Centralized Electronic Tracking of Cargo & Passenger Vehicles

Gopal Valecha
AVP(Business Development, IT), DIMTS

Delhi Integrated Multi-modal Transit System Limited
Joint Venture of Govt. of NCT of Delhi and IDFC Foundation
An ISO 9001, 14001, OHSAS 18001, ISO 27001 & CMMI L3 Certified Company
Outline

- Introduction
- Facilitation of Cross Border Trade using Technologies
- Challenges
- How to overcome the challenges
- Proposed Key Features of Centralized Electronic Tracking Portal
- Technology Components
- Vehicle Tracking – For Visibility
- E-Seal-For Safety & Security
- Electronic Ticketing- For passenger Vehicles
- BBIN Experience
- What Role DIMTS can play
DIMTS Overview

**DIMTS** is a 50:50 Joint Venture of

**Government of National Capital Territory of Delhi (GNCTD)**

&

**Infrastructure Development Finance Company Ltd. (IDFC; USD 10 billion assets under management; power, highways, ports, etc.)**

**Chief Secretary of Government of National Capital Territory of Delhi** is the **chairman** of the company

**Vision**

To create an environment where the majority of trips take place by public transport in preference to personal motorized transport
DIMTS – in Numbers

- 2,000 Buses
- 50,000 TSR
- 25,000 PSV
- 400 + Water Tankers
- 40 + Make
- 80 GB Data /Day
- 12,00,000 Vehicle Registration
- 38,00,000 Smart Card License
- 1500 ETMs
- 850,000 E-Tickets
90,000 connected vehicles, sending data feed every 10 secs

3,000,000 Kms/day, Bus routes

50,000,000 Kms/day, Paratransit

50,000,000 Kms/day, PSV

800,000 passengers/day
MORTH - National Level Vehicle Security and Tracking System

Scope is to support MoRTH in formulating and implementing the scheme “Security for Women in Public Road Transport in the Country”

Project is planned to be funded from the Nirbhaya Fund.

Following components are proposed:

- A National Backend Data Centre.
- CCC in 32 cities covering more than 3 million vehicle.
- Installation of GPS CCTV Panic Buttons in nominated PSVs.
Projects and clients across 21 states in India and 5 countries
Facilitation of Cross Border Transportation
Objective

- Seamless movement of cargo, personal and passenger vehicles between countries
- Seamless exchange of data amongst countries
- Ensuring visibility of vehicles during transit
- Enhancing safety & security of cargo
Challenges

- Heterogeneous Transport Regulations
- Lack of Unified data sharing architecture
- Complex procedures
- Ensuring visibility
- Safety & Security issues
- Transshipments at borders
DELAYS

AFFECTING BUSINESS

Growth

COSTS
Policy & Regulations

Infrastructure

Technologies
What is required to overcome the Challenges?

- Need of a Centralized portal / single window platform
- Technology Architecture to enable seamless flow of information amongst different countries & concerned stakeholders
- Adoption of GPS technology to ensure visibility of cargo/passenger vehicles
- Adoption RFID & e-seal technologies to ensure safety of cargo
Electronic Tracking Information System (CETIN) for BBIN
Electronic Tracking Information System (CETIN) for TIPi-BM.
Key Proposed Features of Central Portal:

Registration of:

- Transport operators
- Importers and Exporters
- Cargo vehicles
- Valid insurance companies
- Crew including details of passport, visa, driving license etc
- Relief vehicles, Recovery vehicles and Diplomatic vehicles
Key Proposed Features of Central Portal:

Details of:

- Authorised officials

- Entry and exit points, Immigration Check Points, Land Customs Stations, Rest or recreation places, Repair facilities, Refueling Centers, Toll points etc with their geo-fencing on GIS map

- Authorized Routes and their geo-fencing on GIS map

- Various fees and charges payable by the transport operators
Key Proposed Features of Central Portal:

