

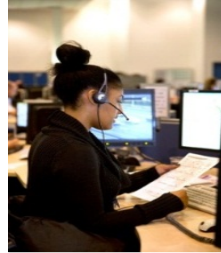
Highways England CAV Programme

Phillip Proctor
Head of Research

Our three imperatives



Safety



Customer Service



Deliver the Road Investment Strategy



The Strategic Road Network (SRN)

Connects the nation

Motorways 1,865 miles
Trunk A-roads 2,571 miles



4,300 miles of SRN

33% of all traffic



66% of all freight

Locally managed roads = SRN

4 times as many vehicles per day, per mile than local roads

Supports the wider transport network



Complementing local networks and connecting nationally



Delivering smooth access to ports



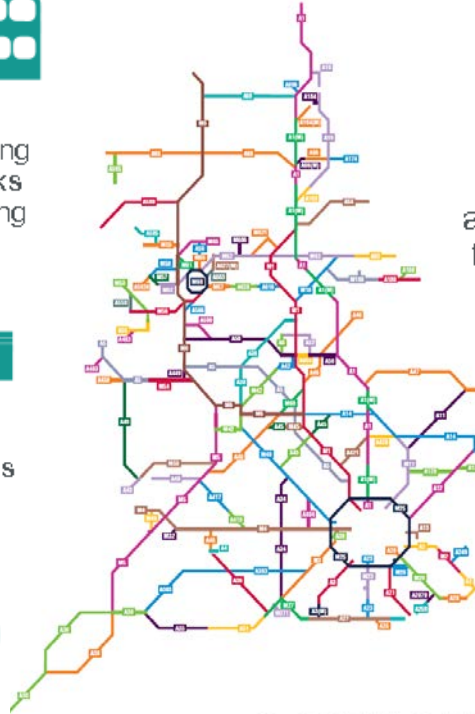
Enabling active travel options



Supporting access to rail and the development of HS2



Enhancing access to airports



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Drives the economy



Usage of SRN continues to grow



9 in 10 people recognise the importance of SRN to the economy

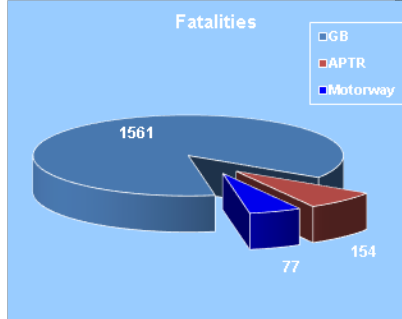
Establishing Highways England

The Infrastructure Act was passed in February 2015

- Allowed the creation of Highways England, a government owned company
 - sole shareholder – Secretary of State for Transport
- Enabled the legal framework and a stable foundation for highways investment
- Established Road Investment Strategies (RIS) with approved funding covering five-year periods, known as ‘Road Periods’ (RP).
 - RP1: April 2015 – March 2020 (£15bn)
 - RP2: April 2020 – March 2025
- Creating an operating environment which enables efficiency, service and delivery to increase and provides supply chain certainty
- A monitoring and customer ‘watchdog’ regime were established to provide assurance

CAV Strategy and Programme

Performance – 2016 Incidents



- Our roads are some of the safest roads in Europe
- Safer cars major contributor

Performance – 2015 Incidents



Vehicle
Breakdowns

182,000



Oncoming
vehicle

590



Fires

2,200



Obstruction

46,000



Animals on
network

3,200

Wrong fuel
470



No fuel
6,200



Tyre related
34,600



Tyre related
6,000
Straps
4,000



Government Policy

The Government has announced that the UK is ***“committed to becoming a global leader in the design, development and use of autonomous vehicles”***. ***It has established new bodies, allocated funding and amended legislation in order to facilitate their introduction.***

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/446316/pathway-driverless-cars.pdf

New Bodies

- CCAV s a joint policy unit set up by Department for Business, Energy & Industrial Strategy and DfT to help ensure that the UK is a world leader in developing and testing CAVs. It has both a research and promotional role
- MERIDIAN is a government-backed, industry-led coordination and promotion hub for the development of CAV technology in the UK, established in September 2017

<https://meridianmobility.tech/>



Centre for Connected
& Autonomous Vehicles



Funding and Legislation

- CCAV have committed to invest over £200m in CAV trials and testbeds in the UK
- The Automated and Electric Vehicles Bill currently being considered in Parliament
- A Law Commission review is underway to assess the UK's broader legal framework in terms of CAV readiness.

