**Indian Highways Management Co. Ltd. (IHMCL)**

Expression of Interest (EOI) for Engaging Vendors for supplying, installing, operating & maintaining RFID infrastructure for Nationwide Electronic Toll Collection (NETC) program in India

India has one of the largest road networks of over 52.32 lakh km, which comprises approximately 1 lakhs Kms of existing National Highways and approximately 1 lakhs KMs recently added to it thus making total National Highways approx. 2.0 lakhs Kms. The roads in India carry approx. 85% of passenger and 70% of freight traffic. Though National Highways constitute only 2% of road network but carry 40% of the traffic on India roads.

Due to heavy traffic and mostly manual operations at Toll Plazas, there are frequent traffic jams at toll plazas causing inconvenience to the highway users. In order to overcome this problem and improve transparency as well as faster clearance, cashless toll collection at Toll Plaza such as ETC under Digital India drive are being encouraged. NHAI has decided to upgrade all the toll plazas from manual to electronic with automatic cashless tolling using RFID tags mode of operation.

This EOI is being called from experts in this field to come forward with their suggestion in form of presentations along with draft specifications based on their expertise and experience in this field for installation and maintenance of NETC (RFID based) infrastructure at more than 400 toll plazas simultaneously through IHMCL.

Indian Highways Management Company Limited (IHMCL), a Company promoted by NHAI, was incorporated in 2013 and is mandated to implement the Nationwide Electronic Toll Collection (NETC) Program in India.

On 31st October 2014, the Government of India launched the NETC program with limited functionality on single-issuer single-acquirer model with only 2 participating entities (ICICI Bank and Axis Bank). However, the NETC Program could achieve limited success in the initial two years.

Post demonetization on 3rd December 2016, the NETC Program was relaunched with new vision under aegis of digital India program and cashless transaction. The new NETC Program envisioned functionalities are interoperable, multiple-issuer multiple-acquirer model of RFID-based Electronic Toll Collection (ETC) working across 400+ toll plazas on National Highways in India. NHAI decided to enable all the balance lanes (3000+) with RFID tag reading infrastructure across all the 400+ Toll Plaza under the NETC Program in the next 6 months.

As of 13th January 2017, over 2.4 lakh RFID tags have been issued to road users which has led to 12% of the toll being collected daily through the NETC Program across National Highways in India. There has been a steep rise of over 200% since relaunch. Given the fast uptake of the relaunched NETC Program in India, there is huge potential to enhance the RFID infrastructure across all toll plazas.

The RFID infrastructure will be further integrated with weigh-in-motion (WIM) equipment to monitor the weight of freight vehicles and penalize overloaded vehicles via the NETC Program itself. The WIM equipment will be installed at all lanes allowing freight-carrying vehicles to enter.

Passenger-only vehicles will be restricted for use by passenger vehicles using height-restricting gantries.

For the purpose of supplying, installing, integrating, commissioning, operating and maintaining RFID infrastructure (along with WIM) for a period of 5 years, IHMCL intends to empanel RFID infrastructure agencies and hence is inviting Expression of Interest (EOI) from all agencies with experience in installing and operating RFID infrastructure for the purpose of toll collection.

The key features of the NETC Program, obligations of the RFID infrastructure agency, and document requirements of EOI are enumerated in the annexures to this document.

Pre bid meeting – 30.01.2017 in HQ NHAI , Sector -10 Dwarka, New Delhi

Last date / time for receipt of EOI - 10.02.2017, by 3 pm

The RFID infrastructure agencies are requested to make a presentation to the panel constituted by NHAI on 15.02.2017 at 03:00 pm, demonstrating their capabilities for this assignment.

Address for communication and EOI submission**:**

Manager – Projects
Indian Highways Management Co. Ltd.
2nd Floor, MTNL Building
Sector-19, Dark
New Delhi -110 075

Email: rajesh.tripathi@ihmcl.com, info@ihmcl.com

(Rajesh Tripathi)

Manager (Projects)

Key Features of NETC Program in India

**Overall Model of NETC Program**

* The NETC Program is based on a multiple-issuer multiple-acquirer model with a Central Clearing House (CCH) to settle inter-bank transactions.
* IHMCL has co-opted National Payments Corporation of India (NPCI) to develop, deploy and operate the CCH. NPCI enables inter-bank transactions across various issuing and acquiring entities thereby allowing the interoperable NETC Program.
* The program has 5 banks (ICICI Bank, Axis Bank, State Bank of India, IDFC Bank, and Karur Vysya Bank) issuing RFID tags to road users across India. Any bank or prepaid payment instrument (PPI) entity can issue RFID tags to road users post certification from NPCI. There are multiple banks expected to start issuance over the coming weeks and are in the process of certification.
* Furthermore, the program has 8 banks certified to acquire electronic toll transactions by integrating with 370+ plazas. The model allows only one bank to collect e-toll at one toll plaza – thereby being responsible for all plaza lanes enabled with RFID infrastructure at any toll plaza.
* As of 13th January 2017, 352 toll plazas have allocated as per the toll allocation guidelines to 6 of the 8 certified acquiring banks.

