

NATIONAL HIGH-SPEED RAIL CORPORATION LIMITED

(A Joint Sector company of Govt. of India & participating State Government)

**National High-Speed Rail Corporation Limited (NHSRCL)
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Website: <https://www.nhsrcl.in>

Expression of Interest (EOI)

For Presentation of

Ticketing System Solution in Mumbai Ahmedabad High Speed Railway project

(EOI No.: NHSRC/CO/S&T/2018/03)

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DISCLAIMER

The information contained in this Expression of Interest (EOI) Document or subsequently provided to Solution provider/s, whether verbally or in documentary form or on behalf of National high-speed Rail corporation Limited (NHSRCL) is provided to Solution Provider(s) on the terms and conditions set out in this EOI Document and any other terms and conditions subject to which such information is provided.

This EOI Document is neither an agreement nor an offer and is only an invitation by NHSRCL to the entities that are participating to submit their EOI as stated in the EOI Document.

The purpose of this EOI Document is to provide the entities with indicative information to assist the formulation of their Presentation. This EOI Document does not purport to contain all the information each entity may require.

This EOI Document may not be appropriate for all persons, and it is not possible for NHSRCL, their employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this EOI Document.

The NHSRCL and their employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the EOI Document.

NHSRCL may in their absolute discretion, but without being under any obligation to do so update, amend or supplement the information in this EOI Document.

NHSRCL reserves the right not to proceed with the work, to alter the time table reflected in this document or to change the process or procedures to be applied for inviting presentation by solution provider of Ticketing system in MAHSR.

No reimbursement of cost of any type whatsoever paid to persons, or entities expressing interest in the work.

The profile for all the sections of MAHSR project, including stations is for general information of the Solution Provider and may undergo changes/ revisions.

NOTICE INVITING EOI

National High-Speed Rail Corporation Limited (NHSRCL)
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EOI for Presentation of Ticketing System Solution in MAHSR Project

EOI No NHSRC/CO/S&T/2018/03

Date:28/05/2018

National High Speed Rail Corporation Limited (NHSRCL) invites Expression of Interest (EOI) from experienced Firms/Agencies/ Companies to present Ticketing System Solution for MAHSR project.

For further details please visit website: <https://www.nhsrcl.in/active/tender>

DEFINITIONS AND ABBREVIATIONS

A. Definitions

In this EOI Document, the following word(s), unless repugnant to the context or meaning thereof, shall have the meaning(s) assigned to them herein below:

- 1) CSC stands for Contact less Smart Card, which is Fare media based on technology of contact less proximity cards. They may be used by MAHSR Ticketing system of NHRCL.
- 2) Paper Ticket-A travelling Authority issued to the Passenger in a prescribed paper format in which the information on the service contents and the fare is shown.
- 3) s/TOM: Secondary Ticket Office Machines located at external to MAHSR stations as commercial kiosks, retailers, railway stations, post offices and other public places for issuing CSCs and add value to CSCs. These are manned machines.
- 4) Automatic Gate: Gate(s) provided at the line of separation between paid and unpaid areas of a MAHSR stations for entry/exit of passengers to/from the platform of a station.
- 5) Loading/Topping-up: Action of transferring additional amount to a CSC for increasing the resident value in the card to enable use of stored value in the card for availing services of MAHSR Rail network or other service providers.
- 6) Add-value: This term implies same as top-up except that add-value denotes action of actual encoding of monetary value in the CSC the value is added/ deducted to/from CSC when it is physically brought in the proximity of a CSC reader/writer.
- 7) Stored value: The monetary value stored in a CSC.
- 8) TVM: Automatic Ticket Vending Machines at MAHSR's stations for sale of tickets and adding value to CSCs. These are unmanned machines.
- 9) AVM: Add Value Machines at MAHSR's stations for adding value to CSCs. These are unmanned machines.
- 10) TOM: Ticket Office Machines provided at Ticket issuing counter in MAHSR's Stations for issuing ticket and CSCs and also perform add value to CSCs. These are manned machines.
- 11) Ticketing Solution provider means an applicant who has submitted the presentation as per this EOI Document.
- 12) OCC shall mean Operation Control Centre of MAHSR located at Sabarmati
- 13) EOI Document shall mean this EOI Document and shall include any addendum(s) issued thereto
- 14) Any other term(s), not defined herein above but defined elsewhere in this EOI Document shall have the meaning(s) ascribed to such term(s) therein and shall be deemed to have been included in this document.

