All Party Parliamentary Group on
Artificial Intelligence

AUTONOMOUS VEHICLES

LEGAL & ETHICAL FRAMEWORKS IN AUTONOMOUS VEHICLE TECHNOLOGY



BIG INNOVATION CENTRE

October 2026
Policy Forum

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All Party Parliamentary Group on Artificial Intelligence

Rapporteur's Preface

Are we ready for a future in which machines make decisions that can determine life and death on our roads?

Autonomous vehicles are no longer a distant technological ambition. Driverless taxis are already carrying passengers on public roads, artificial intelligence is taking decisions once reserved for human drivers, and the prospect of a fundamentally different transport system is becoming a reality.

The potential is extraordinary. Autonomous vehicles could prevent thousands of accidents, transform mobility for people unable to drive, and create new industries and economic opportunities. But they also challenge some of our most fundamental assumptions about safety, human responsibility, trust and the relationship between technology and society.

If an autonomous vehicle makes a mistake, who is responsible? Can we ever fully certify an AI system whose decisions are not entirely predictable? Could connected vehicles become targets for cyberattacks? And what happens to the millions of people whose livelihoods depend on driving?

These are not hypothetical questions for a distant future. They are issues that governments, regulators, industry and society must confront as autonomous vehicles move towards wider deployment.

On 19 October 2026, the All-Party Parliamentary Group on Artificial Intelligence (APPG AI) brought together parliamentarians, industry leaders, legal experts, researchers and standards specialists at the House of Lords to examine these challenges.

One of the most striking tensions emerging from the meeting is **that delaying autonomous vehicles could mean foregoing technologies capable of saving lives, while deploying them without sufficient safeguards could introduce new risks that society is not yet prepared to manage.**

The UK has an opportunity to shape how this transition unfolds. The Automated Vehicles Act 2024 provides an important legislative foundation, but legislation alone cannot resolve every challenge. The real test will be how effectively technological innovation is matched by regulatory capability, industry responsibility and public confidence.

This report presents the evidence, the questions raised, and the implications for government, policymakers, regulators, industry and society. It is intended not only to inform the debate, but also to stimulate further discussion about the choices we must make as AI becomes increasingly responsible for decisions in the physical world.

The question is no longer simply whether autonomous vehicles can drive themselves. It is whether we can create the conditions in which they should.



Professor Birgitte Andersen
CEO, Big Innovation Centre
Secretariat, All-Party Parliamentary Group on Artificial Intelligence

INTRODUCTION

About this Evidence Session

This document is a structured transcript and summary of the principal evidence and discussion at the APPG AI evidence meeting held on 19 October 2026 in the House of Lords, Committee Room 1, UK Parliament. It captures the key elements of the evidence and discussion and is not intended to provide a complete verbatim record of all contributions.

The evidence presented reflects the perspectives and issues raised by the speakers and does not constitute formally agreed positions of the APPG AI.

DETAILS

- Evidence Session: Autonomous Vehicles: Legal & Ethical Frameworks in Autonomous Vehicle Technology
- Time: 5:30pm – 7:00 PM
- Date: Monday 19 October 2026
- Venue: UK Parliament: House of Lords, Committee Room 1

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EVIDENCE GIVERS

- **Jamie Hodsdon,** Policy Manager, UK and Western Europe, Waymo
- **Kevin Vincent,** Director, Centre for Connected and Autonomous Automotive Research (CCAAR) and National Transport Design Centre (NTDC), Coventry University
- **Marie-Claire Day,** Associate Director UK, Osborne Clarke
- **Dr Nick Reed, Founder,** Reed Mobility
- **Dr Laura May Bishop,** Digital Sector Lead, Artificial Intelligence and Cybersecurity, British Standards Institution (BSI)

APPG AI CO-CHAIRS AND RAPPORTEUR

The All-Party Parliamentary Group on Artificial Intelligence (APPG AI) is co-chaired by **Allison Gardner MP** and **Lord Clement-Jones CBE**.

Rapporteur: **Professor Birgitte Andersen**, CEO Big Innovation Centre

Terminology: Automated versus Autonomous Vehicles

The terms *automated vehicles* and *autonomous vehicles* are frequently used interchangeably, although they emphasise different aspects of vehicle technology.

Automated vehicles:

Automated vehicles use technological systems to perform driving tasks that would otherwise be undertaken by a human driver. Driving automation can range from limited assistance functions to systems capable of performing the entire driving task under specified conditions. In the UK, *automated vehicles* is the terminology used in the Automated Vehicles Act 2024, which establishes the legal framework for vehicles authorised to drive themselves.

