



ITS Driving for a Better Life
智能交通赋能幸福美好生活

Regional Leaders Forum

Safer, Better, Smarter Latest ITS Developments in Hong Kong

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Hong Kong Factsheet



1,110 sq-km
Land Area
280 sq-km
Built-up Area

7.40M
Population
70%
Within 500m of Rail Station

3.81M
Labour Force

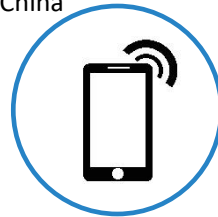
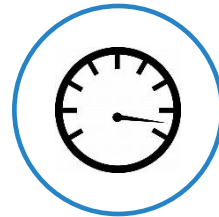
28%
Population over 60

10.52 M
Daily PT Passenger Trips
90%
Daily Passenger Trips on PT

0.92 M (-99%)
150M in 2019
Annual Visitor Arrival
71%
Visitors from Mainland China

2,193 km
Length of Public Road
+5%
Growth in past 10 years

818,000
Total Licensed Motor Vehicles
+40%
Growth in past 10 years



770,000
Total Parking Spaces
+1%
Annual Growth in past 2 years

17,800
Road Traffic Accidents

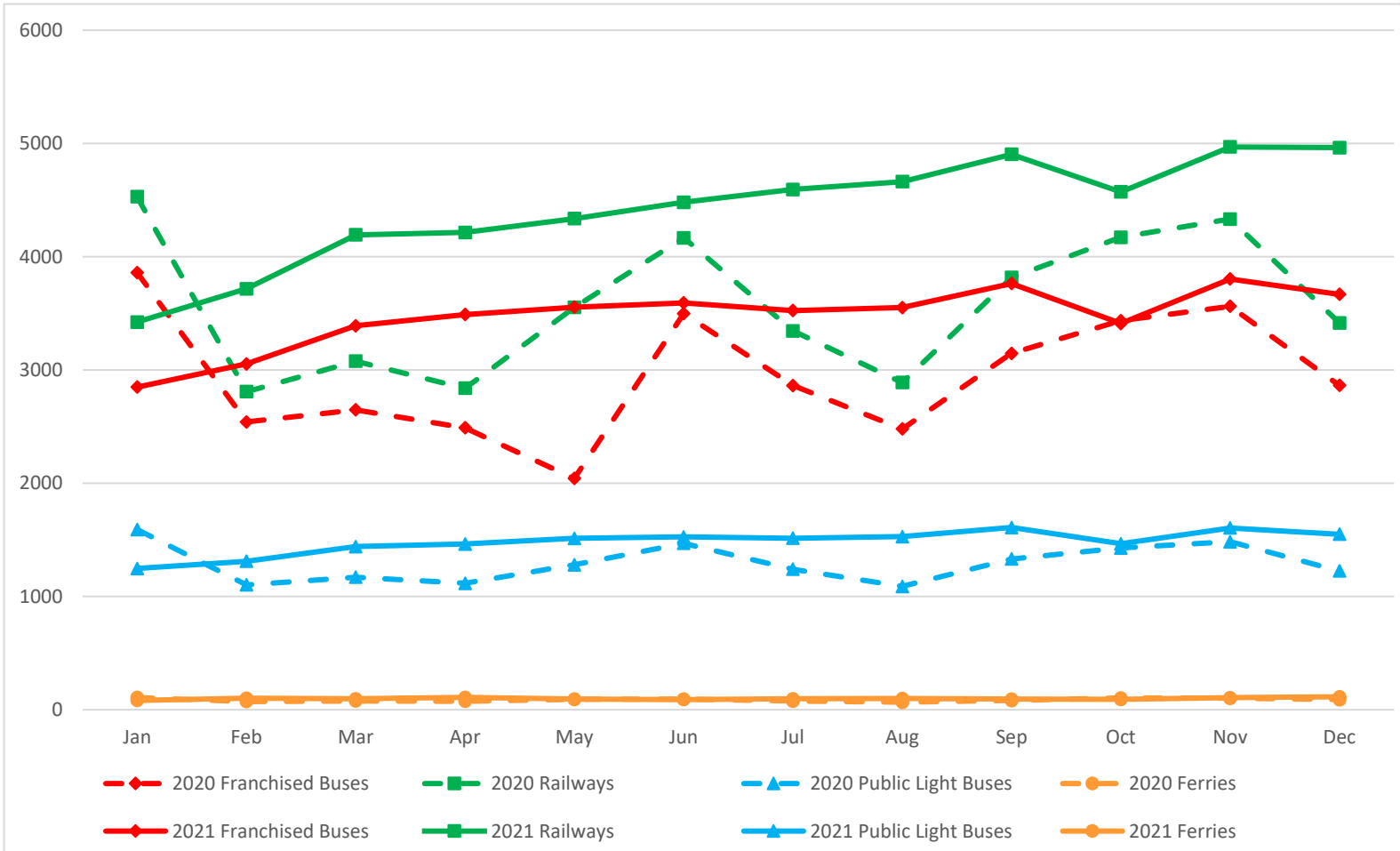
21.6kph
Car Journey Speed (HK Island)

320%
Mobile Subscription Rate
96.1%
Household Broadband Penetration

2022 CHENGDU

18TH ITS ASIA PACIFIC FORUM

Average Daily Public Transport Patronage by Mode



	2019	2020	2021
Franchised Buses	4093.9	3036.3 (-26%)	3471.3 (+14%)
Railways	5253	3579.6 (-32%)	4421.5 (+24%)
Public Light Buses	1761.1	1293.9 (-27%)	1481.1 (+14%)
Ferries	122.3	85.9 (-30%)	97.3 (+13%)

