Transport Big Data from Smart Transport Systems in the Asia Pacific Region for the Achievement of Sustainable Transport

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• Launched in 2014; aims to facilitate seamless movement by enabling digital payment of toll across all tolled roads in India.

• FASTag mandated by GoI in February 2021, toll plazas increased from 770 to 1,228, including 339 state toll plazas.

• Adoption rate of around 97 percent, over 6.9 crore FASTag issued to users, system has significantly improved the user experience by reducing waiting times at NH Fee Plazas.

• Adoption of the FASTag has enhanced the efficiency of toll operations, led to a more precise valuation of road assets, attracting further investment in India’s highway infrastructure.

• FASTag facilitated seamless, secure contactless payment for parking fees at over 140 parking lots in 50+ cities across India.

**Key Facts**
- Average daily collection via FASTag – INR 1.58 Bn
- Avg. no. FASTag transaction processed daily – 9.9 Mn
- 38 Issuer Banks, 23 Empanelled System Integrators, 14 Acquirer Banks, 100+ concessionaire/toll operators
Rules for Electronic Monitoring and Enforcement of Road Safety vide G.S.R. 575 (E) dated August 11, 2021, Rule 167 (A)

Notification: Rules for Electronic Monitoring and Enforcement of Road Safety vide G.S.R. 575 (E) dated August 11, 2021, Rule 167 (A)

- Electronic enforcement devices’ usage to identify traffic offenders & issue challans – body wearable cameras, speed cameras, Weigh in Motion etc.

- Rules for state governments to install electronic enforcement devices at key junctions/National and State Highways.

Benefits/ Impact of the GSR 575 (E)

- Online mode of issuance and payment for all challans which was not present in CMVR,1989.

- Time savings for drivers and ease of enforcement.
Advance Traffic Management System

• Advance Traffic Management System (ATMS) is being implemented on National Highways and Expressways for managing incidents of road crashes and enforcement of speed limit and other regulations on highways.

• The ATMS implemented on around 3,000 km of National Highways including projects under implementation such as Delhi- Mumbai Expressway (1200 km long)

• ATMS help to manage the traffic efficiently, enable users to be better informed and make safer, more coordinated, and smarter use of transport networks. It comprises of three systems –

  - Vehicle Speed Detection and Enforcement System: Captures speed data to detect vehicles exceeding the speed limit
  - Video Incident detection System: Real-time video analytics. To detect the events/ incidents
  - Travel Estimation System: Estimates travel time using RFID reader or ANPR camera
Intelligent Transport System (ITS)

- Comprises of Advance Traffic Management System & Toll Management System providing 24x7 surveillance of the expressway. Helps in Analysis of the reasons of accidents & take steps in minimizing the accidents.
  - Monitoring of unauthorized parking and encroachment on expressway.
  - More efficient, secure and safer transportation system
  - Real time monitoring of traffic congestion
  - Real time information to road users through Variable Messaging System.
  - Effective and efficient Incident Management System.
  - Enforcement by E-challan using ANPR.
  - ANPR system for multilane high speed free flow User fee collection.
Scheme for strengthening the Intelligent Transport System (ITS) in Public Transport System in the country

• Scheme covers -
  o Software development,
  o Establishment of data center
  o Development of web and mobile based applications
  o Hardware and software for Fleet Management System
  o Electronic Ticketing & Fare Collection Systems, Passenger Information & Feedback System and
  o Operation and Maintenance (O&M)

• Sharing of funds, Center: States (70: 30)
New Initiatives being evaluated for Toll Collection, Traffic Violations ANPR based MLFF and E-Challan System

**ANPR FASTaG System based Multi Lane Free Flow Tolling System**

- Automatic number plate capturing vehicle registration number (VRN) automatically. VRN is linked with FASTag id and used for processing the FASTag transaction instead of RFID tag.
- Conventional Cash collection at Toll Plaza resulted in long traffic queue & waiting time for commuters.
- NHAI evaluated Multi-Lane Free Flow tolling system at Urban Section of Expressway for seamless non-stop movement.
- Automatically capture data for both FASTag & non-FASTag users.