Autonomous vehicles:

Autonomous vehicles generally refers to vehicles capable of perceiving their environment, making driving decisions and operating with substantial independence from direct human intervention. The term emphasises the vehicle's decision-making capabilities, often involving artificial intelligence, sensors and advanced software.

The distinction is not absolute. A highly automated vehicle may also be described as autonomous, and the terms are widely used interchangeably in research, industry and public debate.

In this report,

- 'Autonomous Vehicles' is used as the principal term when discussing AI-driven driving systems and their wider legal, ethical, technological and societal implications.

- 'Automated vehicles' is used where appropriate, particularly when referring to UK legislation, regulatory requirements and established technical terminology.



Autonomous Vehicles

Legal and Ethical Frameworks in Autonomous Vehicle Technology

Aim of Session

Autonomous vehicles and autonomous driving are advancing rapidly, bringing major opportunities for safer roads, reduced congestion, and enhanced mobility, but also raising significant legal, ethical, and societal questions. This session explored the frameworks needed to ensure autonomous transport is safe, accountable, and aligned with public values.

Key Policy Questions and Areas Examined

Core Policy Questions:

- **Autonomous Vehicle Technology and deployment:** What progress has been made, and what challenges remain for wider deployment?
- **Safety and certification:** How can AI-driven vehicles be tested, certified and continuously monitored?
- **Regulation and accountability:** Who is responsible when autonomous vehicles cause harm, and are existing laws sufficient?
- **Ethics and public trust:** How can we ensure responsible AI decision-making and build public confidence?
- **Cybersecurity:** How can autonomous vehicles be protected against cyberattacks and technology dependencies?
- **Societal impacts:** How can we balance technological benefits with employment, accessibility and affordability concerns?

Additional Questions Explored:

- How should insurance and financial liability be managed?
- What data transparency and regulatory oversight are needed?
- What role should technical standards and independent assurance play?
- How can autonomous vehicles interact safely with people and other road users?
- How can regulation support innovation and fair competition?
- What can the UK learn from international experience?
- How should autonomous vehicles integrate with existing transport systems?

Opening Remarks

Welcome to this evidence meeting of the APPG on *Autonomous Vehicles: Legal and Ethical Frameworks in Autonomous Vehicle Technology*.

As it happens, I've just come back from San Francisco, and of course there, driverless cars are no longer a novelty. They're simply part of the traffic. You see an empty driver's seat at every junction, and nobody turns their head.

And now, rather than just pootling around the centre of San Francisco, they go all the way down to Palo Alto, and they may even go as far as San Jose and so on. It's extraordinary, the reach now of these driverless cars.

I took a ride in one myself. They've got a new, more bubbly model. And what struck me was not the technology, but how soon it came to feel normal just sitting there without a driver in the car.

And I think, and it seems, that is the future now heading for London. It left me with one overriding thought. **When this technology arrives, it arrives pretty fast. The rules need to be ready before it does, not after.**

That's our subject tonight: the legal and ethical frameworks for autonomous vehicles.

On paper, the UK is quite well placed. The Automated Vehicles Act 2024 sets a safety standard at least as high as a careful and competent human driver.

It moves liability away from the person in the seat and onto the company behind the system.

But an Act is only as good as its secondary legislation, standards and enforcement. And much of that is still being written ahead of full implementation in the second half of 2027.

So, I would like to pose some questions.

- **When something goes wrong, who's accountable? And how does an injured person find out what actually happened?**
- How do we certify a system that learns and changes over time?
- How should a driverless vehicle behave around cyclists, pedestrians, wheelchair users and emergency services?
- What role do remote operators play, and how open will that be?
- And what about the people who drive for a living, and who shares in the benefits?
-

This is AI in the physical world. We don't often talk about that. And it's a real test of AI governance.

If we can't get accountability and transparency right where decisions are made in real time and lives are at stake, we will struggle in any other forum.



Lord Tim Clement-Jones CBE,
APPG AI Co-Chair



From left to right: Samantha Niblett MP, Iqbal Mohamed MP, Lord Taylor, Jamie Hodsdon (Waymo), Professor Birgitte Andersen (Big Innovation Centre, APPG AI Secretariat), Marie-Claire Day (Osborne Clarke), Lord Clement-Jones CBE, Allison Gardner MP, Martin Wrigley MP, Kevin Vincent (Centre for Connected and Autonomous Automotive Research (CCAAR) and NTDC, Coventry University), Dr Laura May Bishop, British Standards Institution (BSI) and Dr Nick Reed, Founder, Reed Mobility.