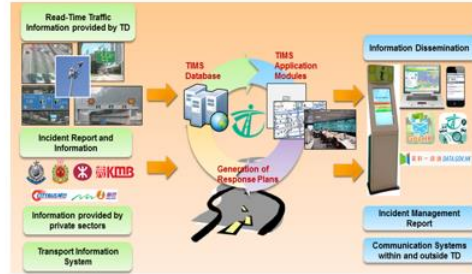
Smart Mobility Achievements in Hong Kong



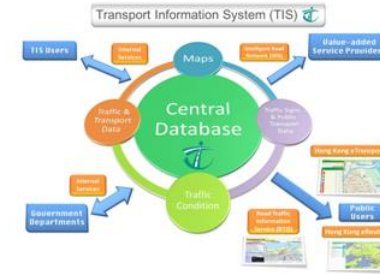
Traffic Control and Surveillance System



Traffic Control Centres



Traffic and Incident Management System



Traffic Information System



Speed Map Panels



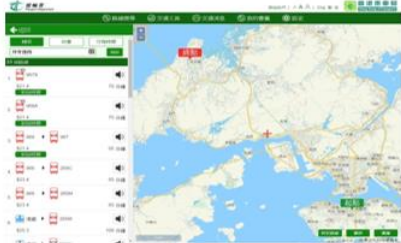
Journey Time Indication System



Area Traffic Control System



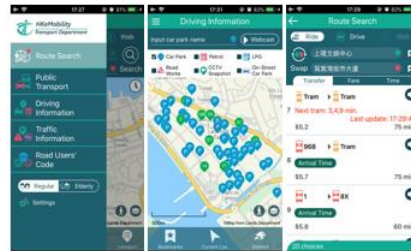
Traffic Speed Map



Hong Kong eTransport



Hong Kong eRouting



Hong Kong eMobility



Autonomous Shuttles

Smart Mobility Achievements in Hong Kong



Installation of Traffic Detectors on Selected Strategic Routes – Design and Construction



Electronic Road Pricing Pilot Scheme in Central



Study on Design and Application of In-vehicle Units



Preparation Work for Traffic Offence Enforcement by Video Analytic Technology



Toll Rationalization Study of Three Road Harbour Crossings and Three Land Tunnels between Kowloon and Shatin



FFTS POC Study under Agreement No. CE9/2013 (HY) Tseung Kwan O – Lam Tin Tunnel - Design and Construction

Guidelines on Developing Smart Hong Kong

Smart City Blueprint 1.0 in 2017

Intelligent Transport System and Traffic Management

- Integrate existing applications (HKeTransport, HKeRouting and eTraffic News) into an all-in-one mobile app by 2018
- Develop the installation of "in-vehicle units" (IVUs) for allowing motorists to receive real-time traffic information and paying tunnel fees by remote means through the IVUs, without toll booths in the light of the feasibility study to be completed by 2018
- Complete the installation of about 1 200 traffic detectors in all strategic roads to provide real-time traffic information by 2020
- In light of the results of the feasibility study, engage the public to develop a detailed Electronic Road Pricing (ERP) Pilot Scheme in Central and its adjacent areas and its implementation strategy in 2019
- Introduce pilot intelligent traffic signal systems with sensors for pedestrians and vehicles at road junctions starting from 2021



(Source: Innovation and Technology Bureau)



Smart City Blueprint 2.0 in 2020

<p>Develop a Traffic Data Analytics System to enhance traffic management and efficiency <small>NEW</small></p>	<p>Conduct trials of installing sensors at certain non-metered on-street parking spaces to provide real-time parking vacancy information by 2022 <small>NEW</small></p>
<p>Apply 5G technologies to provide an independent and reliable wireless network <small>NEW</small></p>	<p>Commission an automated parking system at the Hong Kong Port of the Hong Kong-Zhuhai-Macao Bridge for private cars from Guangdong and Macao <small>NEW</small></p>
<p>Commission automated parking system pilot projects in batches starting from 2021, to pave the way for wider application in short-term tenancy public car parks and public car parks in government premises and to encourage adoption in public car parks in private developments <small>NEW</small></p>	<p>Implement a pilot scheme for electric public light buses <small>NEW</small></p>

Roadmap on Popularisation of Electric Vehicles in 2021

Target

Zero vehicular emissions by 2050
To act in concert with Hong Kong's target to achieve carbon neutrality before 2050

Before 2050

0

<p>E-private cars</p>	<p>No new registration of fuel-propelled private cars including hybrid vehicles in 2035 or earlier</p>
<p>E-commercial vehicles</p>	<p>Promote trials for e-public transport and commercial vehicles proactively in the next few years, with a view to setting a more concrete way forward and timetable around 2025</p>
<p>Government fleet</p>	<p>Set EV as standard for government small and medium private cars to be procured or replaced</p>
<p>Charging network</p>	<p>Develop a comprehensive and proper EV charging network comprising public and private charging facilities, and promote its marketisation for sustainable development</p>
<p>Maintenance services</p>	<p>Provide sufficient training, re-training and education opportunities to groom professionals and mechanics to support development of EV technology and maintenance</p>
<p>Battery recycling</p>	<p>Strive to legislate a Producer Responsibility Scheme for retired EV batteries in the next few years</p>

(Source: Environment Bureau)