B. Abbreviations

Abbreviation Expanded Form:

- 1) NHSRCL-National High-Speed Rail Corporation Limited
- 2) INR -Indian Rupee
- 3) MAHSR- Mumbai Ahmedabad High Speed Railway
- 4) MIS- Management Information System
- 5) TVM- Ticket Vending Machine
- 6) AVM- Add Value Machine
- 7) OCC-Operation Control Centre
- 8) PPU- Portable Processing Unit
- 9) TOM- Ticketing Office Machine
- 10) AFCS- Automatic Fare Collection System
- 11) POS- Point of sale
- 12) EFO- Excess fare office
- 13) HSR- High speed Railway
- 14) CCHS- Central clearing House system
- 15) CC/DC- Credit card/Debit card
- 16) UPS- Uninterrupted Power Supply
- 17) CSC- Contactless Smart Card

1. INTRODUCTION

The National High-Speed Rail corporation (herein after called as NHRCL) is a joint Venture of Government Of India and & Participating State Governments set up for implementation of the MAHSR project with the objective of ushering high speed Railway corridor between Mumbai -Ahmadabad.

The project would be ushering India into the category of few countries of the world using high speed Railway system. The first high speed Rail corridor to be implemented in the country with technical & financial assistance of Govt. of Japan has been identified for Mumbai to Ahmedabad with twelve stations in the states of Maharashtra, Gujrat & union territory of Dadar & Nagar Haveli, the corridor will have a length of approximate 508 KM.

National high-speed corporation Limited is calling for **Expression of Interest (EOI) to take administrative decision pertaining to bidding process for Design, Supply, Installation, Testing and Commissioning of Ticketing System in the Mumbai to Ahmedabad high speed Rail Project.**

KEY DETAILS at **chapter 5** for all important information related to clarification and submission of presentation. The EOI Documents can be downloaded from NHRCL's website as detailed in **Sl. no. 1 of the chapter 5.**

If any of the days specified in the **Key Details**, happens to be a holiday for NHRCL the next working day shall be the key date. Please note carefully the requirements for submitting presentation and the date and time for submittal. The presentation must be submitted in the office of NHRCL not later than the specified date and time. Presentation offer received after the due date and time are liable to be rejected.

Further, corrigendum/ addendum, if any, issued to the EOI Document, shall be published on the website. It is the Party 's responsibility to submit the completed EOI Document taking into account all addenda/corrigenda issued.

2. SCOPE OF WORK

2.1. Objectives of NHRCL Ticketing System:

The Basic purpose of ticketing system is to sell the transportation service which HSR is envisaging to provide. This simplified assumption of the basic purpose i.e. sale our services will have to be properly integrated with the various essential objectives which HSR desire to achieve through it's ticketing system. From both customer & Management point of view, the following five objectives should be the integral part of the overall ticketing system of HSR-

2.1.1 Ease of Purchasing- The passenger should have all the available options to procure the tickets. They can buy the ticket:

- i. Across the window (human interface)
- ii. From Vending Machine , Automatic Ticket Printing Machine etc (no human interface),
- iii. On Web Portals
 - NHRCL web portal
 - Non-NHRCL web portal like Indian Railway Website & Private Tour/Travel agencies, service providers etc
- iv. Mobile App.

These options will cater to the different customer profile that will be travelling in HSR. Looking at the current usage of internet in India by the passengers who are in the upper segment, there will be a need to have to a strong and reliable web and mobile app-based ticketing system. The overall process of purchasing of ticket by any of above mentioned options will have to be very customer friendly i.e. a pleasurable experience. The various payment options as recognised by the RBI should be available for the passenger.