Dr Allison Gardner MP
(APPG AI Co-Chair)



Lord Clement-Jones CBE
(APPG AI Co-Chair)



Lord Taylor of Warwick
(APPG AI Honorary Vice Chair)



Samantha Niblett MP
(Parliamentary APPG AI Member)



Lord Taylor of Warwick
(Parliamentary APPG AI Member)



Martin Wrigley MP
(Parliamentary APPG AI Member)

FINDINGS

Summary
Implications for Stakeholders



Executive Summary

This section summarises the evidence and discussion at the APPG AI meeting. The findings, implications and priorities presented are drawn from the evidence and do not constitute formally agreed policy positions or recommendations of the APPG AI.

High-level Summary

Autonomous vehicles have the potential to transform transport, improve road safety and increase mobility. However, their successful deployment depends on addressing important legal, technical, ethical and societal challenges.

The evidence meeting highlighted five overarching messages:



1. **Safety:** Autonomous vehicles could significantly reduce road accidents, but their safety must be independently demonstrated and continuously monitored.

2. **Trust:** Public acceptance depends on predictable vehicle behaviour, transparency, explainability and accountability.

3. **Regulation:** The Automated Vehicles Act 2024 provides an important foundation, but challenges remain around AI certification, liability and cybersecurity.

4. **Societal impact:** Deployment could improve accessibility and create economic opportunities, but may also affect employment, affordability and existing transport services.

5. **Public benefit:** Success should be measured not only by technological performance, but by whether autonomous vehicles deliver wider benefits to society.

Key Findings from the Evidence



Road Safety and AI Testing

- **Accident prevention:** Autonomous vehicles offer significant potential to reduce accidents caused by human error.
- **Evidence of improved safety:** Waymo reported substantial safety improvements compared with human driving in its US operations.
- **AI certification challenges:** AI-based driving systems are probabilistic, creating challenges for conventional testing and certification.
- **Continuous safety assurance:** Safety evidence must include simulations, real-world testing and ongoing monitoring after deployment.
- **Different operating environments:** Performance in one country or environment cannot automatically be assumed to apply elsewhere.



Public Trust and Ethical Governance

- **Predictable vehicle behaviour:** Public trust depends on vehicles behaving safely, predictably and considerately towards other road users.
- **Beyond safety statistics:** Statistical evidence alone may not reassure passengers, pedestrians and cyclists.
- **Broader ethical considerations:** Ethical issues extend beyond the trolley problem to fairness, accessibility, transparency and accountability.
- **Transparency and oversight:** Regulators need access to operational data to understand vehicle behaviour and identify emerging risks.
- **Ethical standards:** National and international standards can help translate ethical principles into practical requirements.



Regulation, Liability and Accountability

- **Legislative framework:** The Automated Vehicles Act 2024 establishes important responsibilities for authorised self-driving entities.
- **Clear allocation of responsibility:** Greater clarity may be needed across manufacturers, software developers, suppliers and operators.
- **Insurance challenges:** Insurance remains difficult because of limited operational evidence and uncertainty over liability.
- **Effective enforcement:** Enforcement mechanisms, including potential criminal liability, are important for public confidence.
- **Balancing regulation and innovation:** Regulation must maintain safety standards while supporting innovation and competition.



Cybersecurity and National Resilience

- **Digital vulnerabilities:** Autonomous vehicles introduce cybersecurity risks involving software, connectivity and third-party suppliers.
- **Cyberattack threats:** Potential risks include fleet-wide cyberattacks, remote interference and vulnerabilities in technology supply chains.
- **Foreign technology dependencies:** Reliance on international technology providers raises additional security and resilience questions.
- **Cybersecurity by design:** Cybersecurity should be embedded in vehicle design, testing and ongoing operations.
- **Supply chain accountability:** Regulatory responsibilities across the wider technology supply chain require further consideration.



Societal and Economic Impacts

- **Improved mobility:** Autonomous vehicles could increase accessibility, particularly for people unable to drive.
- **Inclusive service design:** Services must accommodate disabled passengers and people requiring assistance.
- **Employment transitions:** Professional drivers may face disruption, creating a need for retraining and workforce transition planning.
- **Affordability and inequality:** Subscription-based services and expensive technology could increase inequalities.
- **Transport system integration:** Autonomous vehicles should complement public transport and support wider mobility objectives without unnecessarily increasing congestion or displacing existing services.

