SESSION 3: TECHNICAL PRESENTATIONS 2

Resilient Infrastructure: Building a Climate-Ready Chennai

Date: 12/06/2025

Time: IST 14:30 – 14:45 hours

Theme:

"Integrated Urban Mobility with Data Intelligence:
A Chennai Metro Model for Safe, Seamless Transportation"

Venue:

Hotel Hilton,
Guindy,

Chennai 600 124

GUEST LECTURE

Dr. K. P. Mani,

Field Specialist (IT & AFC),

Chennai Metro Rail Limited

CHENNAI SAFE CITY SUMMIT 2025
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Chennai Metro Rail

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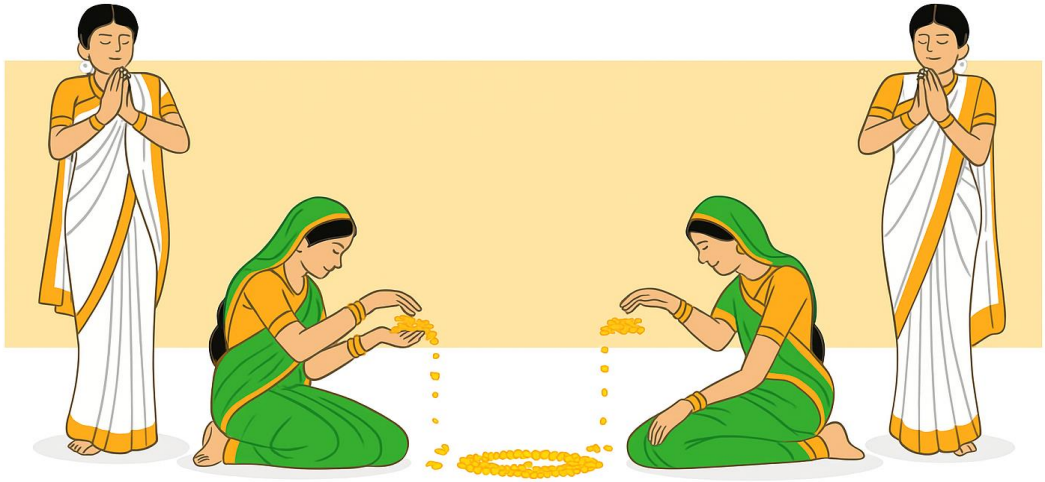
to the
CHENNAI SAFE CITY SUMMIT 2025



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Safety is not what the eye sees…

Core Safety Message:
"True safety in modern transit isn't just about protecting passengers from known risks—it's about preventing unknown ones through intelligence, design, and digital integration."

Can every commuter, from school children to senior citizen safely reach their destination without disruption?

Urban mobility is fragmented, unsafe in gaps.

Chennai's Mobility Vision vs. Ground Reality

- Chennai's mobility vision calls for integrated MaaS – steeped in real–time subscriber intelligence and citywide sync.
- Yet each transport mode still operates in isolation, with no live integration, resulting in passenger exclusion and feeder chaos.

Mobility vision exists – but systems still travel separate*ly*

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Chennai's Mobility Vision vs Ground Reality.

Vision 2025: Integrated, sustainable public transit network

Today: Congested, unreliable access to public transport

Vision: Congested, unreliable access to public transport

The Challenge: Disconnects in Urban Travel

Know the Movement

Real-time journey planning and tracking

Journey Planner

Predict the Problem

Anticipate Delays and disruptions.

Heavy Traffic Detected

Expected delay: 15 minutes.

AI-Driven Predictions

Design for Seamless Flow

Smart Integrated Transport

Know the Movement – Data on Passenger Flow

Purpose: Utilize data to plan efficient multimodal journeys—know where and when passengers move

Key Elements:

- Travel patterns
- Peak hours
- Preferred modes

Goal: Ground MaaS (Mobility as a Service) with real passenger insights

INTEGRATED URBAN MOBILITY WITH DATA INTELLIGENCE:
A CHENNAI METRO MODEL FOR SAFE, SEAMLESS TRANSPORTATION

KNOW THE MOVEMENT

Data on Passenger Flow

PREDICT THE PROBLEM

Data for Risk Forecasting

DESIGN FOR SEAMLESS FLOW

Data-Driven Integration

Case Study: Gate Delay with NCMC

Case Study: Gate Delay for NCMC Cards

- **Root Cause:**
  Lag in transactions while processing NCMC cards at AFC gates
- **Impact:**
  Passengers queue up, causing concern

