

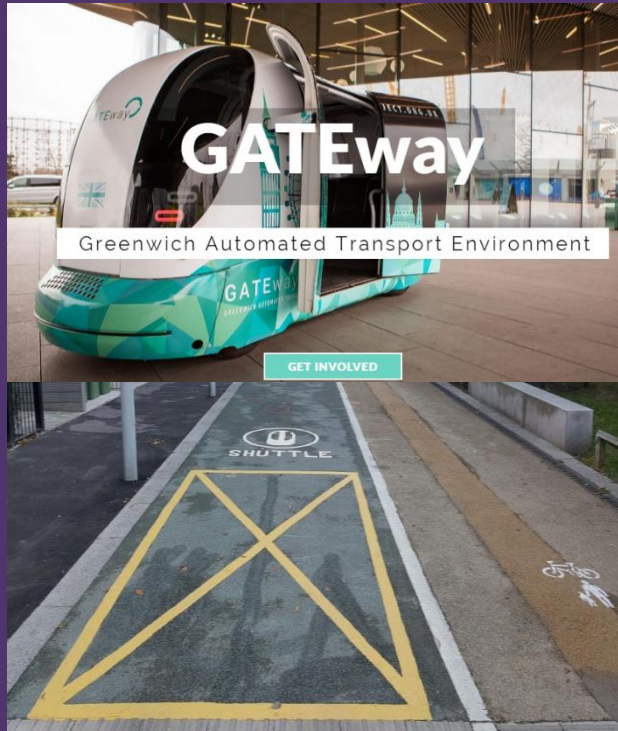


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Future Focus: Driverless Vehicles

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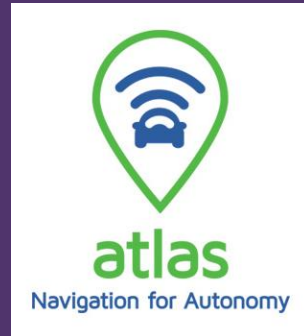


1. Driving forces behind CAV
2. Trials in Greenwich – GATEway project
3. Implications for public service provision

Driving forces behind CAV



- **Business & competitive advantage**
 - Global market £907bn by 2035
 - New entrants, disruption
 - Other industries
 - National GDP
- **Economic & societal benefits**
 - Safety
 - Congestion
 - Efficiency of road space and land use
 - Productivity
 - Mobility & accessibility
- **Jobs & skills**



Five high-profile driverless pilots

- **GATEway:** last mile deliveries and shuttles
- **MOVE-UK:** new methods of validating autonomous driving data
- **Atlas:** mapping & navigation requirements
- **MAVEN:** platooning
- **MergeGreenwich:** ride share
- *Drivers: European test bed*
- *CAV Infrastructure: UK test bed*

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GATEway (Greenwich Automated Transport Environment)

- £8m project funded by industry and Innovate UK
- Understand and overcome technical, legal and societal challenges of using CAVs in urban areas

