ParkAV

The role of dynamic kerbside and parking in automated mobility

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AppyWay

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In partnership:

appyway   JAGUAR   LAND ROVER   Coventry City Council   milton keynes council   WHITE WILLOW TRANSPORT INTELLIGENCE   Innovate UK

The Kerbside and Mobility

The kerb is a key piece of the puzzle for the future of mobility.

Increased modal and use case complexity will lead to a higher demand for kerb space and a change in how kerbside access and regulations are managed, especially as we move towards automated mobility.

How automated mobility will interact with the kerb:

- How will this work technically?
- What will the business model look like?
- How does regulation need to change?

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ParkAV

ParkAV

ParkAV is an Innovate UK funded project led by AppyWay, exploring and building the logistical and commercial framework required to facilitate automated valet parking as part of an integrated MaaS offering.

Use case:

To illustrate the logistical complexity, consider the story of Lucas, taking advantage of a future MaaS solution to check out his favourite comedian's new show.

Lucas Timeline

ParkAV

6.15 PM

Lucas requests an AV to deliver him and his housemate to the comedy club by 7pm

1

2

P **6.30 PM**

AV parks closest to their house where restrictions allow

ParkAV

6.50 PM

AV delivers them at the comedy club

STAND UP COMEDY LIVE

3

The AV needs to access servicing

4

5

CAR WASH
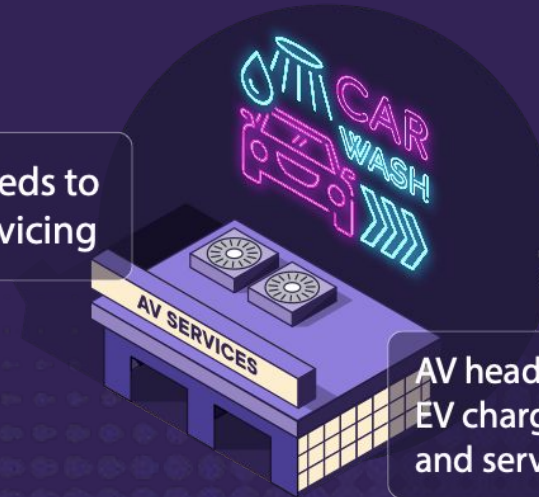
AV SERVICES

7.00 PM

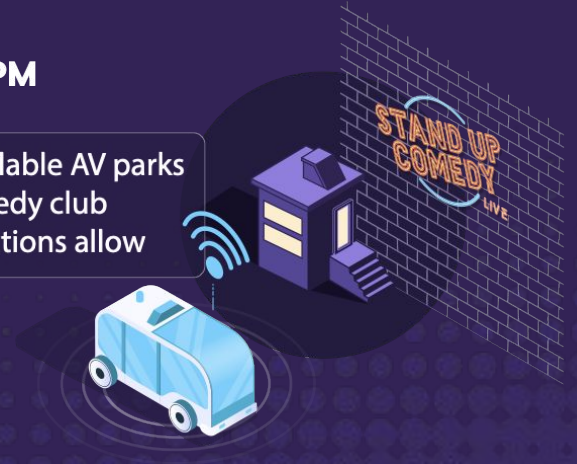AV heads to an area for EV charging, cleaning, and servicing