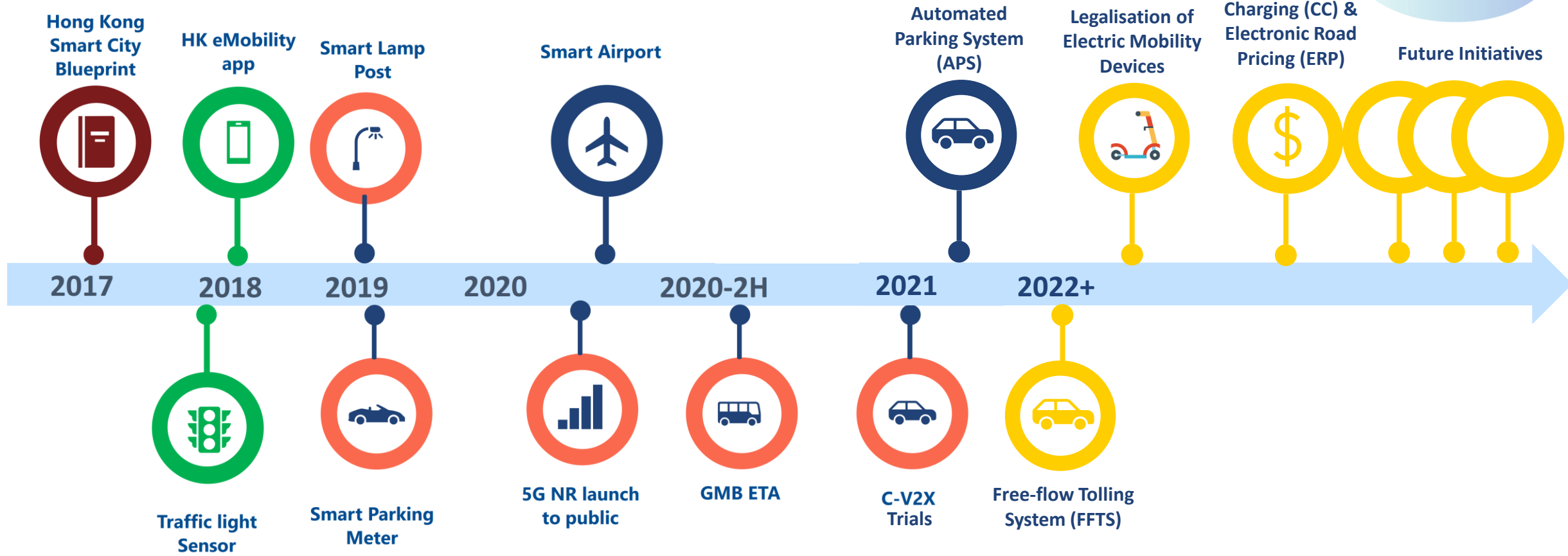
SMART MOBILITY ROADMAP 智慧出行路線圖



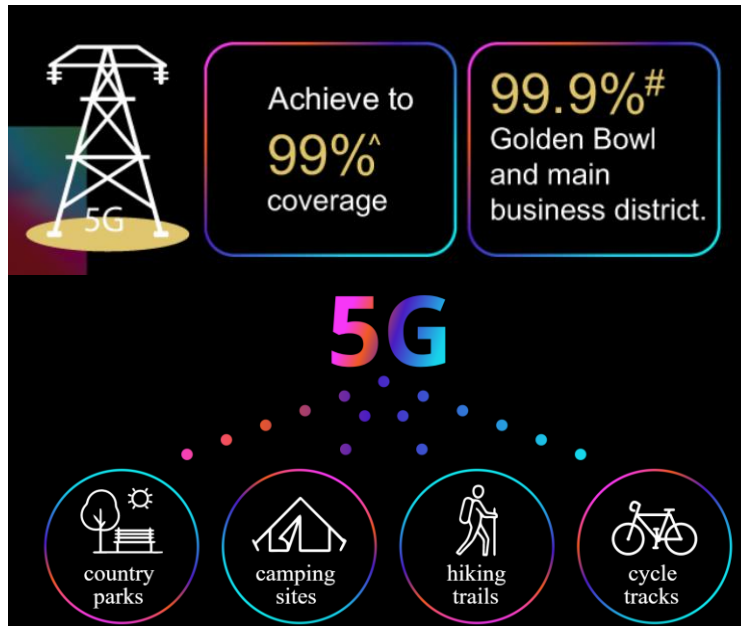
(Source: TD)



Timeline for Smart Mobility Initiatives



5G Coverage in Hong Kong



2022 CHENGDU

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(Source: HKT)

ITS Driving for a Better Life

Traffic Detectors on Strategic Routes and Major Roads



Automatic incident detection

Traffic volume & vehicle classification survey

Journey time survey

Installation works completed in 2020

Previous Coverage — New Traffic Detectors —

(Source: TD)

Traffic data from traffic detectors on strategic routes and major roads



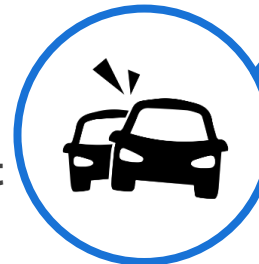
Traffic Data Analytics System (TDAS)

- Visualisation of real-time traffic condition
- Predictive analytics of traffic condition
- Analytics of incident impact & weather impact
- To disseminate real-time and forecast traffic information from 2nd half of 2022

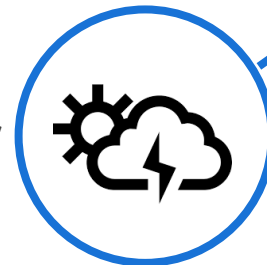
Estimated Time of Arrival of Public Transport on road