Implications for Stakeholders



UK Government

- **Cross-government coordination:** Coordinate autonomous vehicle policy across transport, AI, cybersecurity, industry and economic departments.
- **Public benefit:** Support safe deployment while ensuring that wider societal benefits are measurable.
- **Employment and taxation:** Assess workforce displacement, retraining needs and potential effects on public finances.
- **National resilience:** Address security risks associated with foreign technology dependencies.
- **Transport policy alignment:** Ensure autonomous vehicles contribute to wider transport, accessibility and mobility objectives.



Parliament and Policymakers

- **Legislative scrutiny:** Review the implementation and effectiveness of the Automated Vehicles Act 2024.
- **Regulatory powers:** Examine whether regulators have sufficient authority to access safety and cybersecurity data.
- **Legal accountability:** Assess whether liability and responsibilities are clearly allocated across the technology supply chain.
- **Economic and consumer impacts:** Consider implications for employment, competition, insurance and consumer protection.
- **Responsible innovation:** Ensure legislation supports technological progress without compromising safety or public trust.



Regulators

- **AI testing and certification:** Develop robust methods for evaluating and certifying probabilistic AI systems.
- **Continuous safety monitoring:** Require consistent reporting of incidents and operational performance.
- **Data access and intervention:** Establish appropriate access to vehicle data and powers to intervene when risks emerge.
- **Cybersecurity oversight:** Strengthen supervision of digital security and supply chain vulnerabilities.
- **Regulatory expertise:** Maintain sufficient technical capabilities to assess rapidly evolving technologies.



Autonomous Vehicle Industry and Technology Developers

- **Demonstrable safety:** Provide transparent evidence through testing, simulation and real-world operations.
- **Responsible system design:** Embed cybersecurity, ethical principles and accountability throughout development.
- **Road user protection:** Ensure vehicles behave predictably around pedestrians, cyclists and other road users.
- **Accessible services:** Design inclusive transport services and provide appropriate passenger assistance.
- **Stakeholder collaboration:** Work with regulators, local authorities and transport providers to support responsible deployment.



Standards Bodies, Researchers and Certification Organisations

- **Technical and ethical standards:** Develop standards relevant to autonomous vehicles, covering AI safety, cybersecurity, transparency and ethical design.
- **AI verification and validation:** Improve methods for assessing the reliability and safety of probabilistic AI systems.
- **Consistent safety assessment:** Support common terminology, standardised testing and comparable safety reporting.
- **Human–technology research:** Investigate public trust, human–vehicle interaction and accessibility.
- **Independent evidence:** Provide research and technical assurance to support regulatory and industry decisions.



Insurance and Financial Services

- **Risk-based insurance:** Develop insurance models that reflect the emerging risks of autonomous vehicles.
- **Liability allocation:** Clarify how financial responsibility should be distributed between manufacturers, operators and suppliers.
- **Cybersecurity and systemic risks:** Assess the financial consequences of cyberattacks and large-scale system failures.
- **Evidence-based risk assessment:** Use operational safety data to improve risk evaluation and insurance affordability.



Local Authorities and Transport Providers

- **Transport integration:** Integrate autonomous vehicles into existing transport networks and services.
- **Local transport impacts:** Assess implications for congestion, public transport, taxis and freight operations.
- **Accessibility and mobility:** Ensure deployment responds to local transport needs and accessibility requirements.
- **Community engagement:** Involve local communities and road users in decisions about introducing autonomous services.



Workers, Passengers and Wider Society

- **Workers:** Prepare for changes to driving occupations through retraining and skills development.
- **Passengers:** Benefit from safe, affordable and accessible autonomous transport services.
- **Disabled people:** Participate in service design to ensure practical accessibility.
- **Pedestrians and cyclists:** Receive appropriate protection through predictable vehicle behaviour.
- **Wider society:** Have access to transparent information about safety, risks and the benefits of deployment.

Priority Areas for Further Policy Consideration

The evidence identifies six areas that warrant further attention:

1. **AI safety assurance:** How can probabilistic AI systems be independently tested, certified and continuously monitored?

2. **Cybersecurity:** Are existing requirements sufficient to address fleet-wide threats, third-party suppliers and foreign technology dependencies?

3. **Liability and accountability:** Are responsibilities and insurance arrangements sufficiently clear across the autonomous vehicle ecosystem?