ParkAV

8.00 PM

AV stays in a layby bay until it is requested again

6

11.35 PM

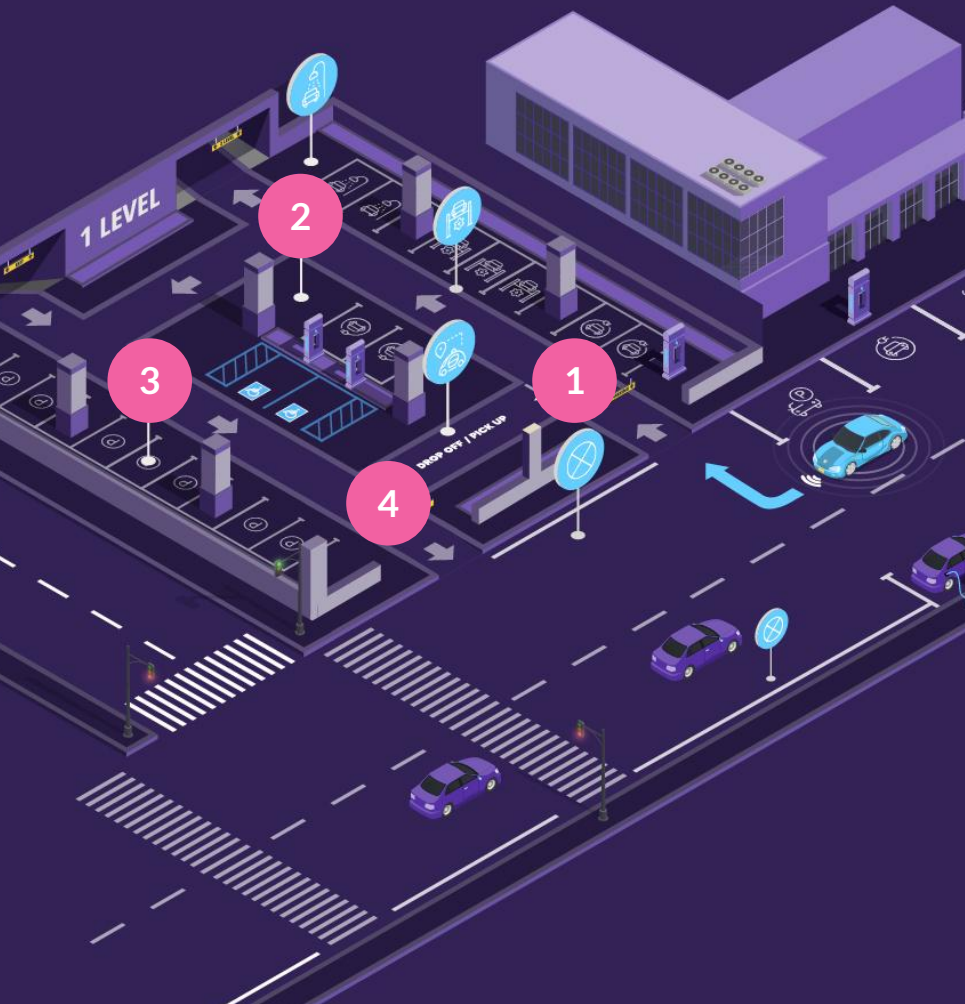Another available AV parks outside comedy club where restrictions allow

7

STAND UP COMEDY LIVE

ParkAV

12.00 AM

AV delivers Lucas and his housemate home for midnight

8

AV processes payment for Lucas' journeys

9

SEND

0000 0000 0000 0000

Scope & Complexity

Vehicle Journey:

- After set down the vehicle navigates to the off street location
- Access permissions and permits are acquired
- The vehicle is serviced, cleaned, charged and stored
- Before returning to the onstreet area for collection

Sign 1:
Mon - Sat
7.30 - 9.30 am
4.30 - 6.30 pm
No loading
Mon - Sat
7.30 - 9.30 am
4.30 - 6.30 pm
P Mon - Sat
9.30 am -
4.30 pm
Pay at machine
←
Display ticket

Sign 2:
Zone
ENDS

Sign 3:
P Mon - Sat
7 - 8 am
Permit holders A
only
8 am - 7 pm
Permit holders A
or
20 mins
No return
within 40 mins
7 - 9 pm
Permit holders A
only

Sign 4:
Restricted
Zone
Mon - Sat
8.30 am - 6.30 pm
No loading
Mon - Sat
8.30 am - 6.30 pm

Sign 5:
P Permit
holders D
parking only
past this point
Mon - Fri
8 am - 6.30 pm

Sign 6:
Controlled
ZONE
Mon - Fri
8.30 am - 6.30 pm
Saturday
8.30 am - 1.30 pm

Today's UK kerbside reality

ParkAV

Which restricted kerbside could ParkAV use in the UK?

Knowing where to stop compliantly is vital to avoid costly parking fines and enforcement as part of ParkAV:

- Traffic Regulation (Management) Orders cover large portions of city road networks

- London as one example has 14,000 km's of controlled kerb edge. Total network 34,000km

- 34 separate London authorities creating unique TRO's for kerbside management

- Resident bays, Paid bays and line types are the three more common TROs often used.

