What comes next after MLFF?

Vice President & CTO, Richard Wu

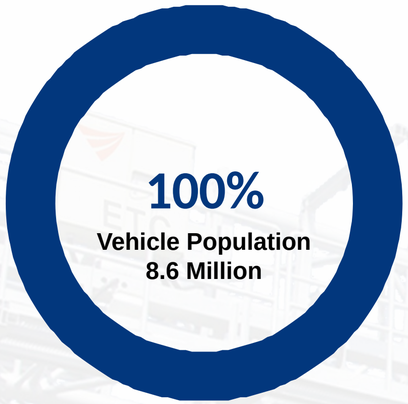


Agenda

- Taiwan MLFF Status
- From MLFF to Smart Highways
- Road User Charging

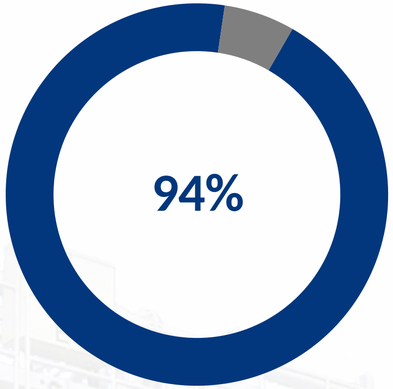
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Taiwan MLFF Current Status



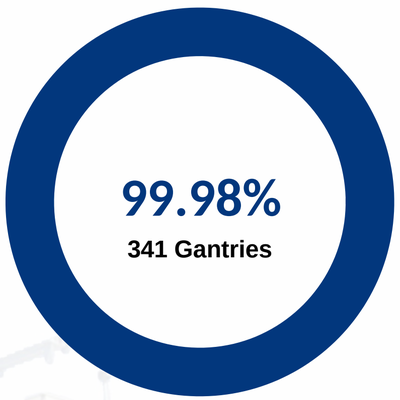
ETC Usage Rate





RFID Utilization Rate





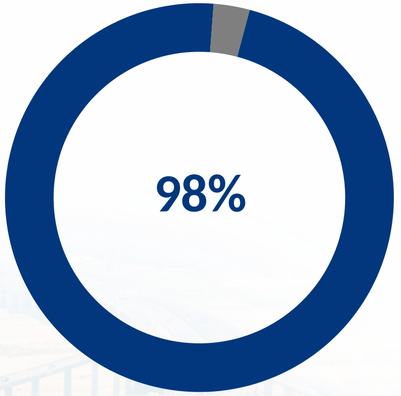
Vehicle Detection Accuracy Rate





Tolling Accuracy Rate





Customer Satisfaction Rate



Government Annual Operation Audit : Excellent

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Final Evidence To Identify Vehicles on the Road

Tolling Technology

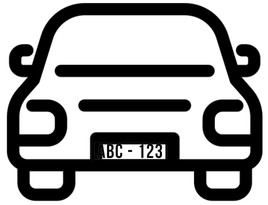
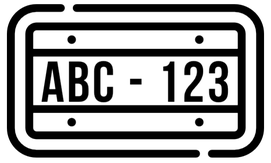


Photo Image



License Plate

+



RFID



GNSS



DSRC ...