The process of cancellation and refund should also be simple and convenient. If required, the ticketing system should be able to cater to following value added service if HSR desires to provide:

- Hotel Industry
- Car rental industry
- Tour Operators
- Lounge accessibility
- Pre – booking of wheel chair
- To cater the passengers who will be using HSR on a regular basis, a ticketing system based on smart card will also have to be developed'
- Provision of Ticket sale/ purchase with various tourist services websites/ service provider etc.

2.1.2 Access control- The need for methodological controlling the passenger movement on HSR station without using excessive manpower will require automated access control. The access to paid concourse area will be facilitated by an automated gate system. These gates will be provided both at entry and exit areas will be governed by the tickets issued to the passengers by the system. The protocol of automatic gate opening based on the different types of options which the passengers will be using to purchase the tickets will have to be designed.

2.1.3 On-board inspection/sale of tickets- In order to keep the on-board ticketing staff to bare minimum. It is desired that the on-board inspection methodology shall be through portable handheld terminals/analysers. These terminals/analysers will not only ease the on-board inspection but also be updating the status of occupancy on real time basis. The

real time updating occupancy will help in sale of unoccupied seats by the next stations. The information shall be relayed to all the subsequent stations through OCC and the unoccupied seats can be made available to the next person waiting in queue or making request. In order to successfully design and implement such system, reliable network connectivity is a must.

2.1.4 Efficient Accounting- With multiple agencies involved in sale of tickets and various modes of payment, the ticketing system should be able to maintain and ensure proper apportionment of money into HSR account.

2.1.5 Management Information System- The ticketing system should ultimately result in a MIS tool. Out of many reports which will be generated, the ticketing system should assist the higher management in taking decisions on following areas-

- Dynamic pricing (Optional)
- Introduction of additional services
- Cancellation of services if required
- Customer profiling-targeting the publicity industry as per the profile

2.2. Brief Scope of Work

The scope of work includes familiarity about Design, Supply, Installation, Testing, Commissioning and Maintenance of High speed ticketing System in MAHSR to take administrative decision to prepare for bidding process for implementing the project by NHRCL.

Mumbai Ahmedabad High speed Ticketing System should include but not limited to elements ranging from traditional traveller information system to quick and automatic gate control systems using contactless media such as MAHSR Travel Card etc., advanced Ticketing management application, pre-trip web-based information systems, Variable Message Signboards (VMS) display boards, real-time information on mobile application.

The **Indicative Technological requirements** for AFC Ticketing System is mentioned below:

SN	Standards	Description
1.	Fare media	Paper ticket, E-Ticket, and Mobile ticket with Barcode/QR code for verification
2.	Gates	Computer Controlled Automatic gates at entry and exit. There will be following types of gates: Entry, Exit Reversible-can be set to entry or exit
3.	Station computer and AFC network	All the fare collection equipment shall be connected in a local area network with a station server controlling the activities of all the machines. These station servers will be linked to the central computer situated in the operational control centre through the optic fibre communication channels.
4.	Central Computer	The Central Computer is the heart of centralised AFC system and shall be in redundant configuration. The central Computer is connected

