Realization of Virtually ”Zero CO2 Emission Mobility”

Zenmov Inc.

CEFIA
25 August, 2023

Theme of ASEAN Plan of Action for Energy Cooperation (APEC) 2016-2025 Phase Ⅱ

Our activities contribute to Action Plan 4, pursuing energy efficiency in transport sector.

OBS 4. Pursue Energy Efficiency in Transport Sector	
Action Plan 4.1	Conduct capacity building on vehicle fuel economy with DPs and IOs to promote policy and target of the AMS
Action Plan 4.2	Conduct information sharing on best practices for EE&C in transport

Zenmov Inc.

We develop IT solutions that power the public transportation and the shared mobility.

Zenmov Inc.

- Developing IT Service for Smart Transportation
- Headquartered in Tokyo

100%

Subsidiary

Zenmov Philippines Inc.

S M O C (Smart Mobility Operation Cloud)

For sharing services

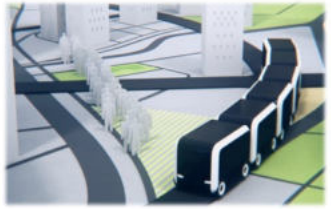
〈Car sharing〉

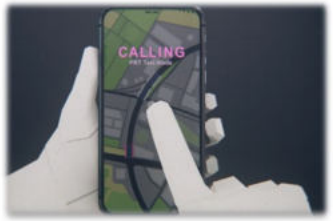
〈Micromobility〉

〈Company car rental〉

〈Company car sharing〉