Vehicle Recognition



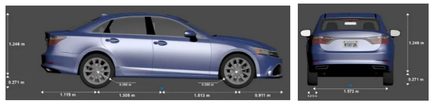
Make



Model



Color



Dimension



License Plate Color

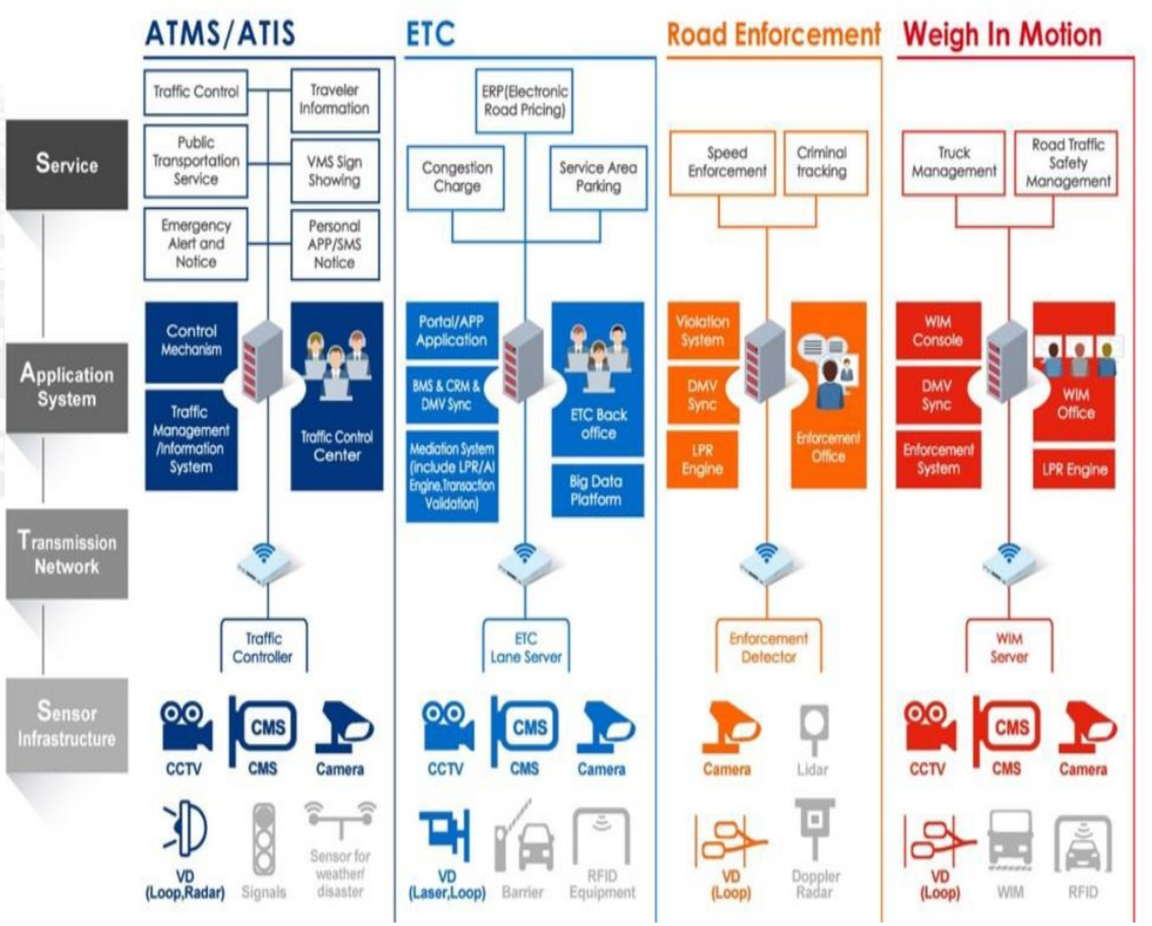