Traffic Incident



Weather Data

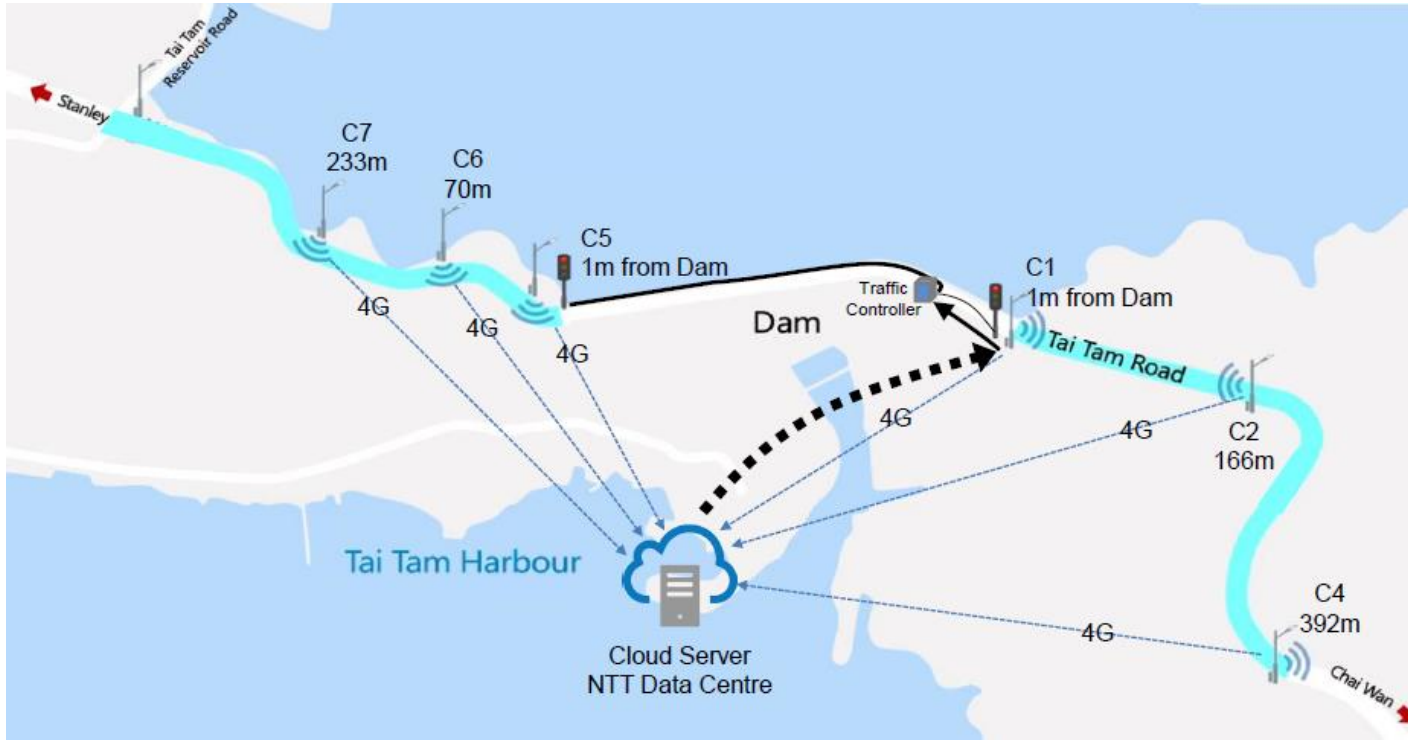


TDAS
a computerised system with big data analytics applications and tools

(Source: TD)

Pilot Real-time Adaptive Traffic Signal System

- Commissioned in Aug 2018
- Reduced delay and queue on Tai Tam Road



(Source: TD)

Pilot Real-time Adaptive Traffic Signal System

- Trials at five selected junctions completed in March 2021
- Extend the trial to linked junctions in Tung Chung town centre

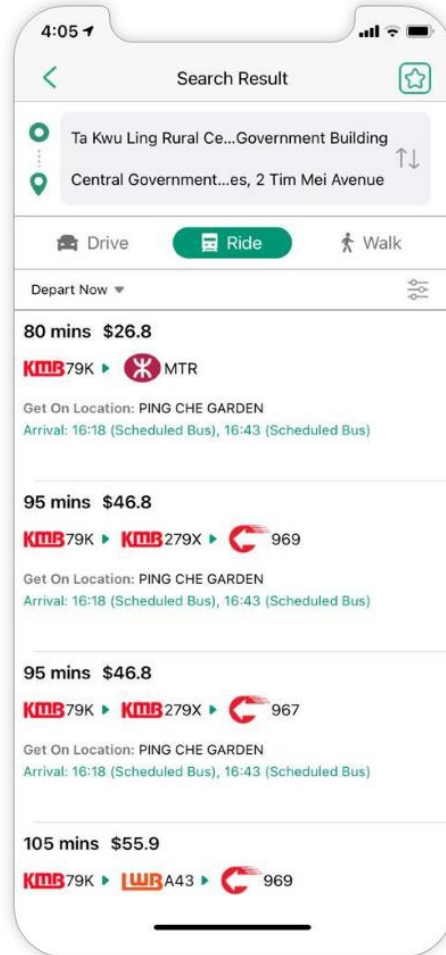


(Source: TD)

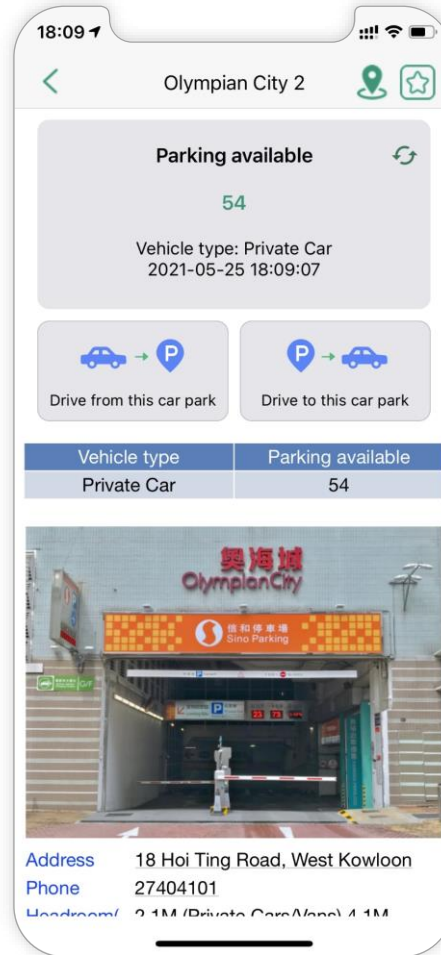
HKeMobility



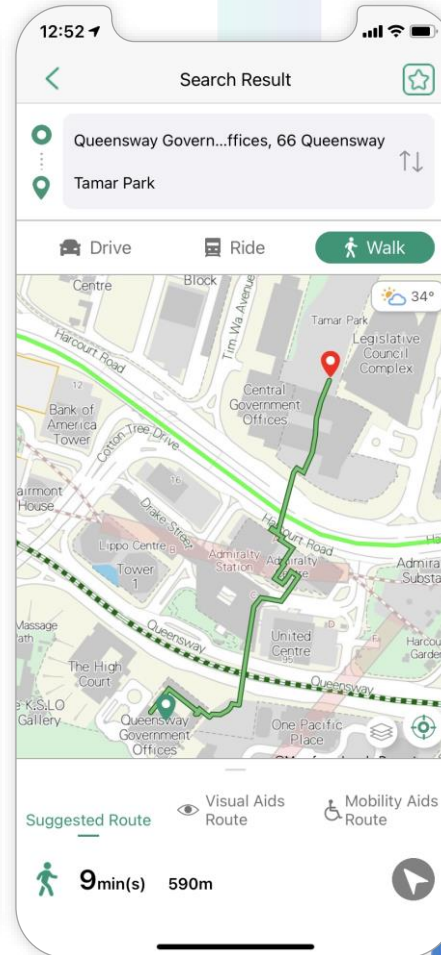
ETA of public transport



Real-time vacancy of public car parks



Walking route search

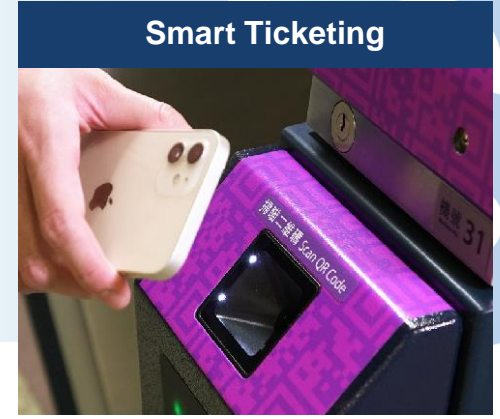
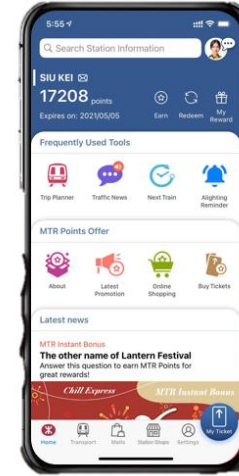
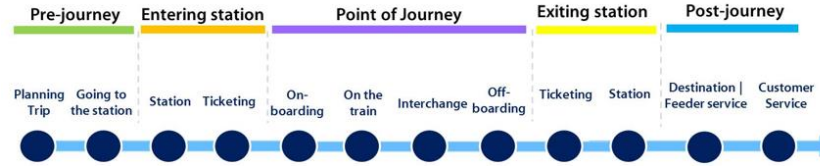


(Source: TD)

Over 2,600,000 downloads

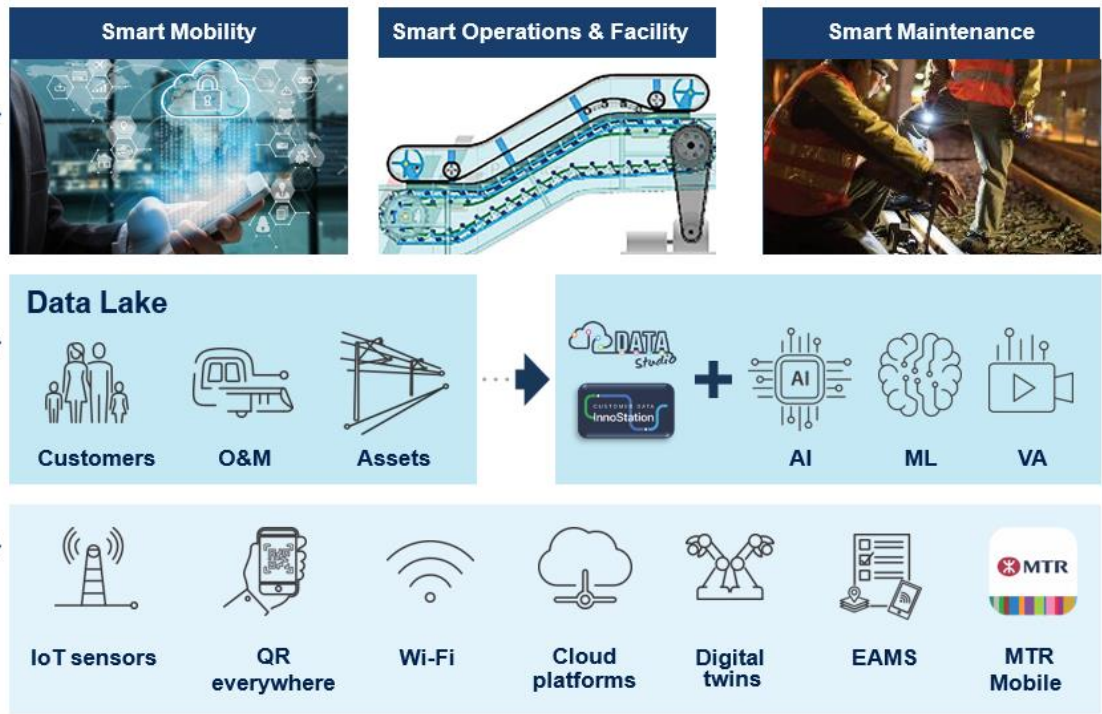
Aiming to deliver a **seamless, digitalized and personalized** experience across different touch points to our customers