4. **Public trust:** What transparency, explainability and data-sharing arrangements are needed to establish confidence?

5. **Societal benefits:** How can government ensure accessibility, affordability, employment transitions and fair distribution of benefits?

6. **Innovation and competition:** How can the UK maintain high safety standards while encouraging startups, investment and market competition?

Three conditions were highlighted as central to responsible deployment:



Demonstrable safety: Independent evidence, continuous monitoring and effective cybersecurity.



Clear accountability: Transparent responsibilities, enforceable regulation and effective oversight.



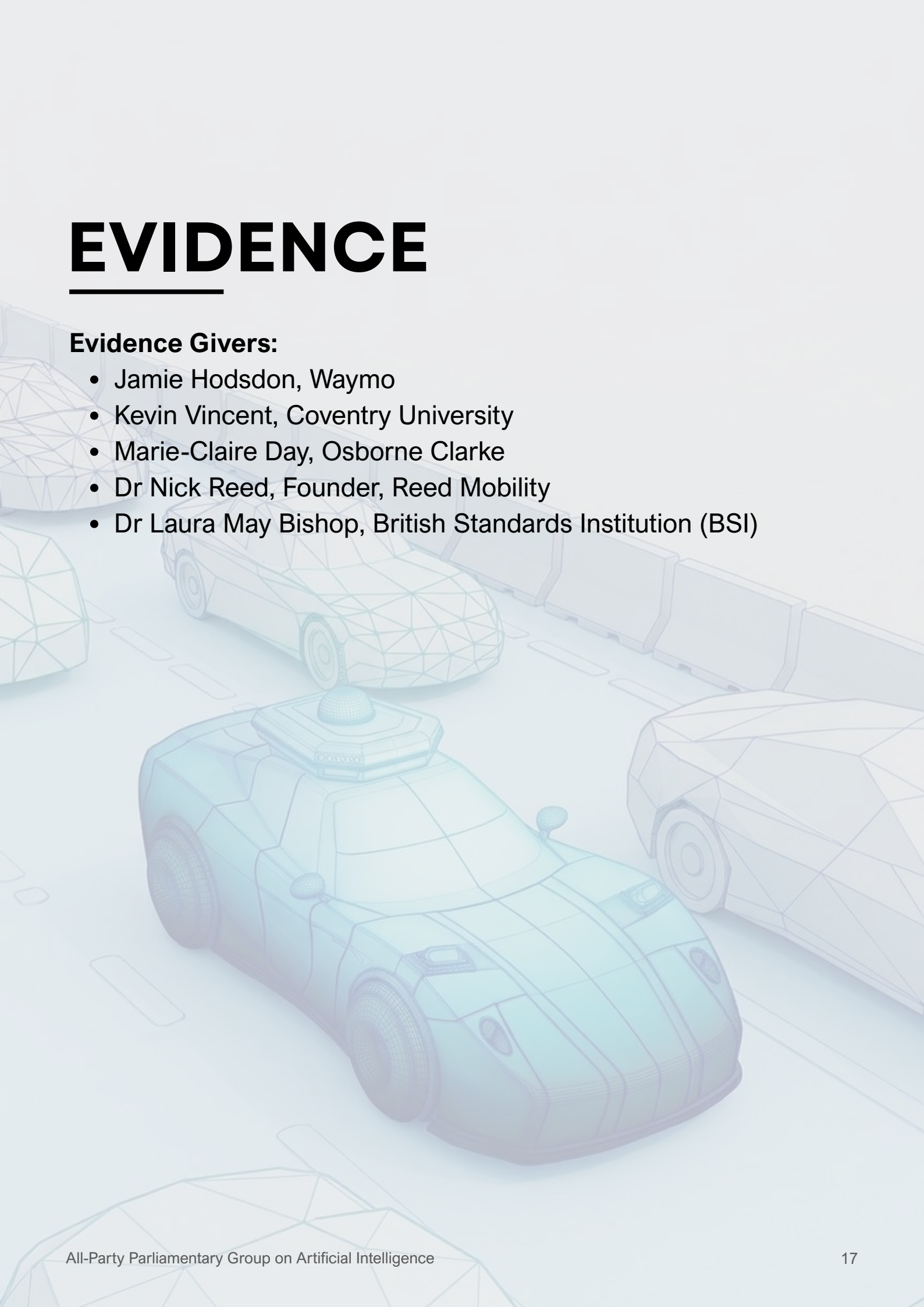
Public benefit: Accessible and affordable services, responsible employment transitions and integration with wider transport objectives.