Axle

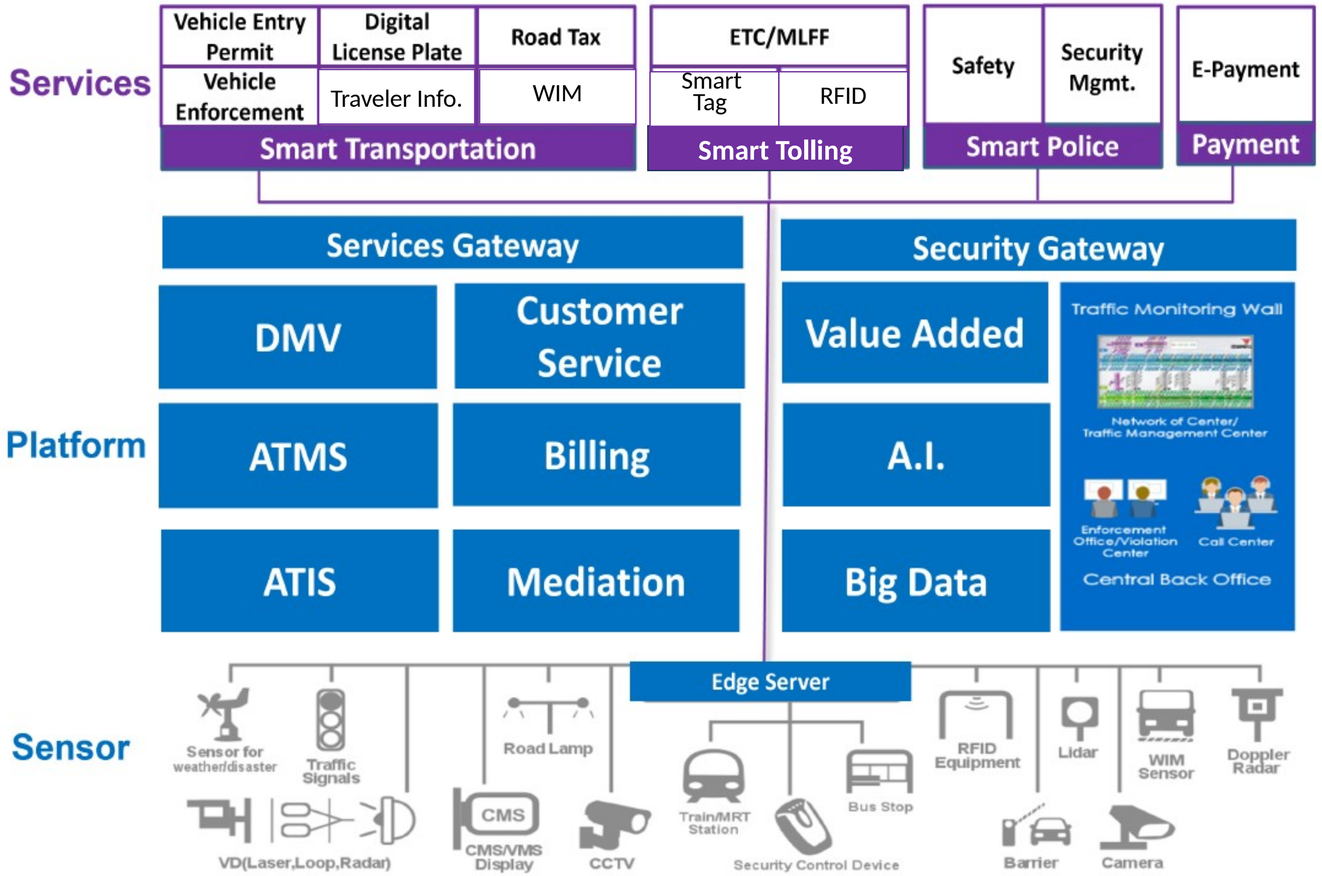
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Transformation of Road Infrastructure & Operation Framework

Conventional Highway

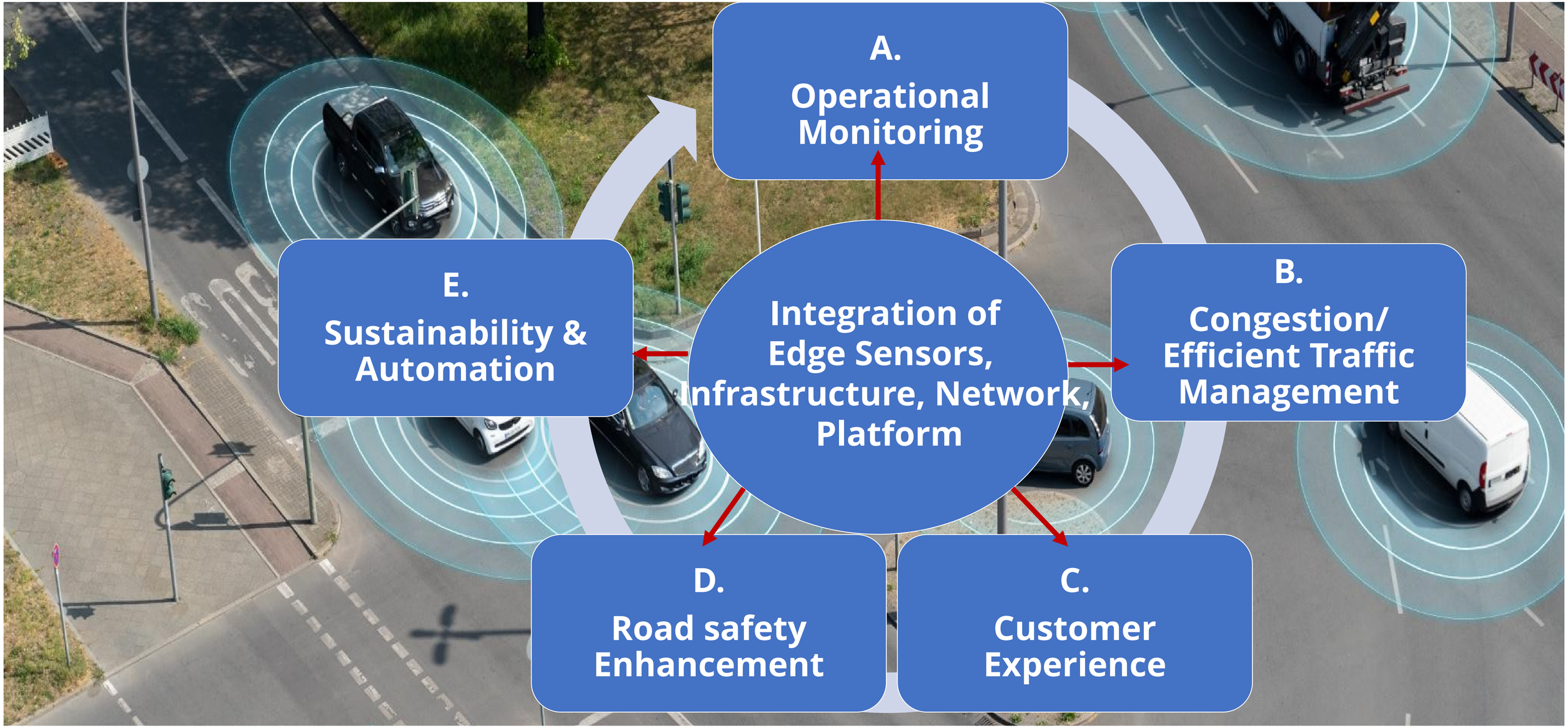


Smart Highway



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Transformation of Road Infrastructure & Operation Framework



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Sustainable & Resilient Smart Highways

Combine AI, IOT, Big Data, Communications and Weather Information

GOV IoT Data

Rainfall, temperature, humidity, wind Speed (velocity), earthquake, and air quality (particulate matter, PM 2.5)

Self-built Sensors

Equipment vibration, equipment system log, Maintenance data, replacement quantity, replacement time, duration of use, micro weather station.

Climate Big Data

Electric potential sensing, lightning observation, thunder strike detection, heavy rainfall monitoring.

Data Filtering and Cleaning → **Data Correlation Analysis** → **AI Predictive Model** →  **MLFF Tolling Sites**