Smart Railway



- OUR PEOPLE
- MINDSET
- CULTURE

- 3 Applications
- 2 Data Analytics
- 1 Infrastructure

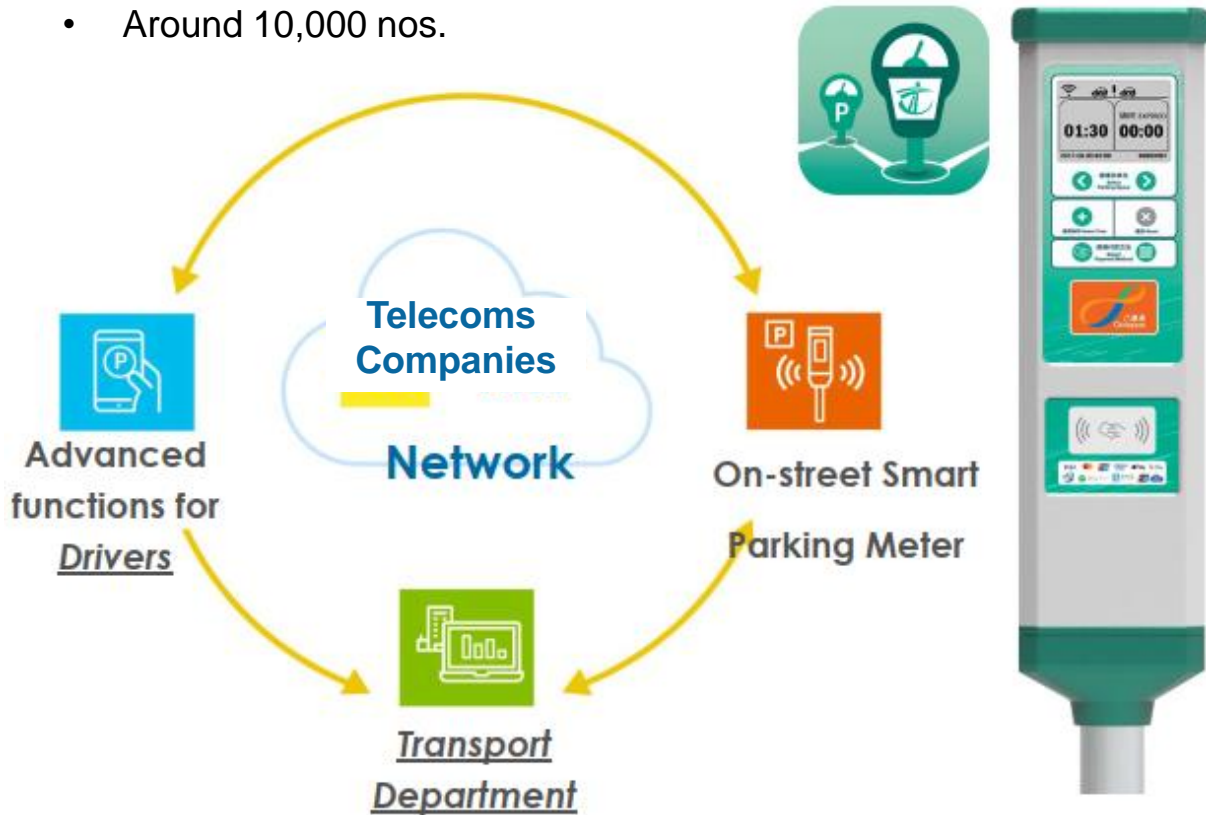


(Source: MTR)