For transportation operators



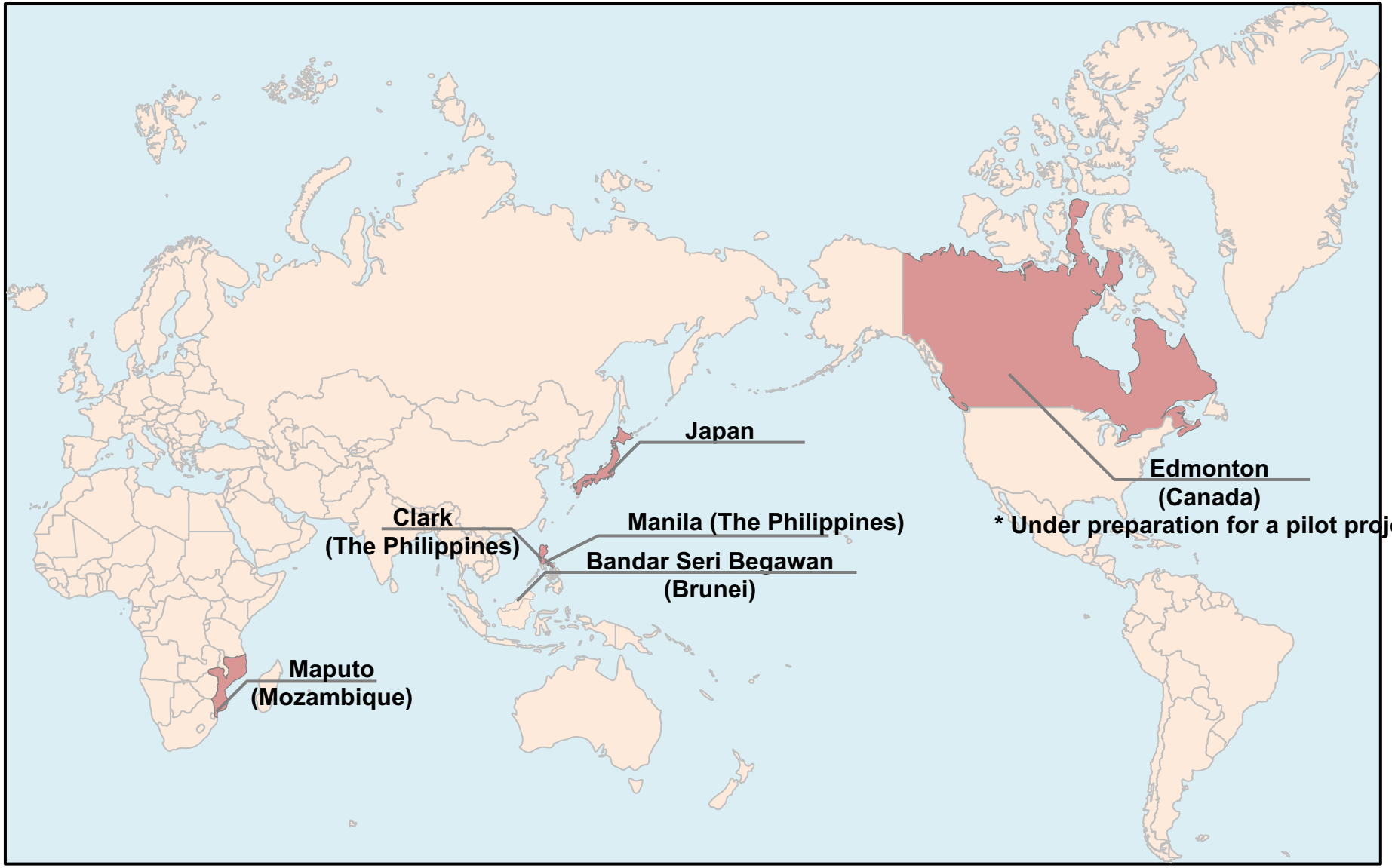


PRT（Primary Rapid Transit）

Transportation of goods and services

〈Logistics〉

Current Areas of Our Projects



Our Theme = Congestions

Our Theme = Imbalance of Demand and Supply

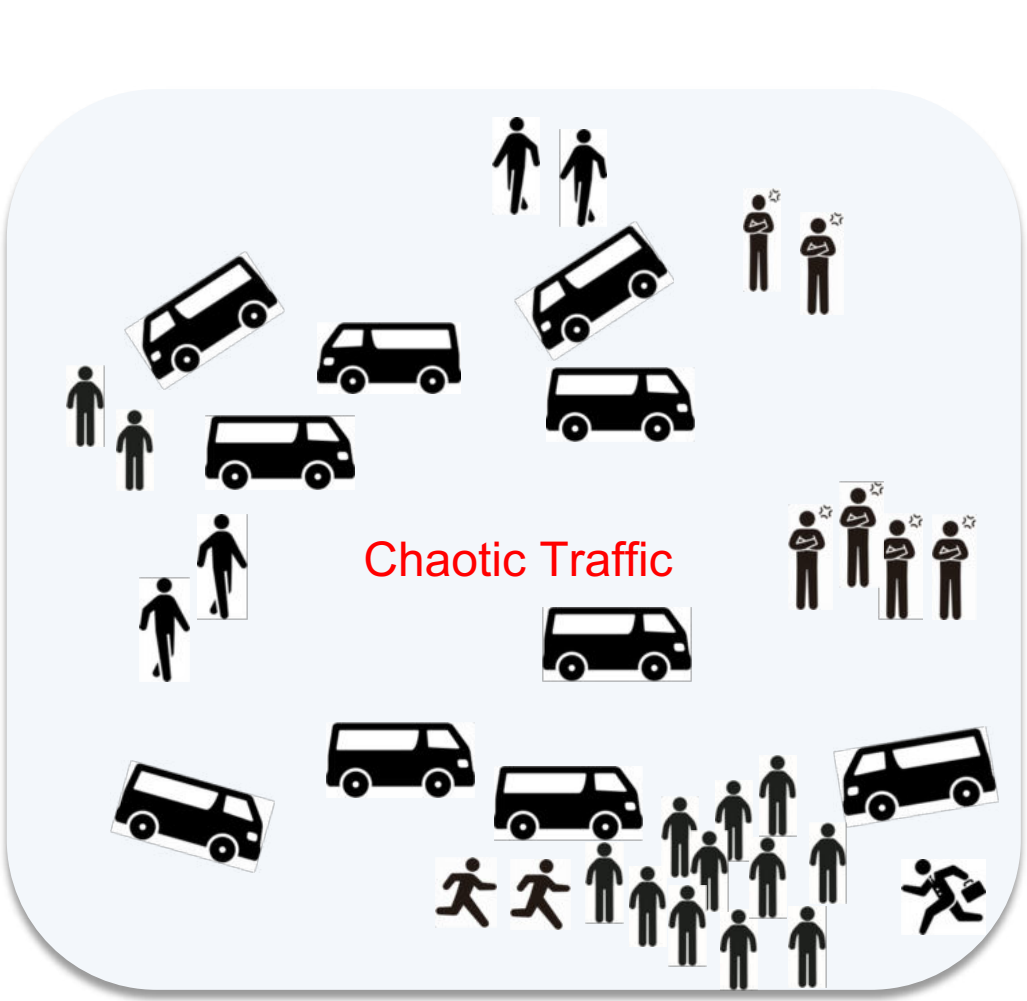
Zenmov

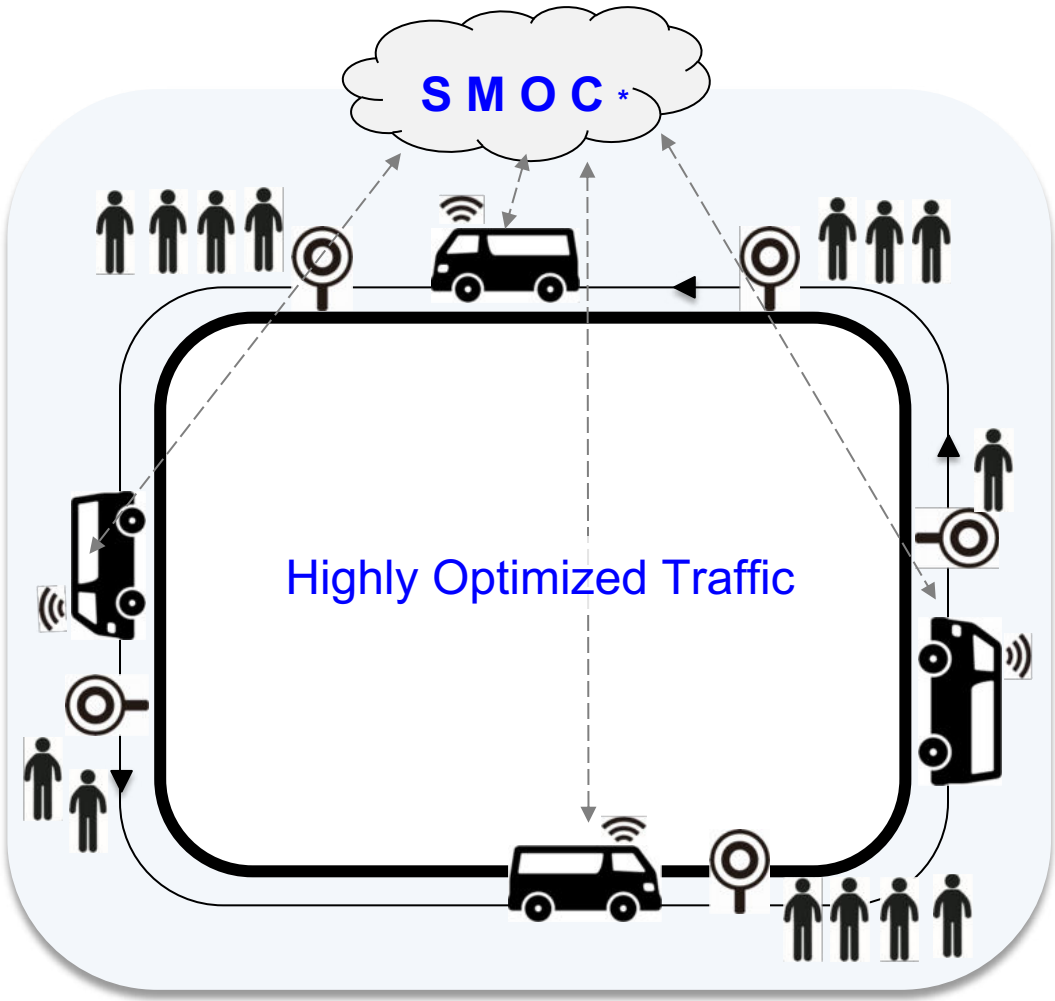
Long Line

Vacant

Value Added Approach Brought by Zenmov

We bring a discipline in the public transportation by using IT called SMOC.