		through high speed network(backbone) to all external & internal network as well as all their station equipment for Ticketing & fare collection. The data of Ticketing and fare collection are synchronised with their equipment and keep updating their own database on real time basis. The centralized control of the system shall provide real time data of earnings, passenger flow analysis, MIS reports etc.
5.	Gate way & Security system.	Central system connected to third party gateway for ticketing and payment. The system shall be proven to equip with strong security system.
6.	Points of sale (POS)/ Ticket office machine (TOM)	Manned ticket office Machine with payment facility (Credit/Debit card reader, cash management tool, Ticket thermal paper etc) shall be installed in the stations for selling tickets to the passengers.
7.	Excess Fare Office(EFO)/Customer care Office	Manned Ticket office near AFC gate for analysing invalid Tickets (Cancellation, Refund, Replacement, Reschedule, Surcharge, Excess fare deduction etc) and passenger quarries.
8.	Ticket reader and portable ticket decoder	Ticket reader shall be installed near EFO for passengers to check information and validity by own.
9.	Mobile Ticketing system	Ticket sale via Mobile Web and Mobile Apps for HSR
10.	On line Ticketing system	E- Ticketing System with payment and Printing of Ticket.
11.	Self Service Ticketing Kiosks	It shall be provided at station or any crowded place or offices for booking, payment(By CC/DC payment) and get Tickets on their own without the need to queue at ticket counter.
12.	Ticket Vending Machine (TVM)	It shall be provided at station or any crowded place or offices for booking, payment(by all types of Payment) and get Tickets on their own without the need to queue at ticket window.
13.	CCHS	Central Clearing House System shall be provided at OCC for clearing and settlement between different registered operators.
14.	UPS (uninterrupted power at stations as well as for OCC	Common UPS of S&T system will be utilized.
15.	QR code reader	QR code reader to validate QR code- based Tickets on smart devices like mobile etc
16.	Automated Ticketing Printing Machine	Provision of Paper Ticket Printing at stations based on unique passenger code entered by passenger.

2.3. Proposed Technical Solution

For designing the ticketing system which incorporates the above features and objectives, NHSRCL would like to outsource the work to a professional agency. The agency should formulate a brief plan of action which may be a blue-print for achieving the above mentioned objectives. This plan should quantify the work on the basis of:

- Implementation Time frame
- Tentative cost of proposed solution
- Proposed Throughput per gate of AFC gate.
- Hardware Proposal
- Software Proposal
- Networking Infrastructure
- Multimodal Integration of tickets Proposal
- Any Additional Proposal for customer satisfaction .
- O&M support
- System Life
- System Upgradation Methodology

3. DESCRIPTION OF EOI PROCESS

National high-speed corporation Limited is calling for Expression of Interest (EOI) to take administrative decision for Design, Supply, Installation, Testing, Commissioning and Maintenance of Ticketing System at the Mumbai to Ahmedabad high speed Rail corridor.

Participating Entities shall be required to prepare a presentation for the proposed Ticketing system of MAHSR network based on the **information provided in Expression of Interest (EOI) and indicative Report of Joint feasibility Volum-3 & Volume-1 part-II in NHSRCL's website www.nhsrcl.in/project feasibility report.** The Participating entities shall propose a Ticketing solution based on "State of Art" duly fulfilling the **objectives & requirements of scope of work** and suggesting other **customer oriented value added features**.

All the prospective entities are requested to submit their presentation as per structure below:

1. Framework of Proposed Technical Solution(as per scope of work).
2. Roles and responsibilities
3. Business Plan
4. Support Required from NHSRCL.
5. Implementation plan
6. Credential Details as per Annexure-2

The firms for presentation will be **short listed** based on general criteria like financial capability/net worth, details of similar system provided in previous similar projects , throughput per gate etc. as provided in **Annexure-2** . During the EOI process, the Participating entity shall be invited to give his Presentation on the proposed Ticketing System Solution of MAHSR on the date and time communicated by NHSRCL.

4. EOI SUBMISSION

4.1 Deadline for Submission of Presentation

- 4.1.1 The presentation for Expression of Interest complete in all respects must be received at the address given in the **'Key Details'**, not later than the time and date indicated therein in sealed envelope. NHSRCL may, at its discretion, extend this deadline for the submission of presentation by extending the submission date and in that case all rights and obligations of NHSRCL and the Solution Providers subject to the original deadline shall thereafter be subject to the deadline as extended.
- 4.1.2 Presentation may be submitted in person or sent through post or Courier Service '. NHSRCL shall not be responsible for and shall not take any cognizance of postal or courier delay.
- 4.1.3 Presentation sent through e-mail or through other means of transmission which cannot be delivered in a sealed Envelope may not be entertained.
- 4.1.4 This EOI is not for any selection or rejection but knowledge sharing with experienced solution provider for preparing bid document & initiating Bid process for Design, supply, installation, testing and commissioning of Ticketing system in MAHSR.

