Connected and automated vehicles at the crossroads to success

Key issues from a UK perspective

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Automated vehicles: reality check

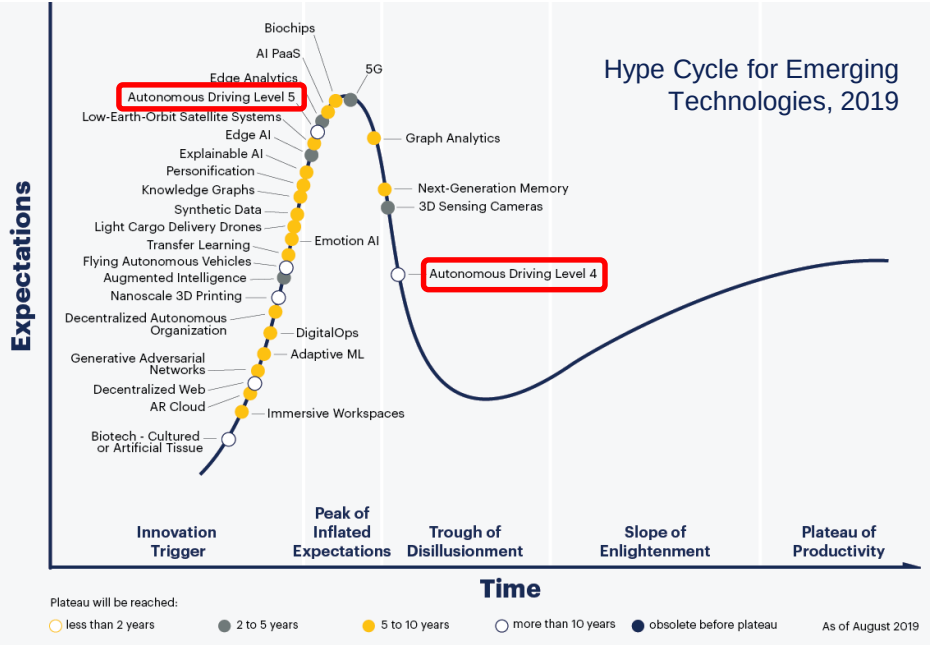
SMMT DRIVING THE MOTOR INDUSTRY

Increasing availability of ADAS, but…

UK registrations (2018)	Fitted as standard	Available as an option	Total
Adaptive Cruise Control	317,635 (13.4%)	910,127 (38.4%)	1,227,762 (51.9%)
Autonomous Emergency Braking	1,245,006 (52.6%)	495,103 (21.0%)	1,740,109 (73.5%)
Blind Junction View	9,159 (0.4%)	172,929 (7.3%)	182,088 (7.7%)
Collision Warning System	1,441,841 (60.9%)	406,553 (17.2%)	1,848,394 (78.1%)
Overtaking Sensor	177,613 (7.5%)	1,050,583 (44.4%)	1,228,196 (51.9%)
Parking Assistance	194,087 (8.2%)	741,133 (31.3%)	935,220 (39.5%)

Source: JATO Dynamics analysis based on SMMT new car registration data 2018

…so is hot air when it comes to automated driving



Source: Gartner, Inc. (Aug 2019)

Conditional automation: Traffic Jam Pilot is near to market but requires regulatory reform

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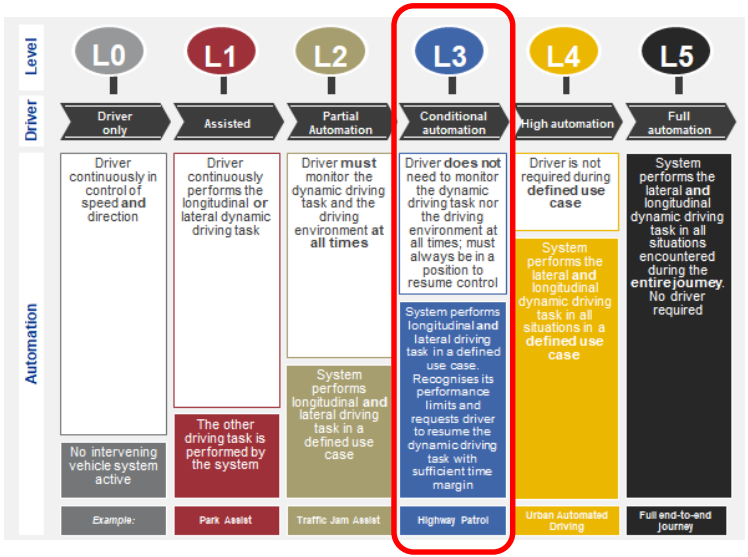

UNECE
United Nations Economic Commission for Europe

ELIZABETH II c. 52

Road Traffic Act 1988

1988 CHAPTER 52

An Act to consolidate certain enactments relating to road traffic with amendments to give effect to recommendations of the Law Commission and the Scottish Law Commission.

[15th November 1988]

BE IT ENACTED by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

2018 No. 592

ROAD TRAFFIC

The Road Vehicles (Construction and Use) (Amendment) Regulations 2018

Made	*10th May 2018*
Laid before Parliament	*16th May 2018*
Coming into force	*11th June 2018*

The Secretary of State makes these Regulations in exercise of the powers conferred by section 41(1) and (5) of the Road Traffic Act 1988 ("the Act")(1).

The Secretary of State has consulted representative organisations in accordance with section 195(2) of the Act and Scottish Ministers in accordance with section 41(2B)(2) of the Act.