- 32% of London's Road network is Resident bays.
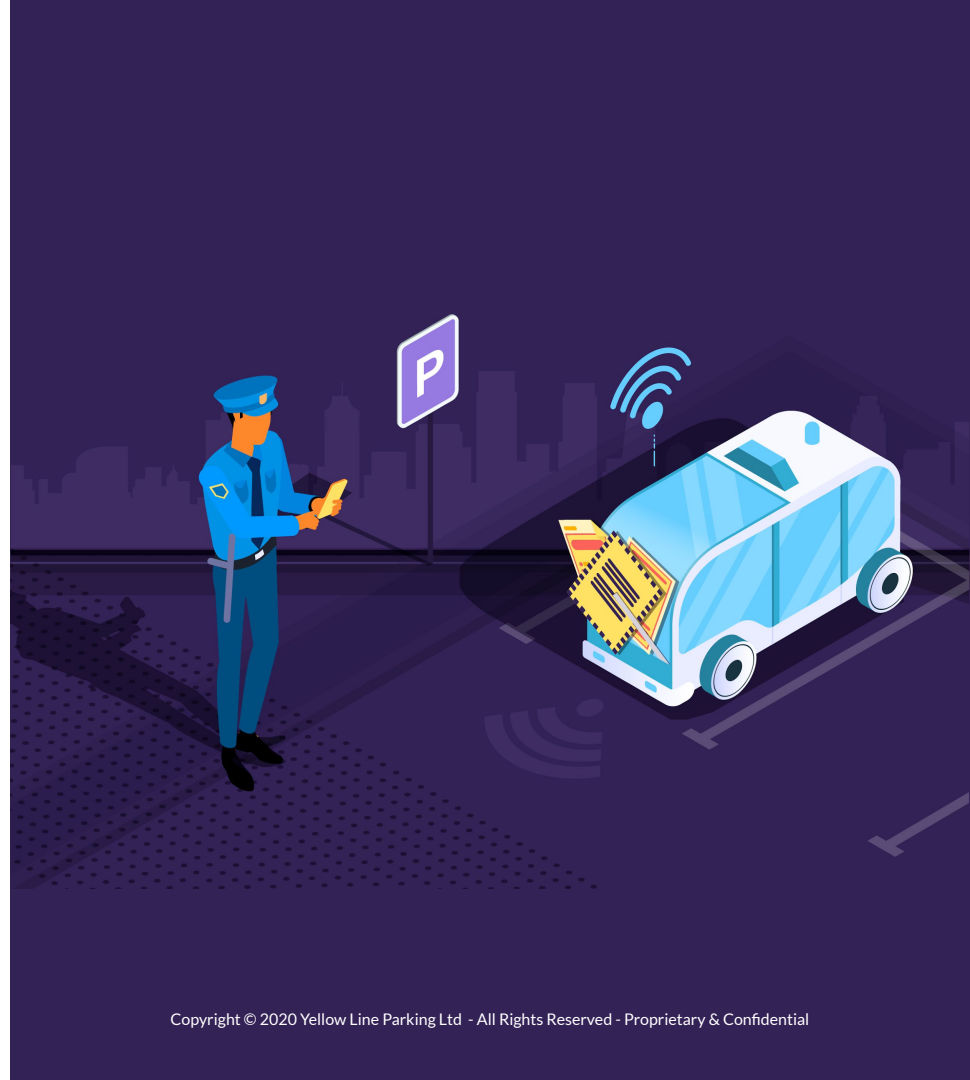
ParkAV

Which restricted kerbside could ParkAV use in the UK?

Taxi Bays

Free Bays:

- Free bays could be used but they are not always close to points of interest where ParkAV will support or access for user groups that could arrive at any time.
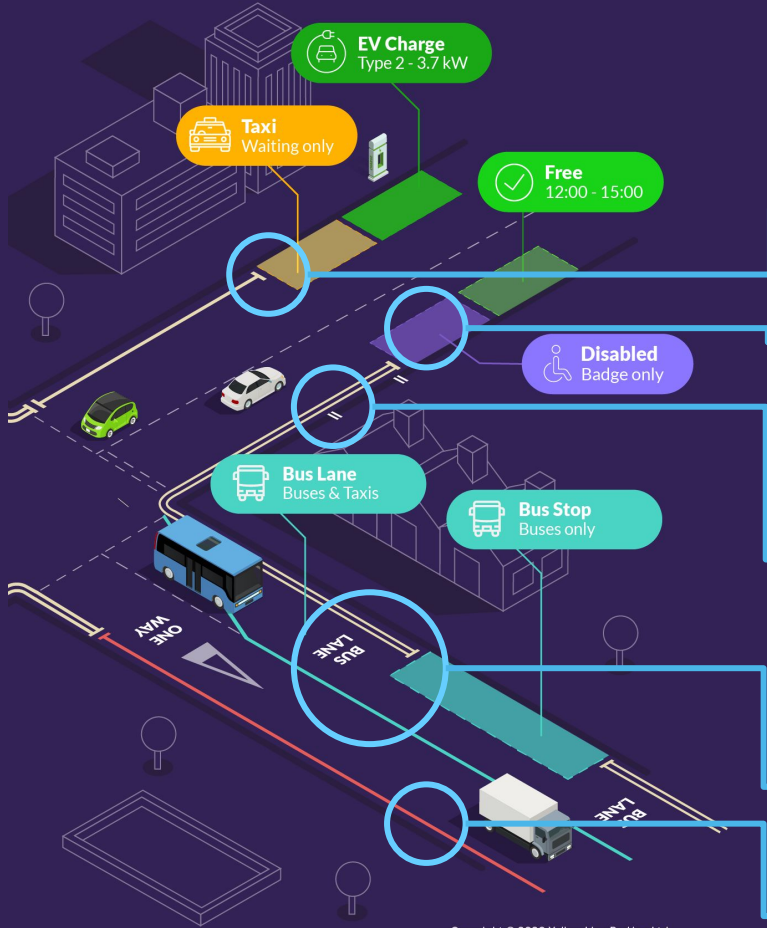
Line Paint:

- Line paint allows short term stopping and could be used for ParkAV - however should the service be used at scale this is unlikely to remain the case.