5. KEY DETAILS

Dates for Downloading of EOI, Submission Date and date of Presentation with prospective Solution Provider is specified in table below.

S.No.	Milestone	Date, Time and Details
1	Release of Expression of Interest (EOI)	EOI Document may be downloaded from https://www.nhsrcl.in/active-tenders-nhsrcl from 28-05-2018 to 15-06-2018.
2	Queries by email	Queries if any may be sent by email to gmsnt@nhsrcl.in by 06.06.2018
3	Response to clarifications	Response will be published only in NHSRCL website by 08.06.2018
4	Last date and time for submission of presentation for solution of Ticketing System for MAHSR	Completed presentation of Ticketing Solution for MAHSR may be submitted in sealed envelope with relevant details through Speed Post or Registered Post or in person by 15.00 hrs on 15-06-2018 at office of National High Speed Rail Corporation Limited(NHSRCL), 2 nd Floor, Asia Bhawan, Road no-205, Sect-09, DWARKA, New Delhi-110077.
5	Date and time of presentation for Solution of Ticketing system for MAHSR	Date, time and any extension/ modification will be notified on https://www.nhsrcl.in .
6	Mode of submission	Envelop with covering letter as per Annexure- 1 and General letter as per Annexure-2 , Hard copy Soft copy (CD/DVD) of the presentation.

6. INSTRUCTIONS TO SOLUTION PROVIDER

6.1 EOI Document

- 6.1.1 The solution provider is required to examine carefully all the contents of the EOI Document including instructions, Scope of Works, Key Details including addenda /corrigenda, If any, and take them fully into account before submitting the presentation. Failure to comply with the requirement(s) of EOI Document will be at the solution provider's own risk & responsibility.
- 6.1.2 Solution provider may download the EOI document from NHRCL website as mentioned here: <https://www.nhrcl.in/active-tenders-nhrcl>. In detail, the Solution provider may seek clarifications from NHRCL. The date and time for seeking such clarifications are also mentioned in the KEY DETAILS for information of the Solution provider.

6.2 Late Proposal for EOI:

- 6.2.1 Any presentation for EOI received by the NHRCL after the due date and time for submission of EOI prescribed in Key Date, presentation may not be entertained.
- 6.2.2 The cost for preparation of the presentation shall be borne by the solution provider.

Annexure 1: Cover Letter

Dated:

To,

**The General Manager (S&T) On behalf of NHRCL
National High Speed Rail corporation Limited,
2nd Floor, Asia Bhawan, Road no-205
Sector-09 Dwarka,
New Delhi-110077**

Subject: With respect to Expression of Interest (EOI) for Ticketing system solution provider.

Dear Sir,

With respect to above mentioned subject, we are pleased to submit the EOI. Our EOI proposal is Subject to all provided information and scope of work contained in the EOI document.

We are fully aware that the NHRCL has right to accept any EOI or reject any/all EOI without giving any reason and upon rejection of EOI, we shall not be entitled to any right with related to the NHRCL.

We have thoroughly read and understood the EOI and sealed the Presentation for the Ticketing System of MAHSR.

1. **(Signature and stamp of the Bidder with date)**

Annexure 2: General Information

{On Company letterhead}

1. Solution Provider name and contact details.

Name of the Company:	
Nature of Entity:	
Address of Registered Office: Phone:	
Fax:	
E-mail:	
Main Line of Business with experience:	
Details of Project Handled earlier pertaining to AFC system in Metro/High Speed/Railways in last 10 years	
Submission of Financial capability/Net worth for last 5 years.(starting from 2013 or 2014)	
Submission of Proposed Technical Solution(As per Scope of work and structure)-in YES or NO	Hard Copy:
	Soft Copy: