

## Smart City Ahmedabad Development Limited (SCADL)

# A seamless, safe and reliable intelligent transport management system

## The Customer

As one of India's fastest growing scientific and industrial hubs, the city of Ahmedabad was among the first 20 candidates selected for the government's Smart City Mission. Recognising the vital importance of efficient public transport, Smart City Ahmedabad Development Limited (SCADL) partnered with NEC to upgrade the manually operated, often erratic bus transit infrastructure with a seamless, safe and reliable intelligent transport management system.

## The Challenges

"Improving public transport is integral to smart city success. It is costly, but transferring passengers at attractive prices enables education, employment, and ultimately safe movement," advocates SCADL CEO, Rakesh Shankar.

Ahmedabad's two major bus services Bus Rapid Transit (BRT) and City Bus AMTS operate 1,000 buses transporting 0.8 million passengers daily across the city. Despite attractive ticket prices, the bus services were underutilised due to customer concerns over quality.

The previous manually operated system suffered from poor route planning, a lack of advertised bus schedules, bus-bunching, excessive waiting time, rough driving, stop skipping, and inconvenient or inconsistent cash collection.

## Overview

### Industry

- Transportation

### Challenges

- Address inefficiencies and poor customer experience of manually operated bus transport systems
- Develop a software-based, cashless bus transport system
- Improve bus service visibility to reduce operating costs and improve scheduling

### Solution

- Implemented an intelligent transport management system to support seamless, safe, fast, and efficient bus services
- Develop IoT-driven automated fare collection, GPS-enhanced vehicle location, passenger information, vehicle and depot management systems
- Analyse and interpret scattered data to optimise resources and improve customer satisfaction

### Results

- Improved bus service efficiency and commuter travel experience
- Identified popular and problem route areas, future investment requirements and opportunities
- Paved the way for an integrated multi-modal smart transport system and operating platform

A lack of transparency also resulted in higher operating costs and customer complaint handling. The city authorities were keen to upgrade to a cashless, software-based bus service system backed by advanced ICT to help reduce expenses and problem-response time. “Smart transportation must offer ease of use for the traveller, transparency of services, and the ability to plan. We needed to understand entire routes and behaviour, so we could deploy the right resources, add new vehicles, and develop seamless transport services.”

## The Solution

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SCADL partnered with NEC to implement an intelligent transport management system (ITMS) that improves the efficiency of BRT and AMTS bus services using a cashless open-loop card system. In addition to automated fare collection, the one-stop, IoT-driven system manages bus resources, bus maintenance, transport information, and personnel, it also collects and analyses data to help optimise resources and boost ticket sales.

### The ITMS incorporates five smart transport sub-systems:

- 1. Automated Fare Collection Service (AFCS):** Quick and secure cashless payment via prepaid RuPay card or smartphone ensures greater convenience, passenger safety and ridership visibility.
- 2. Automatic Vehicle Location System (AVLS):** Real-time visualisation of vehicle location via fitted GPS enables the city to calculate estimated time of arrival and support bus operations from a central command centre to adhere to a planned schedule.
- 3. Passenger Information System (PIS):** Provide real-time bus information via mobile app, website and in-station boards to enable passengers to plan their route and estimate waiting and arrival times. Route and bus stop information is also provided via on-board displays and announcements.
- 4. Vehicle Planning Schedule and Dispatch System (VPSD):** Bus routes and schedules optimised by analysis of bus travel performance and traffic volume.
- 5. Depot Management System (DMS):** Allocate and optimise crew and overall bus operations by automating the management of vehicles, fuel, inventory, personnel, and vehicle maintenance.

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**Rakesh Shankar**  
SCADL CEO



Data from each service is collected and analysed uniformly in a command control centre against key performance indicators to create more efficient and dynamic bus service operations, and a smarter, safer travel experience for commuters, across the ticketing, in-station and in-journey stages.

## The Results

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“Real-time visualisation of running buses and fare revenue enables operators to easily detect irregularities and swiftly determine countermeasures,” explains Shumpei Fujii, Head of the Transportation Business Unit at NEC Technologies India. Incident management systems also enable operators to track incidents such as equipment failure and bus accidents throughout the incident lifecycle.

“This software-based system enables us to remunerate service contractors using concrete parameters such as total kilometres driven, driver behaviour, safe driving, route adherence. New scheduling systems are already generating sizeable monthly savings,” says Shankar.

SCADL is now looking at developing multi-modal travel services spanning BRT, metro, railway, monorail, taxis, etc. and offering seamless services supported by integrated operation and ticketing platforms. Shankar believes, “NEC has depth, tremendous transport products and experience of complex projects in Tokyo and elsewhere.

Both partners share the same fundamental measure of that success. “Throughout this project, NEC Technologies India orchestrated a group of 20 vendors and partners scattered worldwide because our primary motivation is to build synergies and leverage our transportation solutions portfolio and ICT to create advanced social infrastructure, and improve India’s society,” states Fujii.



Talk to us about your needs today. Contact us at [marketing@nec.co.id](mailto:marketing@nec.co.id)

#### **About PT. NEC Indonesia**

NEC first established its Jakarta representative office in 1968. Through the years, PT. NEC Indonesia recognized the importance of instituting telecommunication infrastructure for the country and has introduced several NEC technologies and solutions. This has resulted in PT. NEC Indonesia achieving the market leader position of being a total solutions provider for the Indonesian telecommunication industry. Today, with its headquarters in Jakarta and 20 other project offices located in various parts of Indonesia, PT. NEC Indonesia continues to play a significant role in providing total telecommunications and IT business solutions to its customers in the government and enterprise business. For more information, please visit <https://id.nec.com>



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