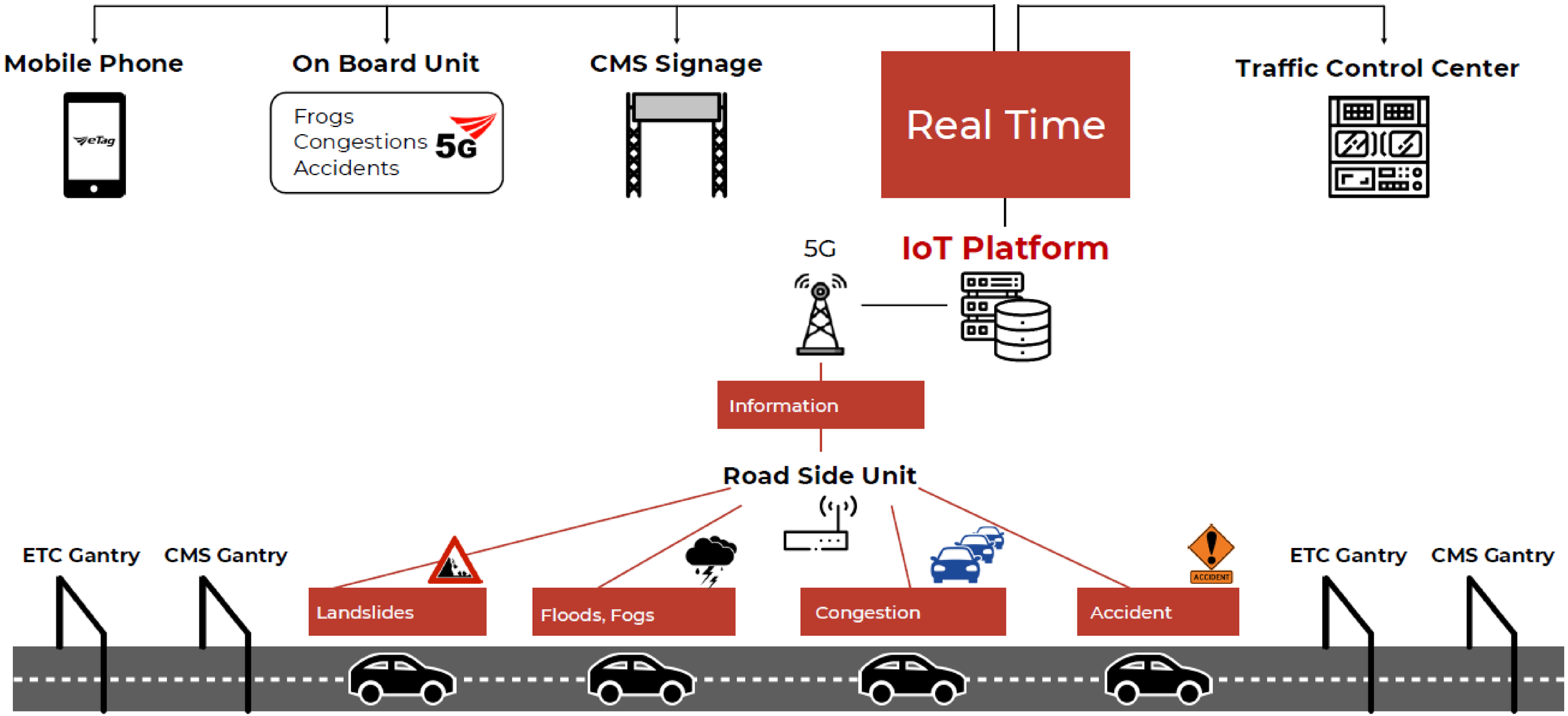






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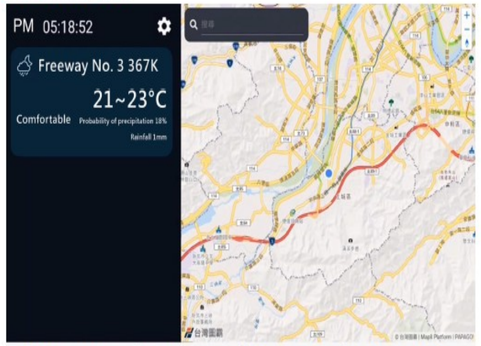
CV2X Future Smart Highway



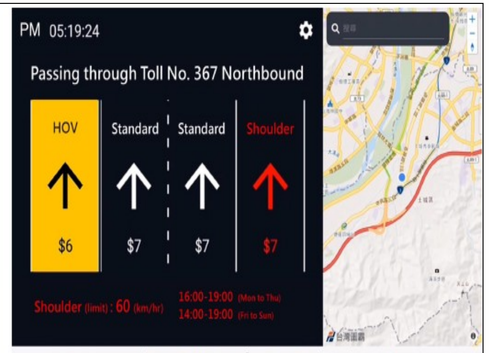
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CV2X Future Smart Highway