The central policy challenge is to **enable innovation while ensuring that autonomous vehicles are safe, trusted, accountable and beneficial to society as a whole.**

EVIDENCE

Evidence Givers:

- Jamie Hodsdon, Waymo
- Kevin Vincent, Coventry University
- Marie-Claire Day, Osborne Clarke
- Dr Nick Reed, Founder, Reed Mobility
- Dr Laura May Bishop, British Standards Institution (BSI)





> **Our data to date shows that we can make roads safer.**

Jamie Hodsdon

Waymo

Policy Manager, UK and Western Europe

Industry and deployment

Key message - Demonstrating safety through real-world evidence: *Autonomous vehicles have the potential to substantially improve road safety. Successful deployment requires robust safety evidence, continuous monitoring, regulatory oversight and engagement with local authorities to build public confidence.*

1. Introduction: Waymo's Experience and Plans for London

My name is Jamie Hodsdon. I'm Policy Manager for the UK and Western Europe at Waymo. I previously worked at the Department for Transport (DfT), where I headed up the Future Automated Vehicle Regulation Team. So, I'm very familiar with the legislation and more than happy to answer questions about it.

In terms of Waymo, who are we?

We were spun out of Google almost a decade ago now. Since then, we've expanded our operations across 15 US cities, covering an operating territory of over 1,600 square miles. To date, we've driven roughly 270 million autonomous passenger miles, so we have a lot of experience deploying this technology.

Obviously, we've heard that lots of different people have experienced our technology in the US, and we're very excited to be bringing our technology to London, hopefully this year.

You may have seen our vehicles driving around on London's roads at the moment. They still have a safety driver in them, which is really important. We still have to progress through the approval process.

At the moment, we're testing the technology and gathering the evidence we need to demonstrate safety to the Department for Transport. I can talk about that a bit more as well.

There are really three points I'd like to make today.

1. First, UK legislation is very much the most comprehensive in the world, and there's a reason why Waymo chose the UK first for its European deployment.
2. Second, our data to date shows that we can make roads safer, and that's what we're hoping to bring to UK roads as well.
3. And finally, we are very much focused as a company on creating local value and new, highly skilled jobs.

2. The UK's Regulatory Framework for Autonomous Vehicles

In terms of the legislation, as I said, it's our view that the UK has the most comprehensive autonomous vehicle legislation in the world.

- The Automated Vehicles Act 2024 was developed over the course of more than 10 years.
- The Department for Transport set up the Centre for Connected and Autonomous Vehicles back in, I think, 2015.
-

Since then, through the Law Commission's work, which was a four-year project involving extensive consultation, the Automated Vehicles Act has very much been the outcome of all that consultation – a 10 years of consultation.
On top of that, we also have work that's been developed at the United Nations. Many vehicle regulations are developed at the UN level, and autonomous vehicles are no different.

I think that regulation itself, which is almost here and almost coming into force, has been developed over the course of eight years - I think over eight years.
The UK has been a leading participant in the development of that regulation. So, we actually have more legislation on autonomous vehicles in the UK than in the European Union, which sometimes takes people by surprise.

But that's actually why Waymo came to the UK first.

That legislation, that regulatory approach, and the consultation process, which Waymo has been part of for almost a decade, very much give us the legal certainty we need in order to deploy safely.

3. Legal Responsibility, Liability and Accountability

A key part of that legislation is understanding why the Automated Vehicles Act exists.

It exists because it's important to establish who is responsible when things go wrong, but also to support the development of the technology itself. If you remove the driver, who is going to bear responsibility?

- That's what the Automated Vehicles Act 2024 does. It establishes who's liable and who's responsible.
- The Automated and Electric Vehicles Act 2018 ensures that victims receive compensation promptly.
- But the 2024 Act is very much about creating that safety regime.
- The regime also imposes criminal sanctions on senior company officials who mislead the regulator.

So there's a very robust regime in place in the UK, or one that will be in place by 2028.

We think that's really important because it clarifies who is responsible and helps us develop the technology safely.

4. Evidence of Safety Improvements from Autonomous Vehicles

In terms of safety to date, we believe our evidence from the US is showing how we can make roads safer. There are really two ways in which we've demonstrated this.

- One is that we've driven, as I said, over 270 million autonomous passenger miles. That enables us to start making comparisons with human drivers and asking how much safer our technology is than human drivers.
- But we also take a **safety-by-design approach**.

In London, for example, you'll all be aware that 20 miles an hour is a common road speed. That's not the case in the US. Nonetheless, we think our technology offers real opportunities to improve safety for vulnerable road users. Roughly 81% of people killed or seriously injured in London today are vulnerable road users.

We think our technology, through multiple means - including the way the sensors are designed and the way we develop the technology - can bring those safety benefits to London just as much as we have in the US.

5. Improving Safety at Junctions and Protecting Vulnerable Road Users

Really importantly, as part of that, if you look at junction safety, I think something like 5% of junctions in London account for 50% of incidents involving people killed or seriously injured.

We have a **95% improvement in safety at junctions**. That's because of how we design the technology and the removal of the driver.

So we think there are really strong opportunities for our technology to improve safety on London's roads.

6. Local Investment, Infrastructure and Highly Skilled Jobs

Finally, we're not an asset-light company. Wherever we operate, we have to set up service centres.

In London, we'll have two service centres, and we're already setting up that local infrastructure.

We've invested tens of millions of pounds in establishing that infrastructure, which has created hundreds of jobs locally.

As we start to expand the fleet, you'll see that, as in the US, we have to create a really skilled local workforce to support that fleet.

Whether that's engineers, maintenance personnel, remote dispatchers, remote assistants or customer support, these are all roles we have to create from scratch because they're new roles, and they're very highly skilled jobs.

For us, that's a really important offer to cities wherever we deploy: creating those local skills and that workforce.

7. Why the UK Is Well Positioned for Autonomous Vehicle Deployment

Overall, I think the UK is really well positioned for the deployment of autonomous vehicles. It's done a lot of thinking - far more thinking than some countries - and that has created a really robust regulatory regime.

Waymo, as a company, believes our safety data shows that we can make London's roads safer, as well as the roads of any other UK city in which we deploy.

And importantly, we're creating those local jobs as well.

That's a really important part of our deployment wherever we operate.

8. Responding to Barriers to Autonomous Vehicle Deployment in the UK

What is the single biggest barrier to achieving the kind of autonomous vehicle deployment that we now see in San Francisco?

Look, this technology is new to the UK. In the US, we've been operating in San Francisco alone since 2023, so a lot of people have simply become used to that technology.

Early on, we started with a very small operating territory.

- We've built trust through deploying the technology and through demonstrating the safety data.
- We've worked with the regulator to make sure the technology is meeting its requirements.

So I wouldn't pose it so much as a question of barriers in the UK.
Actually, I think we have good reason to believe that we'll be able to deploy this year.

- We're just working through a situation where lots of authorities, local authorities in particular, have many things to worry about, well beyond autonomous vehicles.
- At the moment, we're working with them to help educate them about the regulatory regime.

I think once we've built that trust and educated the various stakeholders, we'll start to see a broadening of deployments.



> **It's not a one-and-done process. You don't just get your approval from the Secretary of State and then go off and operate.**

Kevin Vincent

Coventry University

Director, Centre for Connected and Autonomous Automotive Research (CCAAR) and National Transport Design Centre (NTDC)

Research, testing and validation

Key message - Continuous safety assurance and responsible deployment: *Autonomous vehicles require more than initial regulatory approval. Their safety must be continuously assessed through rigorous testing, independent certification and reliable AI training data, while deployment must address societal needs, accessibility and integration with existing transport services.*

1. Introduction: Research, Standards and Remote Operations

As well as being the Director of CCAAR, I sit on the UK Auto Council's Connected and Automated Mobility Working Group, and I'm a member of the National Digital Hub Advisory Group. That might become relevant a little bit later.

I'm also a technical co-author of BSI 1887, Human Factors for Remote Operations of Automated Vehicles. I think that's quite a relevant topic across the core areas that we'll be discussing.

2. Regulatory Framework: Defining the Use Case and Societal Readiness

In terms of a framework for regulation, I think there are a number of questions that need to be answered first.

What is the use case, and why would we implement such a service?

We need a societal readiness framework in place with local transport authorities to determine what kind of self-driving service is needed and what the demand is, before implementing services in a manner compliant with standards and regulation.
So what is that demand, and what could that service be?

It could be private passenger taxis. It could be private vehicles with more highly developed self-driving capabilities.

Or, my personal preference, based on the work I'm doing at the moment, is around public shared transport - public service vehicles.

That leads to questions about how the framework needs to encompass a set of verification and validation requirements that will lead to authorisation from the Secretary of State, but also provide enough information to support an operating permit from a local authority.