A team of experts

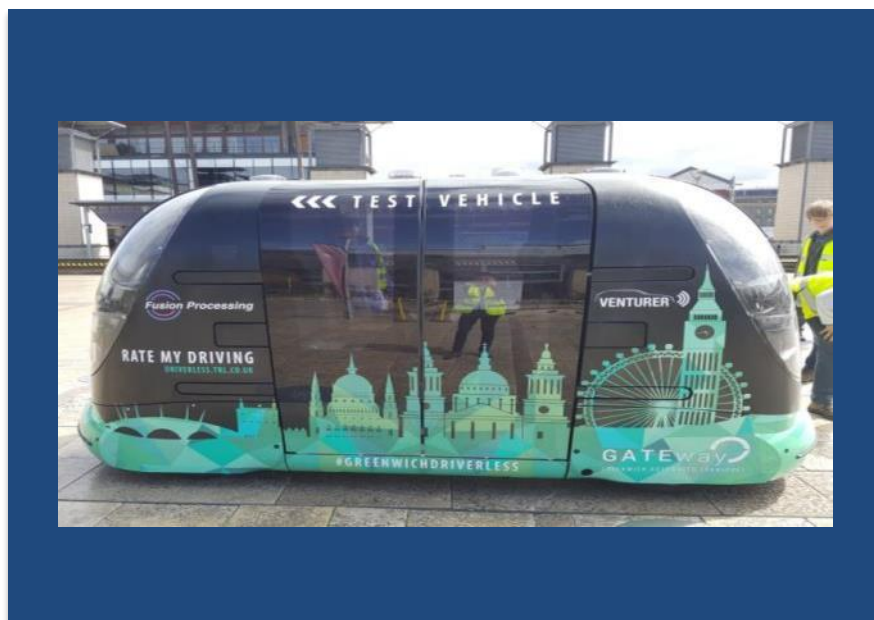
Led by **TRL** THE FUTURE OF TRANSPORT



Supported by **Innovate UK**



Project summary



**Trial 1:
Micro-transit**



**Trial 2: Automated
valet parking**



**Trial 3:
Last mile delivery**

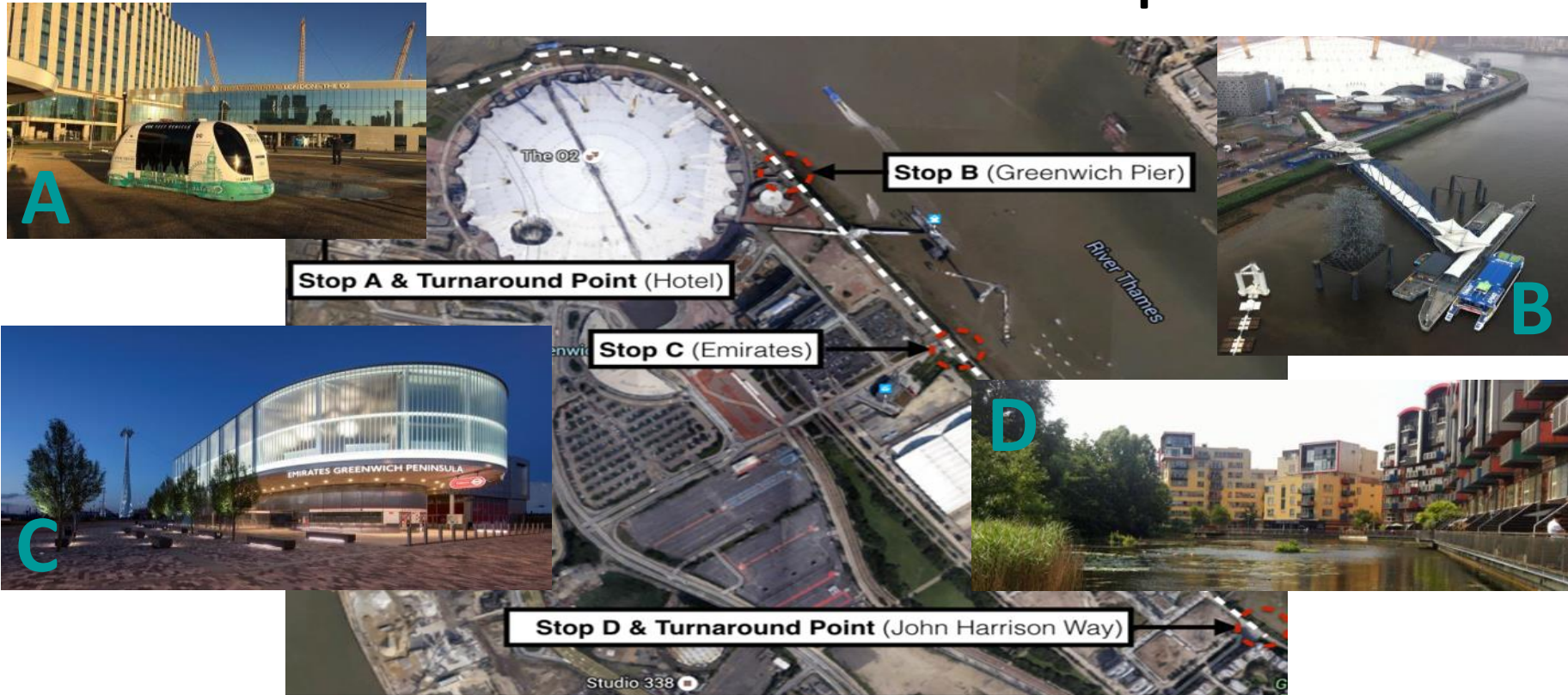
- Legal and technical requirements to enable AVs to be used in the UK
- CAV perception/acceptance to pedestrians, passengers and other road users

Trial 1 – fully automated pods

- Demonstrate automated pods as a 'first/last mile' transport solution
- Provide links between:
 - Transport hubs
 - Businesses
 - Leisure facilities
 - Residences
- 'Smart Cities' concept



Trial 1 – Greenwich pod route





Route:
Planning
Selection
Hazard mitigation

Vehicle:
On-board safety
systems

How will we deliver safe CAV trials?