*SMOC : Smart Mobility Operation Cloud

A Software Organizes Operation and Hardware

Operation Management & Fleet Management for the public transportation

SMOC (Smart Mobility Operation Cloud) provided by Zenmov

Operation Management

- Optimized Scheduling (AI schedule creation)
- Vehicle Interval Control (Optimized vehicle interval)
- Performance Analysis
- Operation Mode Control (Fixed Route, OnDemand, Logistics)
- Passenger Benefit (e.g. ETA)

Fleet Management / Device Management

EV/FCV/Gasoline/Diesel with drivers	Self-Driving Car	Smart Pole - Monitoring safety and collecting transportation demand data	Drone - Monitoring operation and collecting transpiration demand data	Personal Mobility (e.g. E-Bike)




Features of SMOC

Three major features to improve the operational efficiency of transportation

Optimized Scheduling

Issues = Supply-Demand imbalance

- Buses don't come to people who want to move.
- Lots of buses exist where there is no one to move.

Long Line

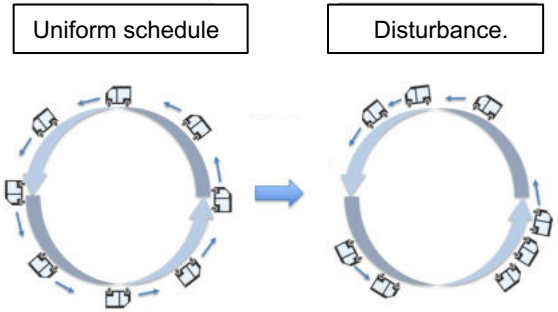
Vacant buses

Solutions = Introduction of an AI-based optimal vehicle dispatch system

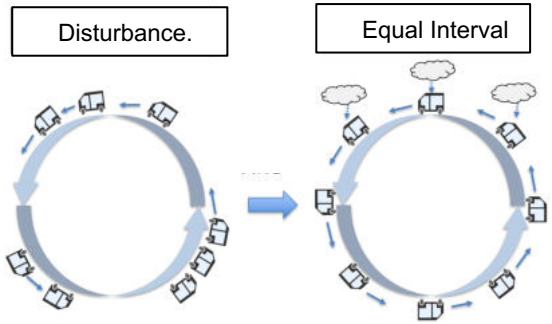
- Schedule according to travel demand
- Dispatch vehicles where they are needed

Vehicle Interval Control

Issues = Disturbances (traffic jams) occur between vehicles



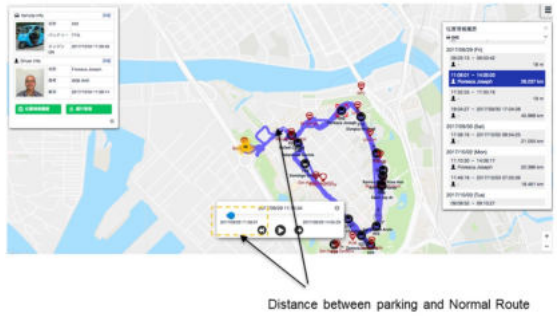
Solutions = Introduction of vehicle adjustment function