- Capture movement of vehicles vis-à-vis authorised routes.
- Capture date and time of vehicles reaching/crossing various points of interest.
- Real-time tracking of vehicles and display of their movement on GIS map vis-à-vis authorised route and points of interest.
- Raise alerts in case of specified incidents such as vehicle deviating from the authorised route, vehicle overstaying in the host country etc.
- Communication of alerts to designated officials of home country, host country and transport operator through SMS/email.
- Incident reporting through mobile app/platform, for accident/breakdown/repair of vehicle, sickness/accident of crew, incident to cargo, etc.
- Capture extension of stay of vehicle in the host country will be captured in the platform along with reasons.
- Repairs performed/parts/accessories added in the vehicle in the host country will be captured in the platform.
The Central electronic tracking platform will allow issuance/ generation of following documents:

- Issuance of Crew Identity Card by Home country
- Issuance of Permits by home country and counter-signature by host countries through digital signature
- Document for Temporary Admission by Home country
- Cargo Manifest by Home country
- Transit Declaration by Transport Operator
- Entry and exit endorsements
Key Proposed Features of Central Portal:

- Various reports will be generated through this platform including:
  - Reconciliation reports for entry and exits
  - Over stay reporting
  - Route deviation report
  - Vehicle movement history report
  - Incidents report
- The platform will allow **automatic release of bonds** on exit of vehicle from the host country.
- User authentication and role-based access to the platform.
- The common electronic platform will be accessible to authorised officials of all BBIN/TIPI-BM countries and other stakeholders through secure log-in mechanism.
Technology Components for Cargo Vehicles
Electronic Vehicle Tracking

- **AVL Application**
  - Real time tracking on GIS maps own @ 1:2000 scale
  - Route wise tracking and vehicle running information.
  - History tracking with trail of location updates.
  - Monitoring at Check posts

- **Dashboard:**
  - Complete cargo movement and current status dashboard for the BBIN/TIPI-BM stakeholders and Authorities

- **MIS reports:**
  - Alerts dashboard to manage alerts, and respond to deviation violations & e-seal tampering
Route Deviation Alert
Centralised portal will have following functionalities:

- Online KYC of Exporter.
- Online ordering of seal to empanelled vendors.
- Association of self sealing data by exporter on the portal.
- Bulk association using MS Excel file upload facility.
- Activity / Status Dashboard for Exporter.
- Online support, help desk and FAQ.
- Report for Exporter and Customs.

The registered exporters will get login credentials for access to the centralized portal.

Authorised officials can check the seal status using RFID readers at the port / check points.
Process flow for e-Seal

1. Request for e-seals

2. Seal Delivery

3. Self Sealing Data association

4. Customs (verification using RFID Reader)
• Registered exporters would login on Centralised portal to place order for seals.

• New exporters needs to register with IEC number and required to go through KYC process to get login credentials. Registration and KYC are one time processes.

• Exporters will fill-up required details (Quantity etc.) and place the order.
• Order placed to one the empanelled vendors would be confirmed to exporter.

• Vendor would do thorough testing & confirm all Seals would be in good condition before dispatch.

• Vendor would associate all seal serial numbers to exporter on the centralised portal before dispatch.

• Seals would be shipped to exporter.
Exporter would login to fill-up following information related to self sealing data association:

- IEC No. (would come automatically after login)
- Shipping bill No.
- Shipping Bill Date
- e-seal number (validation for valid seal number)
- Date of sealing
- Dime of sealing
- Destination Customs station
- Container No.
- Trailer-Truck Number

This self sealing data association would be stored on the Centralised Portal.

Alternatively exporter can bulk upload self sealing data from MS Excel using import utility.
• Sealed containers can be verified by the authorized officials/Custom officials at the check points using RFID Readers
• Verified Seal date-time would be updated to Centralised portal.
Technology Components for Passenger Vehicles
Electronic Ticketing for passenger vehicles

- Real Time data transfer through GPRS
- Smart Card Enabled
- Over the air configuration & update of master data, configuration data and application

Backend System enables:

- Real time ticketing information to key stakeholders
- Ticket revenue update
- Performance analysis on Route,
- Day-end Revenue reconciliation
Passenger Information System

On Board Voice Announcement

- On-board passenger information system integrated with GPS unit & CCTV
  - Voice announcement
  - Display of names of approaching bus stops

- Passenger Information Displays at Bus Stations
  - Dynamic update of the approaching buses and ETA
Supply Chain Visibility