**E-Challan System**

- NHAI is adopting automatic generation of e-challan to traffic violators.
- Pilot being implemented on Delhi-Meerut Expressway.
GNSS Based Tolling In India

- NHAI also evaluating satellite-based tolling system in India.

- Pilot carried out along Delhi-Mumbai Corridor involving 500 commercial trucks. Used NavIC-enabled On-Board Unit, as mandated by the Government of India on all commercial vehicles.

- Successfully implemented the ‘Pay-as-you-use’ road tolling mechanism.

- Results confirmed that satellite-based tolling ensures no losses to NHAI or Concessionaire in comparison with existing barrier-based system.

- Government of India evaluating concept to implement on all highways in India.
eTransport Project

- Transport Mission Mode Project (eTransport MMP), automates RTO operations across the country
- Maintains a nationwide transport database with real-time update
- Provides a host of citizen-centric and trade-centric applications.

VAHAN
Services related to Vehicle Registration, Permit, Taxation, Fitness and allied processes.

SARATHI
One-stop solution for the issuance of various types of licenses by the Transport Department

ECHALLAN
Comprehensive solution for Traffic enforcement

POLLUTION CERTIFICATE
Solution to issue Pollution Under Control Certificates to vehicles
eTransport Landscape

- Vehicle related Services
- Driving License related Services
- Homologation
- National Permit
- Fancy Number
- Online CheckPost
- eChallan
- PUCC

- VLTD Maker
- SLD Maker
- Vahan Green Sewa
- Trade Certificate
- Driving School
- AITP
- Vehicle Recall
- Integrated Road Accident Database

- mParivahan App
- mVahan App
- eChallan App
- Virtual Court
- VLT&EAS
- Vehicle Scapping
- OWC Movement
VAHAN Portal

- Vahan intends to collate all the information available with road transport authorities for easy access by both citizens and regulators.

### VAHAN - Statistics

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<thead>
<tr>
<th></th>
<th>Description</th>
<th>Information</th>
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<tbody>
<tr>
<td>1</td>
<td>Vehicle Registrations</td>
<td>336.3 Million</td>
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<tr>
<td>2</td>
<td>Transactions</td>
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<td>3</td>
<td>Fitness Centres</td>
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<td>4</td>
<td>RTOs</td>
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<tr>
<td>5</td>
<td>States</td>
<td>34</td>
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<tr>
<td>6</td>
<td>Revenue</td>
<td>Rs. 5.95 Trillion</td>
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</table>
With help of Sarathi, all the work related to licenses like the issue of learner’s driving license, Permanent driving license, change in detail, etc. is done digitally.

<table>
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<tr>
<th>eChallan - Statistics</th>
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<tbody>
<tr>
<td>1 eChallans</td>
<td>138 Million</td>
</tr>
<tr>
<td>2 CCTV Notices</td>
<td>32 Million</td>
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<td>3 Virtual Court Collection</td>
<td>Rs. 2810 Million</td>
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<td>4 Virtual Court Cases</td>
<td>20 million +</td>
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<td>5 States</td>
<td>30</td>
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<tr>
<td>6 Revenue</td>
<td>Rs. 80.40 Billion</td>
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</table>
With help of Sarathi, all the work related to licenses like the issue of learner’s driving license, Permanent driving license, change in detail, etc. is done digitally.

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<td>Driving License Registration</td>
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<td>Digitized Driving Schools</td>
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<td>5</td>
<td>States</td>
</tr>
<tr>
<td>6</td>
<td>Revenue</td>
</tr>
</tbody>
</table>
Pollution Check Certificate

- A centralized application for Pollution Check to organize certificates for various States
  - Pollution check certificate Issuance
  - Integrated with ARAI approved equipment
  - Updating of National Database with Pollution compliant/ non-compliant vehicles
  - Facility to audit devices periodically

PUCC Issued – 162 Million

PUCC Centres – 37,843

States - 24

Revenue – Rs 700 Million
Thank You For Your patience