Smart Parking Meters & GMB ETA

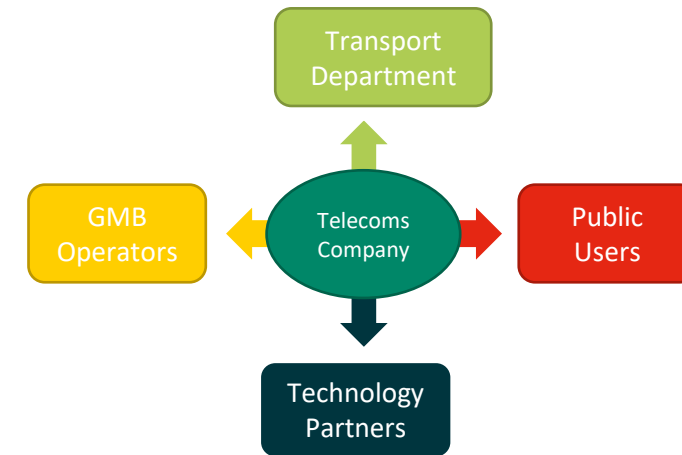
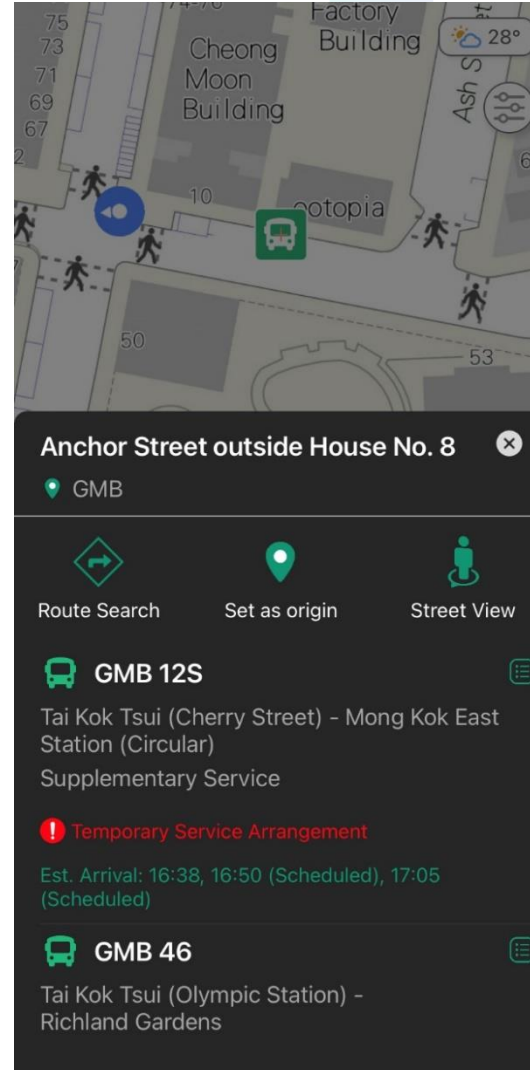
Smart Parking Meters

- Completed the installation in Jan 2022
- Around 10,000 nos.



Real-time Arrival Information System for Green Minibus

- Started from late 2020 in phases
- Full implementation in Q4 2022



(Source: HKT)

Automated Parking System (APS)

Automated Guided Vehicle (AGV)



Implemented at Science Park in Shatin in May 2021

(Source: ATAL)

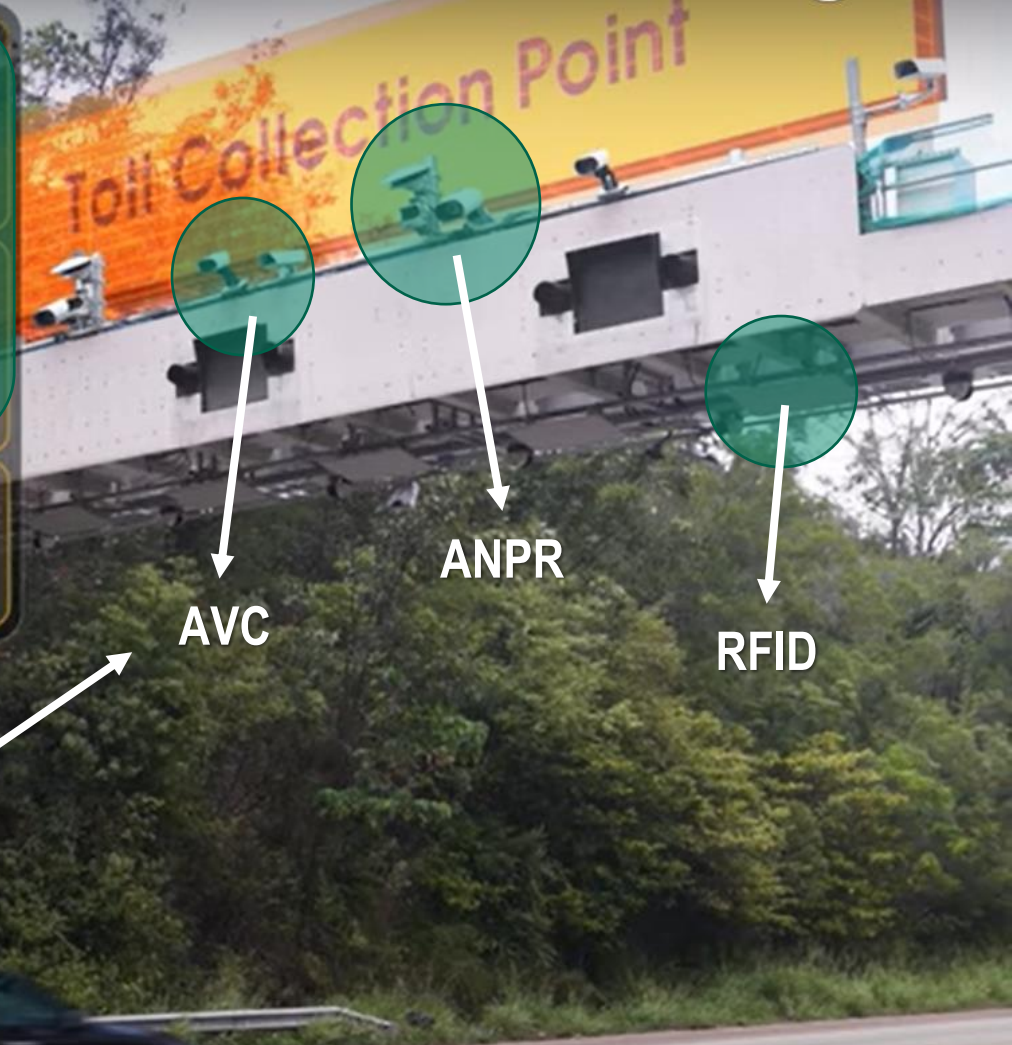
Automated Parking System (APS)