Trial:
Operational hazard
mitigations
Safe working
practices

Public:
Raise awareness
Engagement

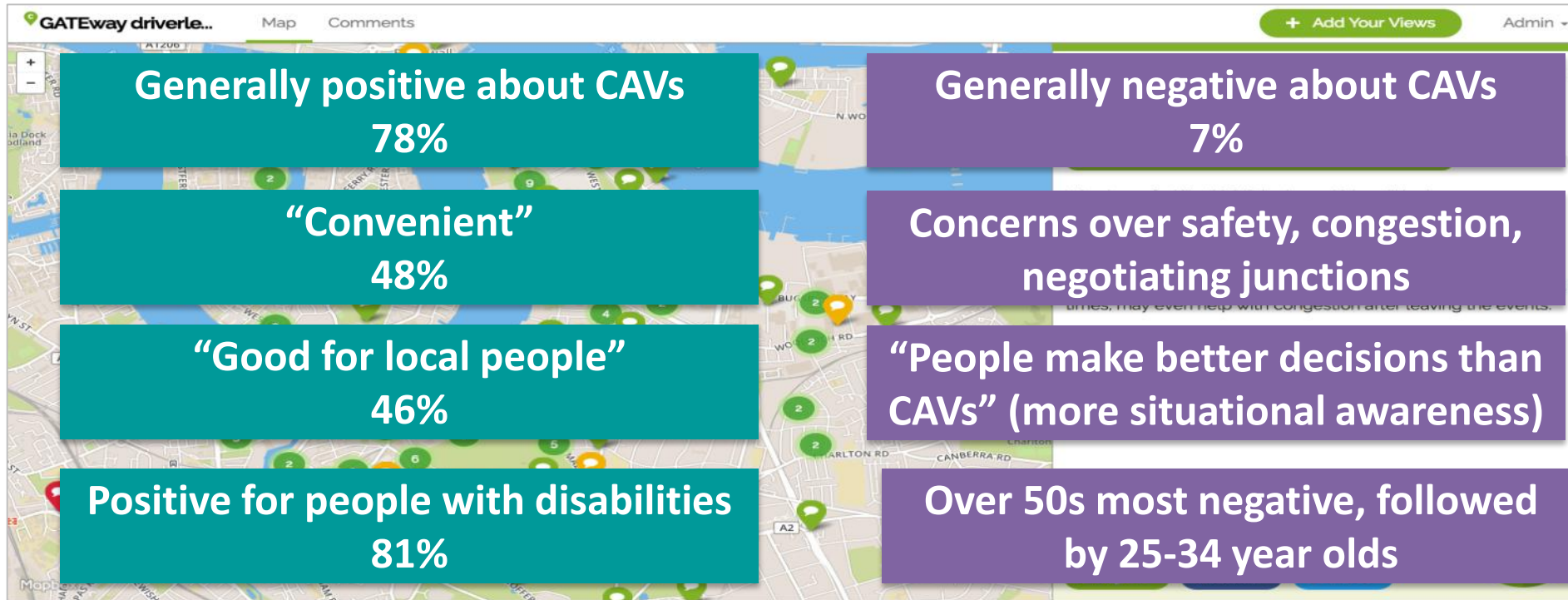
Dystopia – congestion, unemployment



Utopia – comfortable, multi-purpose journeys



Sentiment maps (Commonplace)



Simulator trial – research question

- Do human drivers adapt their behaviour when AVs are recognisable in the traffic?



Simulator trial – approach



- 60 participants
- Briefed on AVs
- 10 drives:
 - T-junctions (4)
 - Overtaking (6)
- Varied AV proportion and visibility

Simulator trial – findings

- Junctions:
 - Participants pulled into smaller gaps when there were more AVs in the traffic
- Overtaking:
 - Participants typically chose to wait until all approaching vehicles had passed

Simulator trial – conclusions

- People do not ‘bully’ AVs – yet!



Male, 35

In hindsight, if I was in a rush and I had to pull out in front of somebody, I'd rather have done it in front of an automated one rather than a human one...I imagine it would have taken avoiding action better than a human can.

At the give way junction, which I found more frustrating, I was actively looking for self-driving vehicles as I felt I could pull out in a smaller gap than normal in front of them.