UK has the potential for wider connected vehicle services deployment (based on cellular Uu)

	CAV Index / Benchmarking	Enabling Regulations				Enabling Infrastructure					Market Readiness				
		General Regulation	Civil Liability/ Insurance Framework	Road Traffic Laws	Total Score (Out of 3.5)	Digital Infrastructure 4G Speed (Mbps)	Digital Infrastructure 4G Coverage (%)	5G Pilots/ Tests	Deployable Road Miles	Total Score (Out of 3)	ADAS uptake	Connected Car Uptake	MaaS Uptake	DRT Fleet Size	Total Score (Out of 3.5)
Countries/ Weights	100%	10%	12.5%	12.5%		5%	10%	5%	10%		10%	10%	7.5%	7.5%	
United Kingdom	8.4	8.0	8.0	9.0	2.9	4.0	7.7	6.0	9.0	2.2	9.0	9.0	10.0	10.0	3.3
France	6.1	6.0	4.0	6.0	1.9	4.5	6.8	4.0	6.0	1.7	8.0	9.0	8.0	3.0	2.5
Germany	7.2	8.0	4.0	10.0	2.6	3.9	6.6	6.0	7.0	1.9	10.0	9.0	10.0	2.0	2.8
Netherlands	6.4	8.0	4.0	7.0	2.2	8.2	9.0	2.0	7.0	2.1	8.0	6.0	8.0	2.0	2.2
United States	8.0	10.0	4.0	9.0	2.6	2.5	9.0	10.0	8.0	2.3	8.0	10.0	8.0	8.0	3.0
Japan	6.2	6.0	6.0	6.0	2.1	4.5	9.5	6.0	8.0	2.3	9.0	4.0	6.0	1.0	1.8
China	5.2	4.0	2.0	6.0	1.4	3.7	8.7	6.0	6.0	2.0	6.0	5.0	6.0	4.0	1.9
South Korea	6.2	8.0	6.0	7.0	2.4	7.9	9.7	8.0	5.0	2.3	7.0	3.0	6.0	1.0	1.5

Source: SMMT / Frost & Sullivan (2019), Connected and Autonomous Vehicles: Winning the Global Race to Market.

But mobile network coverage on the UK road network remains wanting

Almost 5,540 miles (2%) of British roads have no 2G coverage from any network provider, whereas only 124,570 miles (51%) and 173,635 miles (71%) have full 4G and 3G coverage respectively.

	Miles (%) of road in Britain with…		
	Full network coverage	Partial network coverage	No network coverage
2G	195,797 (80%)	44,368 (18%)	**5,540 (2%)**
3G	**173,635 (71%)**	66,619 (27%)	5,452 (2%)
4G	**124,570 (51%)**	107,187 (44%)	13,948 (6%)

eCall is useless here

Note: percentages might not add up to 100% because of rounding. Partial network coverage means that at least one, but no more than three, of the four network providers – Vodafone, O2, EE, Three - offers a signal.

Source: RAC Foundation analysis using Ofcom data, Dec 2018.

Looking into the future

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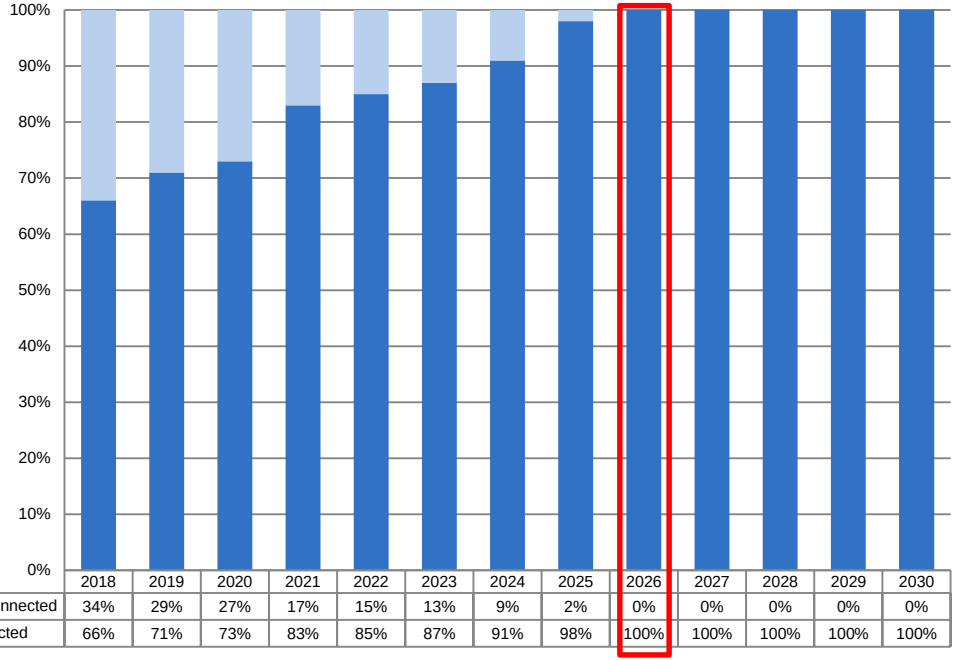
Forecast of connected cars as a proportion of UK new passenger car registrations



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Not Connected	34%	29%	27%	17%	15%	13%	9%	2%	0%	0%	0%	0%	0%
Connected	66%	71%	73%	83%	85%	87%	91%	98%	100%	100%	100%	100%	100%

Source: SMMT / Frost & Sullivan (2019), Connected and Autonomous Vehicles: Winning the Global Race to Market.

Potential 5G use cases

Illustration courtesy of Qualcomm

Only to be greeted by the potential 2G/3G switch-off later this decade

While 3G switch-off for the refarming of spectrum for 5G has long been expected, the potential ramifications of poorly planned 2G switch-off may be more damaging

eCall (pending NG eCall development)

Some telematics and connected vehicle services

Smart metering and smart (managed) charging

Thank you

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