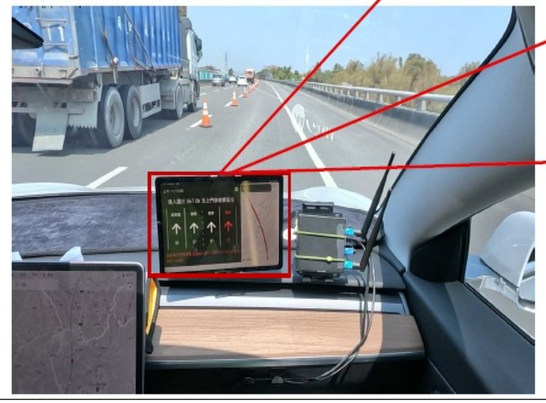
CV2X 5G Taiwan Cases

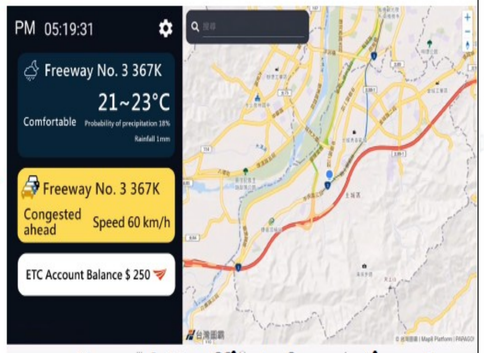


Weather Information & Navigation



Lane & Toll Rate Information





Speed, Traffic Information & Account Balance

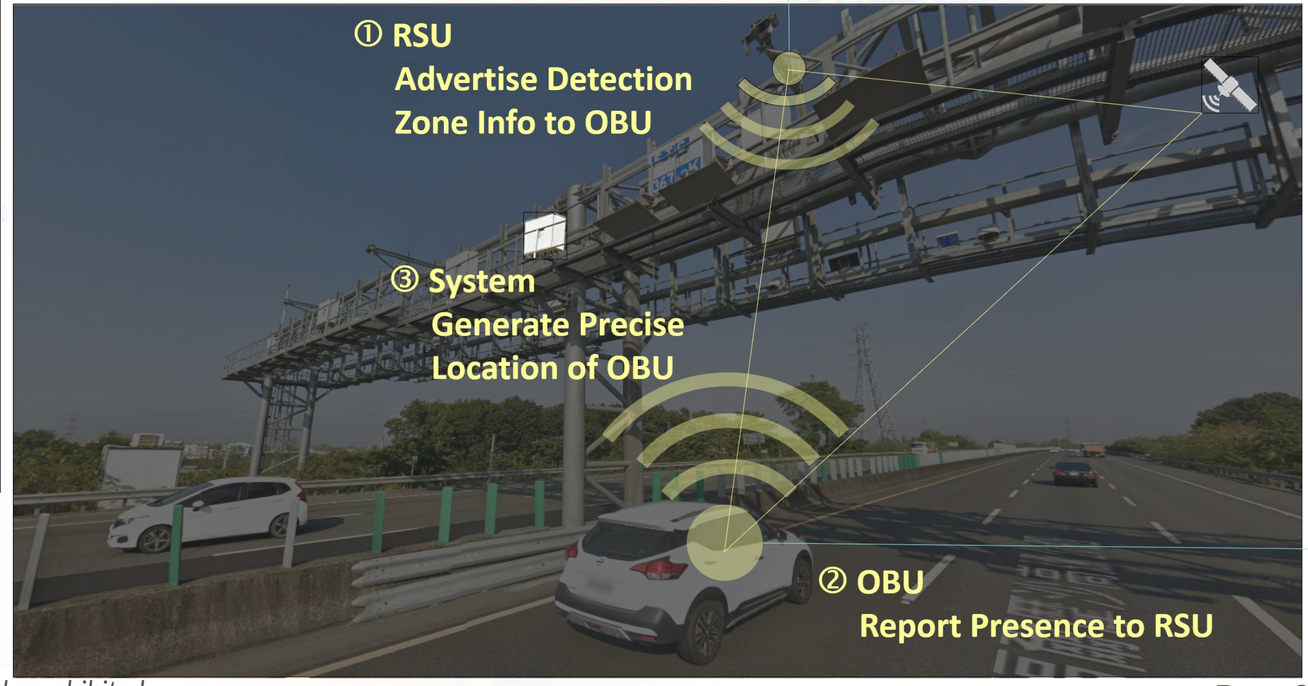




5G OBU

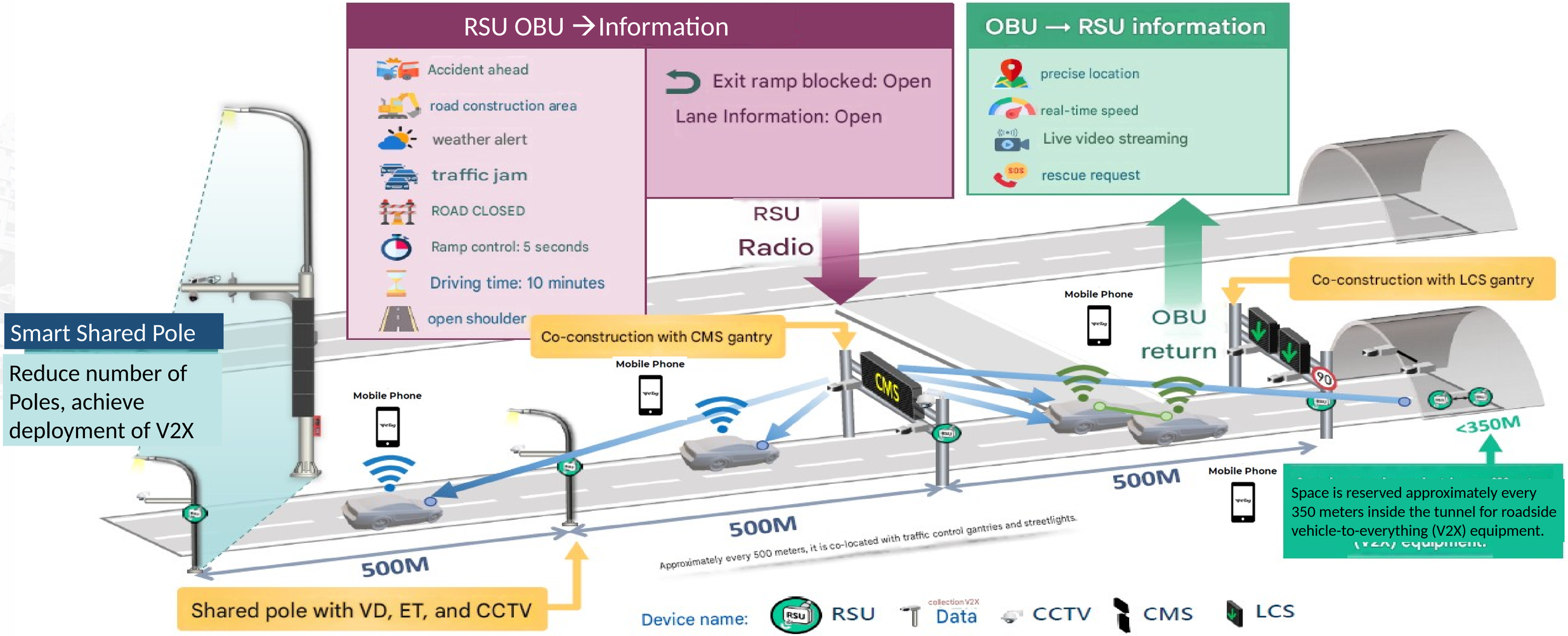


5G RSU



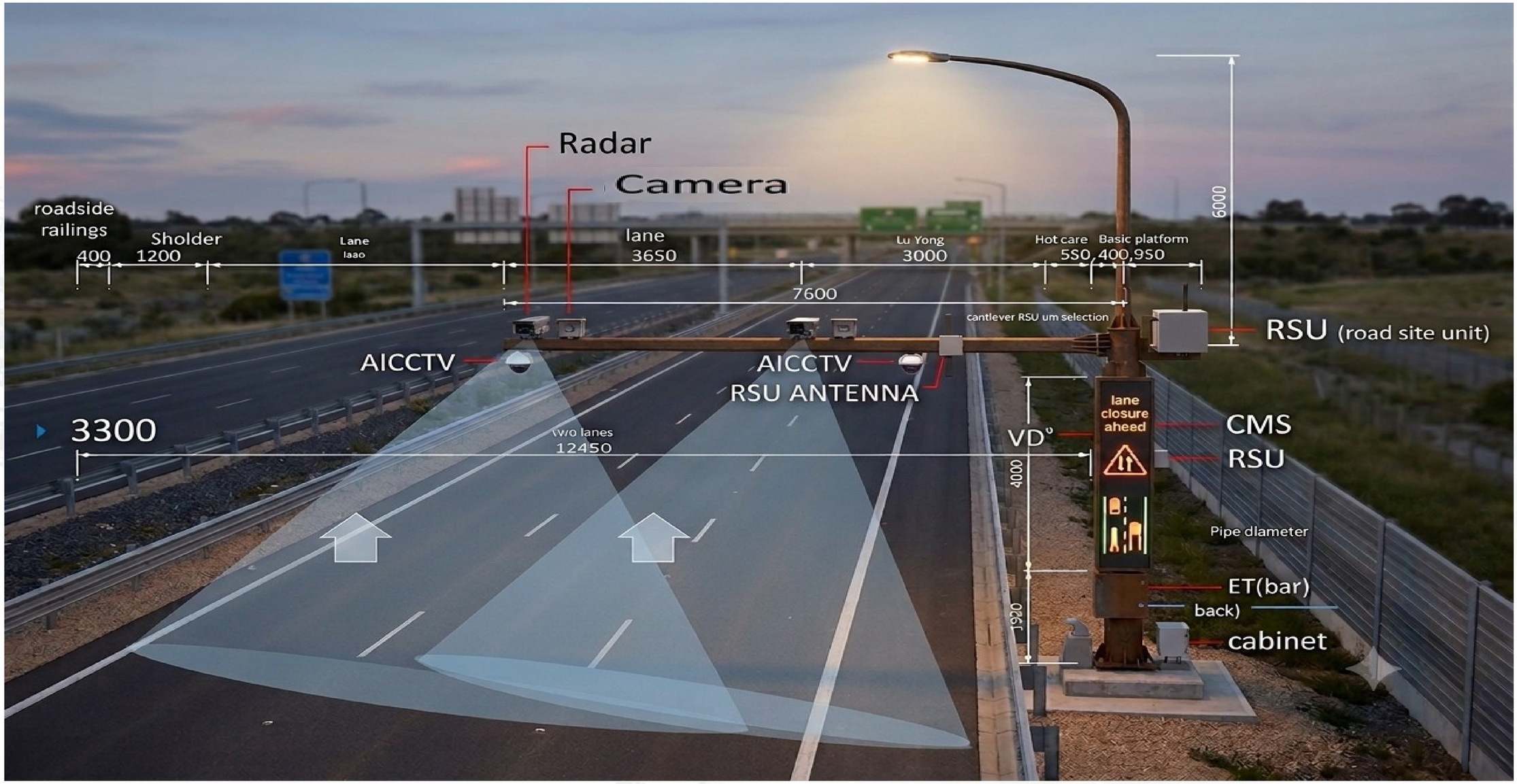
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CV2X Future Smart Highway



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Smart Shared Pole Concept Design



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Cost-effective Strategy & Benefits



Cost-effective Smart Highway,
Leverage existing assets

INTEGRATED DESIGN

SCALABLE ARCHITECTURE