Drivers' performance monitoring

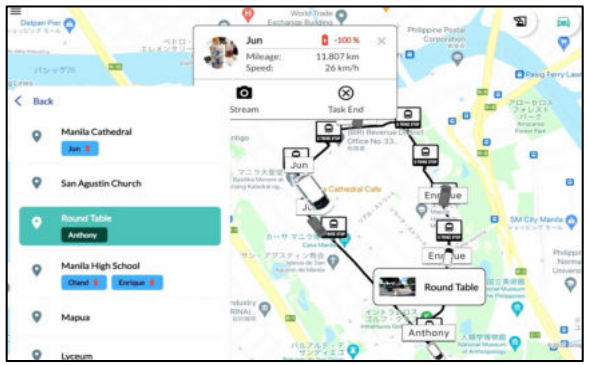
Issues = Driver performance is unknown

Solution = Visualize and improve driver productivity



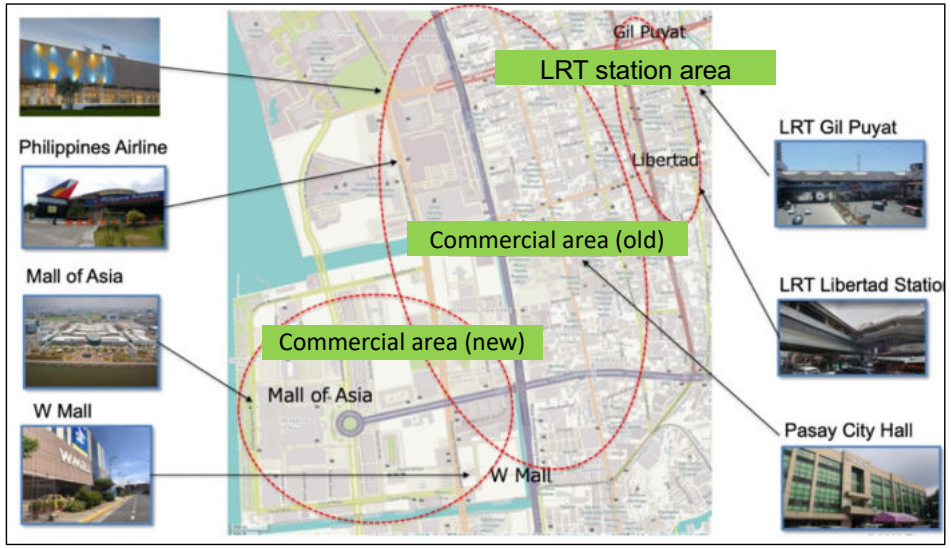
Our Achievements in the Philippines

■SMOC Achievements (1) Intramuros, Metro Manila



Convenient transportation services created demand for mobility and also created jobs.

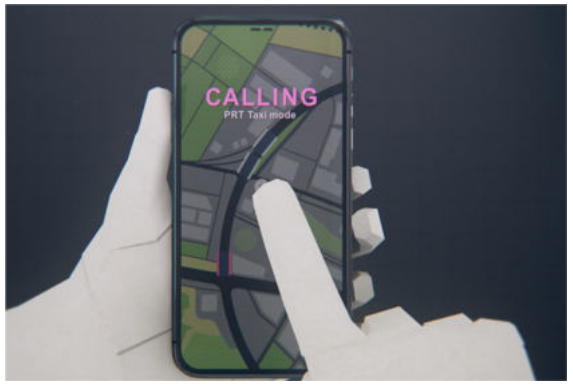
■SMOC Achievements (2) Pasay city

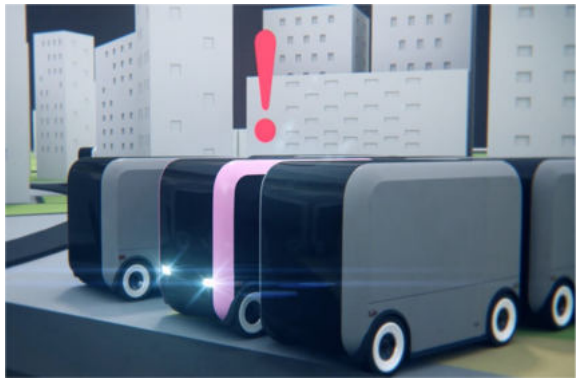


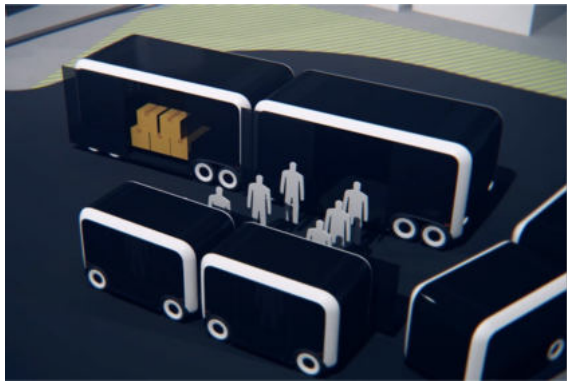
Operation of a line connecting the railroad station (LRT) with new and old commercial areas.