Female, 29



Female, 54

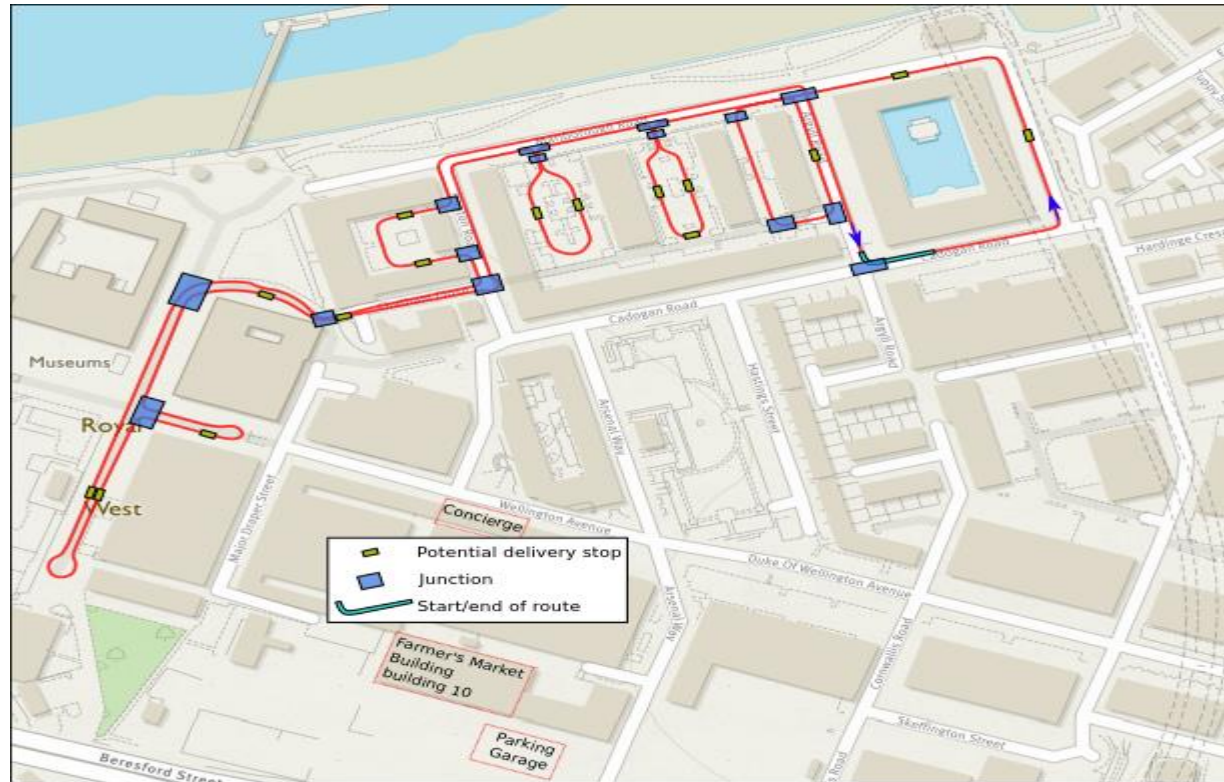
I felt that I would prefer to pull out in front of a self-driven car for the safety advantage that I assume it would react more quickly than a human-driven if necessary...I feel I would be more inclined to take risks.

Trial 3: driverless last-mile deliveries

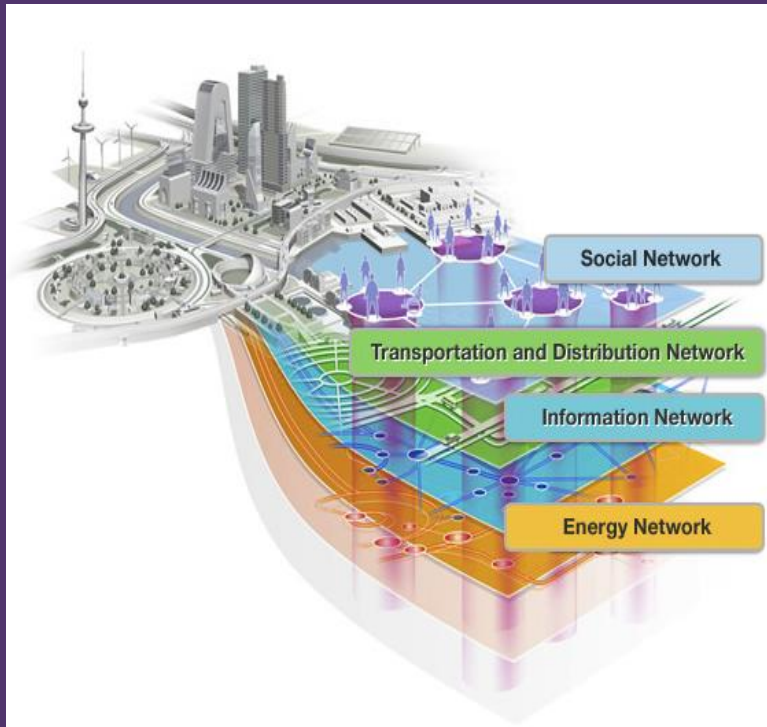


- 2 week trial with CargoPod and Ocado
- Over 100 customers
- TRL surveyed recipients
- Commonplace local sentiment mapping

CargoPod route



3. Implications for Public Service Provision



- When?
- Trends: growth of Maas & ride sharing
- Cities:
 - Integration with public transport
 - Spatial planning and built environment
- Council services:
 - Impact across public sector fleet – efficiency, safety, planning
 - Jobs & skills
 - Infrastructure
 - EV charging
 - V2V & V2X connectivity
 - Vehicle maintenance and property requirements
- Council influence



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'A local authority quietly leading the smart city revolution'

IDOX 2016

