Development of NCMC Compliant Automatic Fare Collection (AFC)- PoC/Pilot at BEST
## About BEST – Transport Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depots</td>
<td>27</td>
</tr>
<tr>
<td>Fleet (Single deck, Midi, Double deck operated on CNG, Diesel and Electric)</td>
<td>3198</td>
</tr>
<tr>
<td>Daily Avg. effective kms.</td>
<td>4.4 Lakhs</td>
</tr>
<tr>
<td>Passengers/day</td>
<td>32 Lakhs</td>
</tr>
<tr>
<td>Earnings/day</td>
<td>Rs.1.80 crores</td>
</tr>
<tr>
<td>No. of routes (Ordinary, Limited, Express)</td>
<td>411</td>
</tr>
<tr>
<td>Bus Stations</td>
<td>57</td>
</tr>
<tr>
<td>Bus Chowkies/terminii</td>
<td>100</td>
</tr>
</tbody>
</table>
Development of NCMC Compliant Automatic Fare Collection (AFC)

• Complete Make in India Initiative of MoUHA/BEL/NPCI/CDAC
  – Rupay Payment Scheme of NPCI
  – AFC by CDAC
  – ETIMs by BEL

• Funding of PoC/Pilot by MoUHA
AFC software features

Central System
- User Management
- Configuration Management
- Transaction Management
- Reconciliation

Depot System
- Monitoring of device health
- ETIM Issuance
- Revenue Reconciliation
- Dashboards and MIS reports

Mobile Application for QR ticketing
- Interface with existing Mobile App (if already existing)

Third party system Integration
- Vehicle Tracking System (VTS)
- Integrated Transit Management System (ITMS)
One Vision. One Goal... Advanced Computing for Human Advancement...

Top Level Architecture – Centralized AFC System

- Data flow from each and every terminal (ETIM, HHD & Fixed Validator) installed in field
- Online configuration and other controls from centralized AFC to any terminal device
- Alarm/event messages from terminals to AFC
- Centralized dashboard
- Status of Depot wise buses and terminal machines
- Txn settlement report
- Reconciliation
- Activation or deactivation of any device
- Online configuration and other controls from centralized AFC to any terminal device
- Alarm/event messages from terminals to AFC.
Top Level Architecture of Centralized AFCS

Central AFC System

The central system receives the transaction information from each Public Transport Operator and responds back on real time basis.

Station Servers

These are station level servers for data aggregation. Each tap information is sent to central servers for reconciliation purposes.

Equipment

The payment interfaces are the field components that customers interact with when making journey for the use of their fare media.

Operators

Public Transport Operators integrated with AFCS system.
Development and Proof of Concept deployment for an NCMC compliant Centralized AFC solution for Road Transport Operators

NCMC Scope of Pilot at BEST Mumbai – 2 Depot, 20 Buses and 10 Routes

- L1 certification by Dec First week (BEL)
- L2 and L3 certification by Third week of Dec (CDAC) – 3 – 4 week after L1 Certification
- Initial estimates for Go-Live are 3-6 months after field trials
Thank you!