Bus Lane & Bus Stops

- Our interpretation of the highways suggest you could set down in a bus lane but not specific restrictions such as the bus stop itself.

Red Routes

Labels in illustration:
- EV Charge — Type 2 - 3.7 kW
- Taxi — Waiting only
- Free — 12:00 - 15:00
- Disabled — Badge only
- Bus Lane — Buses & Taxis
- Bus Stop — Buses only
- ONE WAY
- BUS LANE

ParkAV

ParkAV over time, matching sector capability.

PRIVATE CARS

UBER

LYFT

LYNK & CO

WAYMO

Feature on Private cars

- ParkAV function in certain "enabled sites" without end to end integration but as a USP.

- Private sites vying to support the service as premium customers increasingly buy into the feature.

- Private sites "contain" the complexity of the business model by offering a mini ParkAV similar to valet today.

Feature on a private or fleet car supporting multiple use cases

- Automated assistance more widely used and accepted

- Off street facilities having dedicated "no-people-allowed" floors similar to automated warehouses today.

- Private vehicles still used and stored in large proportion with some premium services taking on the feature.

Private car ownership is history, with consumers buying mobility not metal

- Dense urban, the location of ParkAV.

- Public and Private operators working together to achieve clean streets and liveable neighbourhoods.

- "MaaSPark": parking for MaaS providing dynamic kerbside access and integrated payments

SAE level increases

Calls for action....

UK Central Government

- Change the Road Traffic Act to allow short term parking

- Allow digital and dynamic Traffic Regulation Orders (TROs).

- Mandate standards that support interoperability from parking payment systems

- Don't just look at vehicle capability, but have a customer and business centric view of how they influence land use and development planning to encourage adaptability of land use and growth.

UK Local Government

- Develop new approaches to parking contracts, procurement and management. Consider City performance indicators within contracts.

- See MaaSpark as an important enabler of MaaS, rather than a competitor/ blocker to it

- Develop ways to charge wholesale prices for parking by changing contract approaches

- Consider and plan for future AV parking in new developments now, to allow for future change of use
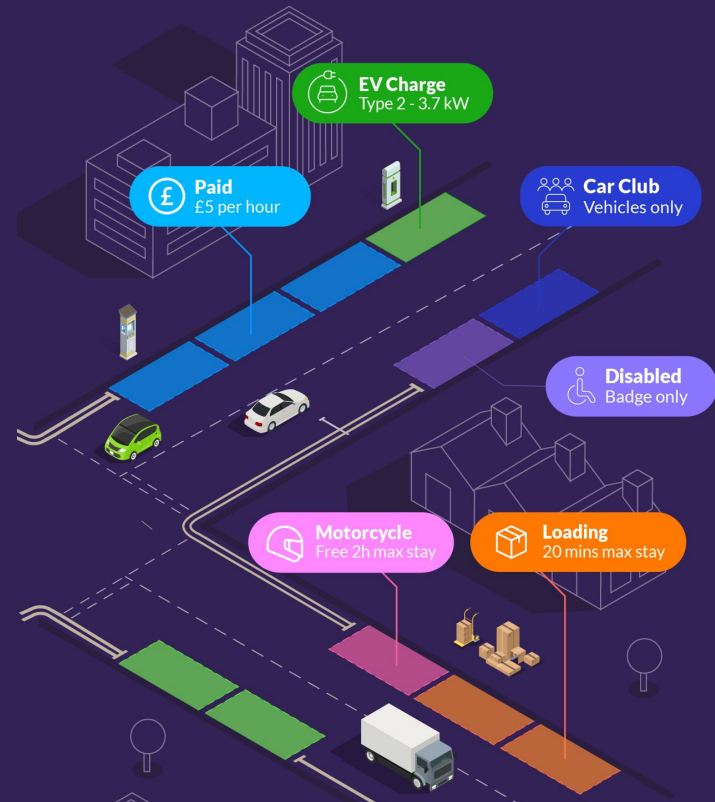
Automated mobility: moving towards a dynamic kerbside

Short term mission:

- Connect cities to connected vehicles by digitally transforming analogue parking infrastructure into mobility API's ready for the demands of intelligent transport.

Long term mission:

- Provide a dynamic kerbside management system that enables cities to optimise and sustainably monetise their kerbside infrastructure.

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EV Charge
Type 2 - 3.7 kW

Paid
£5 per hour

Car Club
Vehicles only

Disabled
Badge only

Motorcycle
Free 2h max stay

Loading
20 mins max stay

EV   Car Club   Rideshare   Mobility Platforms   Logistics   Ride Hailing   Micro Mobility   Autonomous Vehicle