For New Cities

PRT（Primary Rapid Transit）



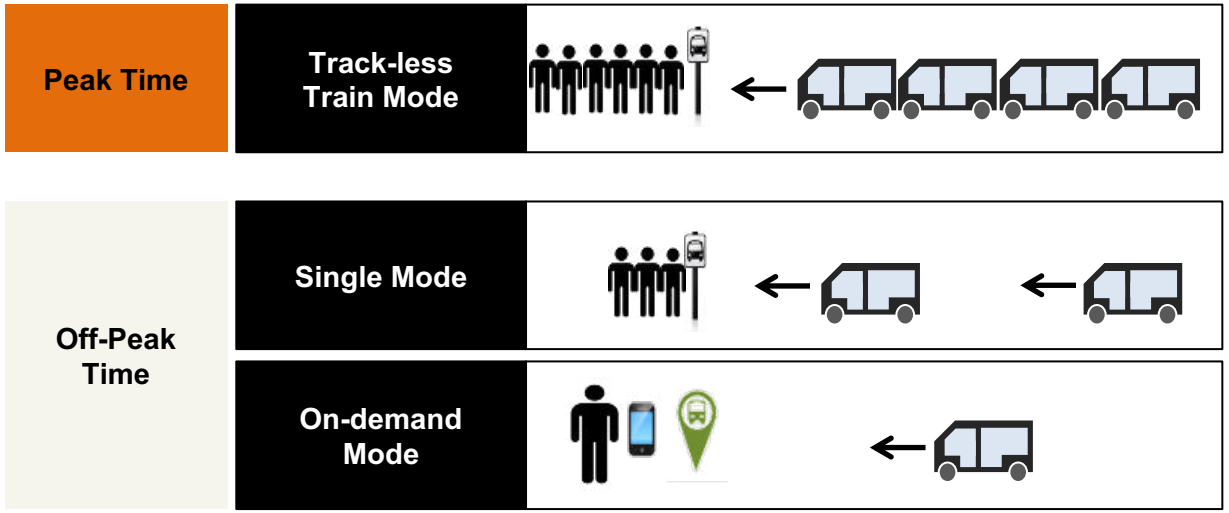




Reduces traffic congestion and saves energy

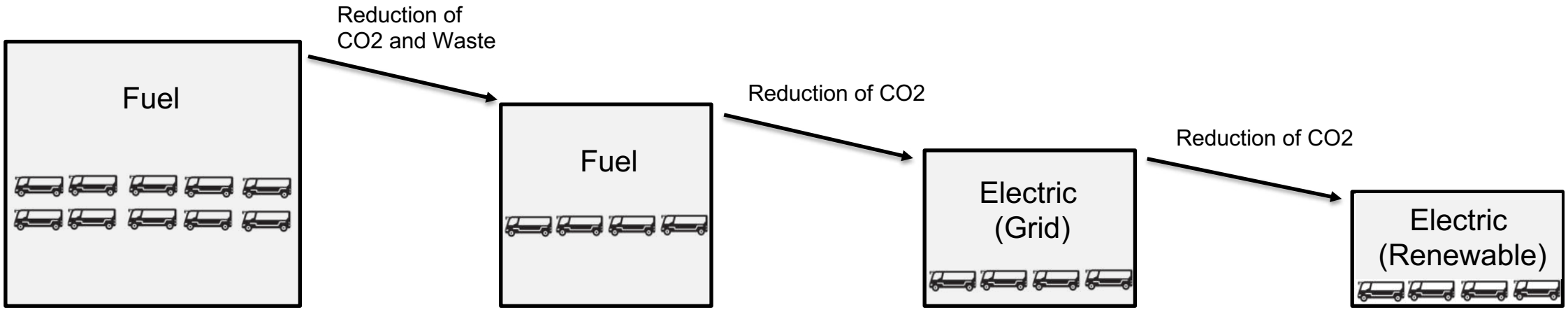
Contributes to improved convenience

A single eco friendly vehicle can perform multiple roles.



Three Steps to Realize Virtually "Zero CO2 Emission Mobility"

Step1 (Contribution by IT)	Step2 (Contribution by Vehicle)	Step3 (Contribution by Renewable)
Reducing the number of vehicles by improving operational efficiency	Fuel to Electric (Grid)	Electric (Grid) to Electric (Renewable)



An Ongoing Project in Clark Area in the Philippines

- G2G project between the Philippines and Japan
- NEDO, a Japanese semi-government organization, supports this project
- This transportation is monitored and managed by SMOC

Contribution of Project Implementation
- **CO2 Reduction Target = 714t-CO2/year**
- **CO2 Reduction Effect = 94.3% Reduction**