- Short Term Tenancy Site in Tsuen Wan commissioned in Nov 2021
- Airport Authority of Hong Kong to build 6,000 spaces for air transfer passengers
- 200 spaces to be provided at Sham Shui Po District



First Free-flow Tolling System in Hong Kong

Tag Information Front Number Plate: JQ884 Rear Number Plate: JQ884		Vehicle Class Length: 4936mm, Width: 1868mm, Height: 1479mm Number of axes: 2	
Plate Number [Image of car with plate number]		Vehicle Class Class: Private Car	
Tag ID: CHCT08012548 on date: 2020-05-27 13:25 Toll Fee: Tai Lam Tunnel (Ting Kau -> Pei Heung) - HK\$48		Speed: 72.3 KM/H	



First phase to commence in end 2022



Congestion Charging (CC) and Electronic Road Pricing Pilot Scheme (ERP)



Design Principles

Congestion Charging
Concept

Efficiency First
Principle

Simple Charging
Scheme

Minimal Impact on
Through Traffic

Targets

Reduce
Traffic
Demand

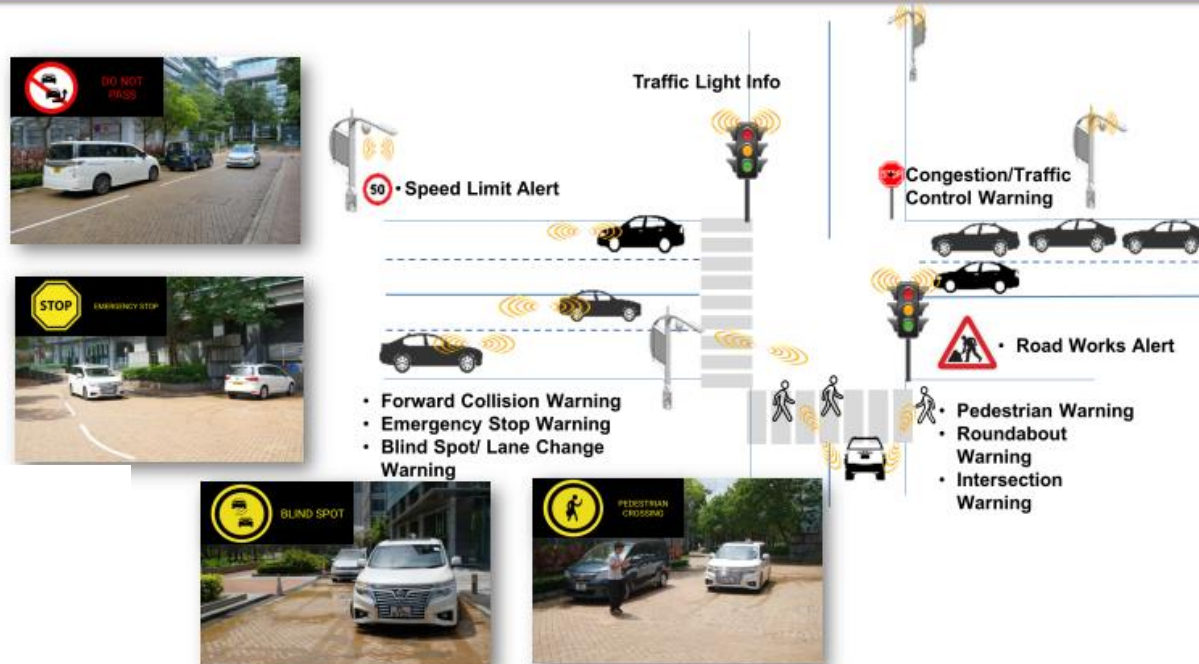
Alleviate
Congestion

Save
journey
time

Determine how ERP should be taken forward subject to traffic conditions upon implementation of CC

C-V2X Trials

- Launched in March 2021
- A 14km route from Hong Kong Science Park to Sha Tin town centre
- Phased 2 funded by Smart Traffic Fund



X, RSU: Road Side Unit, OBU: On-board Unit

(Source: HKT)

Automated Vehicles (AVs)

- By end of March 2022, Movement Permits issued to 11 AVs to conduct trials in eight different locations
- Amendment Bill to be introduced to LegCo by end 2022
- Age-inclusive and clean energy to realise ESG benefits





Smart Airport's AVs

Autonomous Electric Tractor (AET)

- Deliver baggage and cargos starting 2019

Autonomous Patrol Car (APC)

- Began patrol duty in Sep 2021

Autonomous Shuttle Bus

- Carry airport staff to work starting Q3 2022
- Extend to airport passengers and the public in 2024



Traffic & Transport Strategy Study (TTSS)

- Will map out Transport Strategy Blueprint up to 2050, including ITS
- One of the major study directions is to optimise the use of limited road space
- Will also explore the feasibility of promoting smart motorways
- Aim to improve connectivity with GBA by building Transport Interchange Hubs (TIHs) at strategic locations to connect different modes of transport





THANKS



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