Our CAV Strategy and Programme

Connecting the Country

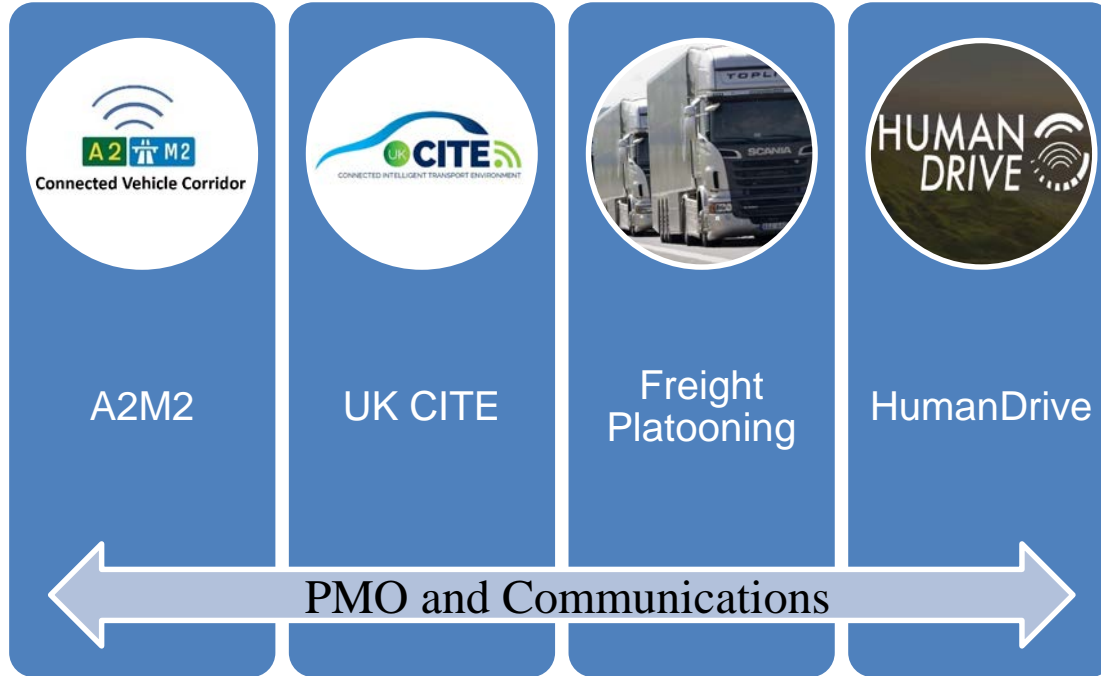


Our CAV Focus Areas

1. Supporting connected cars
2. Preparing for the operation of a mixed fleet
3. Developing our role in supporting and enabling CAVs

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/666876/Connecting_the_country_Planning_for_the_long_term.pdf

Connected and Autonomous Vehicle trials on the Strategic Road Network



Connected Corridors



A2/M2 Day One Services

Floating vehicle data (locations and speeds for evaluation)
Roadwork Warning (RWW)
Green Light Optimized Speed Advisory (GLOSA)
In Vehicle Signing (IVS)

UK CITE Day One Services

Emergency Electronic Brake Lights (EEBL)
Emergency Vehicle Warning (EVL)
Traffic Condition Warning (TCW)
Roadwork Warning (RWW).

Instrumenting the A2/M2 and M40/M42 with systems which allow roads, infrastructure and vehicles to talk to each other, safely and efficiently.

Freight Platooning

Delivering a trial of freight platooning on the strategic road network, up to three trucks will travel in convoy matching each others acceleration and braking.



How it works?

Information Examples			
Information Use Case	Semi & Autonomous Messaging	Driver Assistance	Informed Driver
Example Message	Co-Operative Braking SAE/NHTSA class 2-3	"Accident - lane ahead close"	"Traffic jam - Take alternative route"
Time Criticality	< 100ms	< 60 secs	Secs to Min
Distance	0-1.5 km	0.5-2.5km	>2.5km
GPS Accuracy	< 1 meter	1-5 meters	> 10 meters
Hardware Receiver Required		Mobile Phone	
	Embedded		
Network Required		LTE + LTE-V + LTE-MEC Services	
	LTE – V2V		
	ITS-G5		Wi-Fi Services

HumanDrive

Working with Nissan to trial a fully autonomous vehicle on the strategic road network, ensuring it is safe and modelling the long term impact of widescale uptake.



CONSORTIUM MEMBERS



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Inspire the Next



highways
england
driving forward

ATKINS

UNIVERSITY OF LEEDS



TSS
TRANSPORT
SIMULATION
SYSTEMS

CATAPULT
Transport Systems



www.humandrive.co.uk

<https://humandrive.co.uk/>

5G Deployment

Collaborating with DCMS to undertake a feasibility study on using Highways England assets to deliver 5G deployment.



Department for
Digital, Culture
Media & Sport



Working together to
deliver a high
performing network

Thank you

