I/We _____(Name of Agency) has submitted bid for _____ (Name of Work and Tender No.) and whereas Earnest Money Deposit is being exempted in the aforesaid tender to give relief to the bidders as per Govt. of India guidelines due to severe financial crunch on account of slowdown in the economy due to the pandemic,

I/We hereby submit the following "Bid Security Declaration" in lieu of exemption from submitting Earnest Money Deposit: -

1) If I/We withdraw or modify my/our bid during the bid validity period (including extended validity of tender) specified in the tender documents;

Or

2) If, after the award of work, I/We fail to accept LOA/LOI, or to sign the contract agreement or fail to submit performance guarantee or fail to commence the work within stipulated time period prescribed in tender documents;

Or

3) If I/We furnish any incorrect or false statement / information/ document;

Or

4) If I/We hide any relevant information or do not disclose any material fact in the tender;

Or

5) If I/We commit any breach of integrity Pact;

I/We may be disqualified and banned for a period of three years and shall not be eligible to bid for future tenders in RailTel Corporation of India Ltd. for the period of three years from date of issue of such orders.

(Signed by the Authorized Representative of Firm).

Name of Authorized Representative:

Name of Firm:

Date:

********** End of Document **********