Visibility

G-G

B-B  G-B
Our Experience - BBIN
Bangladesh- Bhutan-India- Nepal (BBIN) Trial Run (Technology Powered by DIMTS)
BBIN Flag Off Day

TRIAL RUN OF CARGO VEHICLE ON KOLKATA - DHAKA - AGARTALA route under BBIN Motor Vehicle Agreement

BBIN Flag Off Day

BBIN Flag Off Day
Web User Access Report during Trial Run

BBIN Vehicle Tracking System

- DIMTS
- MoRTH
- Transport Dept. WB
- India Police (WB Police)
- Transporter
- Vehicle Owner
- Transport Dept. Bangladesh
- Indian Customs
## Web User Access Report during Trial Run

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>User ID</th>
<th>User Name</th>
<th>No. Of Attempts</th>
<th>User Category</th>
<th>Last Login Date/Time</th>
<th>Last Logout Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1000</td>
<td>admin</td>
<td>98</td>
<td>admin</td>
<td>11/5/2015 9:36</td>
<td>11/5/2015 7:35</td>
</tr>
<tr>
<td>2</td>
<td>1007</td>
<td>Courier</td>
<td>1</td>
<td>Transporters</td>
<td>11/1/2015 8:19</td>
<td>11/1/2015 8:19</td>
</tr>
<tr>
<td>6</td>
<td>1005</td>
<td>PoliceIndia</td>
<td>1</td>
<td>Police</td>
<td>11/1/2015 14:03</td>
<td>11/1/2015 16:35</td>
</tr>
<tr>
<td>7</td>
<td>1013</td>
<td>TDBangla</td>
<td>1</td>
<td>Ministries</td>
<td>11/1/2015 8:18</td>
<td>11/1/2015 8:19</td>
</tr>
</tbody>
</table>
Route Tracking of Container Truck

Complete Route - Kolkata – Dhaka - Agartala
Route Tracking of Container Truck

- Day1: From 1\textsuperscript{st} Nov (11:00 AM) – 1\textsuperscript{st} Nov (11:50 PM)
- Vehicle Travels from Kolkata to Bangladesh Border – Benapole Police Checkpost
Route Tracking of Container Truck

Vehicle Details

Vehicle No: WB11B 9519
Date: 01/Nov/2015
Time: 07:10:34 PM
Speed: 0.00 Km/hr
Location: Benapole, Khulna Division, Bangladesh

Latest Point
Route Tracking of Container Truck

- Day2: From 2\textsuperscript{nd} Nov (12:00 AM) – 2\textsuperscript{nd} Nov (11:50 PM)
- Vehicle Travels from Bangladesh Border – Dhaka
- Day3: Dhaka - Agartala
Nabanna Bhawan – BT College Bus Stand
Benapole Check Post – Jessore Cantt Railway station Bangladesh
Jessore Cantt Railway station Bangladesh - Jhenaidah
What Role DIMTS can play

• DIMTS can play a role of nodal agency as a neutral & trusted agency which has an expertise in transit domain

• DIMTS can provide:
  ➢ **Universal backbone /Centralised Portal for** Vehicle Tracking for Cargo & Passenger Vehicles
  ➢ E-seal Alert system for **Cargo Vehicles**
  ➢ **Electronic Ticketing** (Paper Tickets & Smart Cards) for **Passenger vehicles**
  ➢ Software integration in **multi stakeholder, multi-device & multi-platform** scenarios
  ➢ **Designing specifications** (for GPS & E-seals) & data sharing protocol
  ➢ **Vendor Empanelment**
DIMTS – Value Proposition

- Interoperable
- Scalable
- Device Agnostic
- Vendor neutral
- Single window
- Single Login
- Disparate System Integration

Universal Adaptor – Universal backbone
DIMTS – Value Proposition

- Development / Integration with online vehicle permit issuance system
- Integration with Custom Authorities’ system to facilitate seamless documentation for cross border trade
- Providing a Dashboard to Customs, Police, MoRTH, Ministry of External affairs, Min. of Home Affairs & other stakeholders, as required.
- Facilitate to set up CCC (Command & Control Centre) in BBIN & TIPI-BM

Proven System & Readily Deployable
Thank You

Gopal Valecha
AVP- Business Development, IT
gopal.valecha@dimts.in
Mob: +91-99 103 50 103