PHASED DEPLOYMENT

AVOID DOUBLE INVESTMENT

EFFECTIVE MANAGEMENT

LEVERAGE CURRENT ASSETS

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Road User Charging

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From MLFF to Traffic Demand Management to Road User Charging



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Global Challenges



Fuel Tax



Congestions



Net Zero Goal

Asia Pacific RUC Alliance

Established the Asia-Pacific Road User Charging Alliance



ITS TAIWAN

ITS INDIA
Shaping the Future of Mobility

ITS Thailand
สมาคมระบบขนส่งและจราจรอัจฉริยะไทย

ITS New Zealand

ITS Singapore

ITS MALAYSIA

its australia

2026 ITS WC

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Future Outlook

Vision	Net Zero & Vision Zero
ITS Objective	Go Green, Go Smart, Go Safe

AP RUC Goal	Share Experiences	Foster Innovation	Regional Collaboration

ASIA PACIFIC ROAD USER CHARGING ALLIANCE

Collaboration Through Asia Pacific Road User Charging Alliance

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Topics to Be Addressed

Regulation & Policy	Public Communication & Public Acceptance	User Experience
Sustainability & ESG	Business & Finance	Operation & Enforcement
Cybersecurity & Privacy	Standards & Interoperability	Technology & Architecture

2026 ITS World Congress Executive Session :

A New Paradigm for ITS: Driven by the Infrastructure Needs of RUC (Road User Charging)



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