Coach Density Prediction Innovation

SMART BOARDING WITH COACH DENSITY DETECTION

TRAIN ARRIVING –
COACH 1: LOW DENSITY ✓
COACH 3: FULL ✗

AFC SYSTEM + CCTV +
WEIGHT SENSORS
→ AI MODEL TRIGGERS INFO

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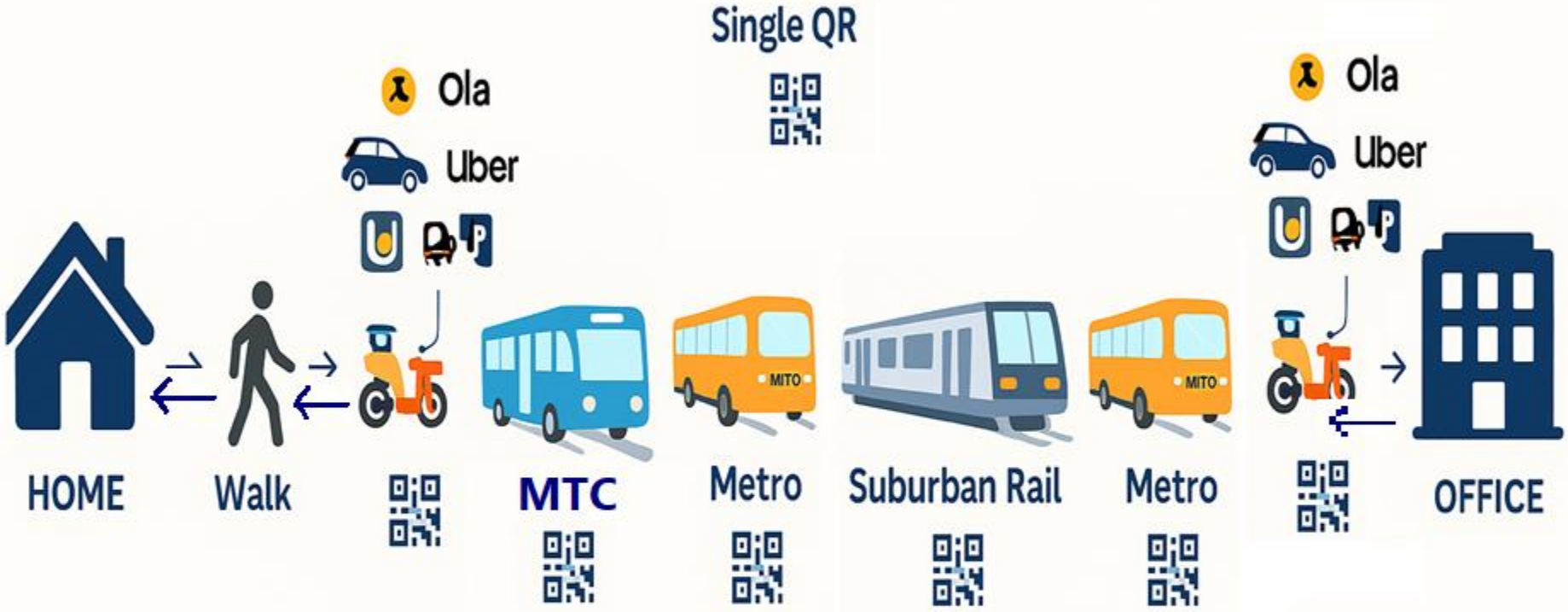
Visualizing the Seamless Urban Journey – One Ticket, Many Modes



An Integrated Journey Experience Enabled by Predictive Data & Smart QR Systems

“What UPI did for payments, QR can do for mobility.”

DESIGN FOR SEAMLESS FLOW

Know the Movement:

Harnessing data to understand travel pattern

Integrating Data Sources:
Analysing Metro card swipes, feeder demand, and last-mile pickups.

Whole Journey Visibility:
Mapping passenger flows to anticipate travel needs

Responsive Planning:
Adjusting services to match peaks and gaps.

Integration: Data Integration

Closing Summary & Call to Action

🎯 LET'S BUILD SAFE, SEAMLESS, AND DATA-DRIVEN URBAN MOBILITY 🌐

🧠 Key Insights:

🔹 Safety is not just infrastructure — it is intelligence. 🧠🛡️

🔹 AFC data is more than fare collection — it's mobility insight. 📊📱

✅ To Combine:

✔️ Smart Ticketing 🎫

✔️ Seamless Integration 🔁

✔️ Passenger-Centric Experience 👩‍👩‍👧

✔️ Real-Time Analytics ⏱️📡

📍 Final Takeaway:

"Let's turn movement into insight — and insight into safety." 🚦🔍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THANK YOU