**Plaza Infrastructure & Design**

* As of 13th January 2017, there are a total of 400+ plazas across 100,000 kms of National Highways across India. On average, each plaza has 5 plaza lanes in each direction. Thus, averaging to 10 lanes at each toll plaza. Of these, 350+ plazas have the required infrastructure, are operating RFID-based ETC and are ready for additional RFID infrastructure installation. The balance plazas are in the process of being prepared for RFID infrastructure installation.
* Going forward, NHAI wishes to install a Hybrid Lane Design of RFID Infrastructure across all toll plaza lanes. The design is without an ejection mechanism thereby requiring reduced RFID infrastructure and enabling faster implementation at toll plazas.
* In the Hybrid Lane Design, any road user (with or without RFID tag) can enter the lane. In case the RFID tag is valid (authenticated and not blacklisted), the transaction goes through electronically and the same is displayed on the User Fare Display. However, in case the RFID tag is not valid or not available, the road user will be notified and the user will have the option to pay via other modes of payment which may include cash, smart cards, or mobile wallets.

Obligations of the RFID Infrastructure Agency for implementation of Electronic Toll Collections (ETC) program in India

1. Supply, Installation, System Integration, Testing, Commissioning of ETC Toll Plaza systems based on Hybrid Design and use of passive RFID (18000-6C standard) tags for Automatic Vehicle Identification (AVI).
2. The systems shall be provided both at Public as well as Private-funded (Concessionaire) toll plazas. At the public-funded toll plaza, the system shall be locally stand-alone i.e. it will interface only with the Acquiring Bank’s system. On the other hand, at the private-funded (BOT/OMT) toll plaza, apart from interfacing with the Acquiring Bank, the system may have to interface with the local concessionaire’s existing toll management system (TMS). For this purpose, the bidder shall provide the required interfaces to his system and extend the necessary support for establishing the required connectivity with the existing Toll Plaza TMS.
3. Further, the Agency shall take up the existing RFID infrastructure on an as-is where-is basis. Currently, 700+ lanes across 350 plazas have been enabled with RFID infrastructure by NHAI through vendors. Additionally, the software system installed will need to be compatible with WIM infrastructure and be able to take the feed from WIM and take appropriate action as may be defined by NHAI at a later stage.
4. Operation and Maintenance of the above system and the existing RFID infrastructure for a period of 5 years after system commissioning. For the same, the Agency will be required to deploy at least one Dedicated Technical Person round-the-clock responsible for 3 toll plazas (at Project Implementation Unit level for Public Funded plazas and Concessionaire level for BOT/ OMT plazas or at a corridor-level to reduce the response time for maintenance).
5. The responsibility of civil works like Pavement Quality Concrete (PQC) lane surfaces, installation of equipment for the Toll Plaza ETC system will be the responsibility of the Contracting Agency. The Agency may sub-contract this to a civil contractor and coordinate the same. NHAI will ensure that no damages for lane closure during infrastructure development and/or installation is levied on the concessionaire.
6. The Agency will also be required to deploy the required mechanisms to enable remote monitoring of plaza infrastructure availability and performance at a central location accessible to IHMCL and/or NHAI through web-access.

Document Requirements for EOI

1. **Company registration details and Quality Standard Certification** (if any)
2. **Financial details** includingnet worth along with annual turnover for the last 3 years duly vetted
3. **Relevant experience in last 5 years in installing & commissioning e-tolling infrastructure in India or outside including**
	1. Country (or countries) and date(s) of installation
	2. Number of toll plaza lanes installed (RFID and/or any other e-tolling technology)
	3. Description of e-tolling technology used (including installation of WIM and/or any other equipment)
	4. Average time of installation for each lane (not including time to supply parts)
	5. Cost of installation per lane (excluding any civil work cost that may be required)
4. **Relevant experience in last 5 years in operating & maintaining e-tolling infrastructure in India or outside** **including**
	1. Country (or countries) and date(s) of operation
	2. Number of toll plaza lanes operated (RFID and/or any other e-tolling technology)
	3. Description of e-tolling technology used (including integration of WIM and/or any other equipment)
	4. Total time of operation
	5. Cost of operation and maintenance per lane
5. **Relevant experience in last 5 years in installing, operating and maintaining toll management systems at toll plazas in India**
	1. Number of toll plaza lanes installed or operated
	2. Years and total time of operation