Autonomous Mobility for Public Transport

Needs, Realities and Practical Pathways in Asia-Pacific

Yuhan Xiao,Ph.D, Training and Research Manager, UITP Asia Pacific

AVS CREATE PUBLIC VALUE ONLY WHEN THREE SYSTEMS MATURE TOGETHER

The question is not only whether the vehicle can drive — but whether the service can operate reliably every day.

01

TECHNOLOGY

Safe performance within a clearly defined ODD

02

OPERATIONS

Daily supervision, recovery and passenger support

03

GOVERNANCE

Clear approval, accountability and public objectives

There is no single Asian model to copy: readiness depends on local needs, regulation, infrastructure and operator capability.

1

TESTING & FEASIBILITY

Closed sites, test roads and regulatory learning

→

2

CONTROLLED PUBLIC SERVICE

Fixed routes, safety operators and selected users

→

3

EARLY SCALING

Driverless exploration, paid services and wider operating areas

UITP

STRONG USE CASES START WITH A SERVICE GAP

SINGAPORE

Feeder & first/last mile



Connect AV services to the wider public transport network. Punggol Ai.R, Singapore

Korea

Night-time bus service



Begin with a specific time-based service gap.Naeseong–Jungdong BRT

JAPAN

Regional mobility



Address driver shortages, ageing and service continuity.Eiheiji Town

GUANGZHOU & SHENZHEN

Complex urban operations



Scaling requires operators, regulation and operational infrastructure.Guangzhou Bio Island / Shenzhen Qianhai

Shared principle: start from the service gap — not from the availability of a vehicle.

UITP

VEHICLE READINESS IS NOT SERVICE READINESS

BEIJING OPERATOR INPUT

≈ 2×

Reported vehicle cost compared with a conventional bus

Lower labour cost is not automatic when remote and field support remain necessary.

APPROVAL	Safety certification, liability and insurance
OPERATIONS	Remote supervision, dispatch and roadside recovery
INTEGRATION	Routes, stops, fares, control centres and passenger information
PEOPLE	Maintenance, safety, digital operations and passenger assistance
DATA	Cybersecurity, reporting and software-change oversight

Vehicle readiness ≠ service readiness

A STAGED PATHWAY TO SCALE

1
DEFINE
Mobility need

→

2
BOUND
Use case + ODD

→

3
PILOT
Safety + operations

→

4
EVALUATE
Evidence + public value

→

5
DECIDE
Scale, redesign or stop

ILLUSTRATIVE FIRST PILOT

A fixed feeder connecting a rail or bus hub with a hospital, campus or new district — beginning with a mapped route and safety operator.

Scale only when evidence supports safety · reliability · passenger use · manageable interventions · total service cost · network integration

ASIA-PACIFIC AUTONOMOUS VEHICLE WORKING GROUP (APAVWG)

Industry Workshop & Technical Study Visits

27–28 OCTOBER 2026 | GUANGZHOU · SHENZHEN











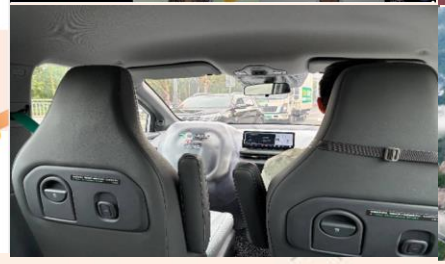





KINDLY SUPPORTED BY UITP MEMBERS

UITP ADVANCING PUBLIC TRANSPORT

Thank you!

Yuhan.xiao@uitp.org