I'm putting the boundaries quite widely here to help local authorities have the information they need to grant operating permits to automated vehicle services.

3. Economic and Societal Benefits: Supplementing Existing Public Transport

The other question is: Where's the benefit to the local economy?

When we started on this journey, we were promised less congestion, less pollution, improved safety and benefits to the economy in terms of jobs.

On that front, I think the procurement of a service within this regulatory framework needs to consider that **connected and automated mobility services should supplement, not supplant, existing shared transport services.**

It's about filling the gaps that exist and enabling point-to-point journeys.

For example, we might have a Waymo that takes us from our front door to a transport hub, where we might catch an automated vehicle or use a different type of transport to reach another hub.

That's where AI starts becoming quite important, because it begins managing those interactions - those intermodal interactions. That needs to be built into the framework, perhaps not so much in terms of the ethics of it, but in terms of the reasons why we would introduce these services in the first place.

4. Accessibility and Inclusion: Designing for All Passengers

The other question is: is it accessible and inclusive?

We have existing regulations that need updating.

The Public Service Vehicles Accessibility Regulations need to be updated to cover a wider scope of vehicles with different control systems, including vehicles that might not have a human operator on board.

We need regulations that help us design vehicles capable of assisting, for example, a wheelchair user accessing a vehicle when there's no human on board. It might not simply be a case of having a ramp. Who operates the ramp? Is that done through an app that you use to pre-order the service? Does the AI on the system understand the user and adapt accordingly?

So it's not just about the verification and validation of the system. It's about the ongoing extension of the services that can be offered to make the customer journey more inclusive and acceptable.

5. Vehicle Safety: Moving Beyond Dependence on Digital Infrastructure

And then, is it safe? In days gone by, there was a certain belief that we needed digital infrastructure and communications to make these automated systems safe. Not any longer. The technology now exists on the vehicle and within the network so that, with the right self-driving software, the vehicle is safe. **It doesn't need communications, in my view, to be safe.**

That puts the onus on the system within the vehicle, so that the AI system used to develop the software stack is safe, auditable, traceable and explainable.

The policy is that an authorised self-driving system should be at least as safe as a careful and competent human driver. I believe this is now included in one of the clauses of the global technical regulation being developed through UNECE (United Nations Economic Commission for Europe).

6. Verification and Validation: Demonstrating Safety Before Deployment

It's currently unclear how that safety standard can be evidenced in advance as part of the framework for obtaining authorisation. If we go through a system of verification and validation, we will inevitably use AI to discover what to test, how to test and when we can afford to stop testing, so that we've got a safety case that's as comprehensive as possible. How do we evidence that the system is going to be safer?

It's an ongoing issue, but it needs to be addressed.

It's not a one-and-done process. You don't just get your approval from the Secretary of State and then go off and operate. It has to be continuously evaluated on an ongoing basis. I believe that's where the legislation is going at the moment.

7. Continuous Safety Assurance: Simulation, Physical Testing and AI Learning

The evidence therefore needs to include not only virtual simulation using AI, but also physical correlation and validation.

I also believe that the latest UNECE GRVA (Working Party on Automated/Autonomous and Connected Vehicles) regulations propose that AI should not be used in deployment on live vehicles to learn and train.

Now, that might be a risk, because you would naturally think that you want vehicles to learn as they go. But the proposition at the moment is that AI should not learn and train during live deployment.

Instead, that learning and training should take place in a safe engineering environment before the system is updated over the air.

8. Generative AI Opportunities: Mapless and map-based technologies

The opportunities for generative AI are huge, both at the vehicle end, the system end and the customer end.
There are mapless and map-based technologies, and map-based technologies are relatively dumb.

We need AI to be certified independently so that vehicles can operate without relying on maps and can create a resilient service. In other words, a vehicle relying on a fixed map, if it comes up against an unexpected object, will stop and effectively ask: "Now what do I do?" The remote operator then has to intervene and determine whether it's safe to proceed or whether somebody needs to be dispatched to resolve the problem.

Whereas a mapless vehicle can learn, find its own way and use efficient path planning to get past the obstruction. This creates opportunities for more resilient and adaptable autonomous vehicle services.

9. AI Evaluation Frameworks: Ground Truth, Training Data and Ethics

As part of our work with the AI Security Institute, we undertook a project to create an evaluation framework for AI.

One of the main considerations was: **how can we be sure of the ground truth of the data used for training?** That speaks directly to the ethics of it.

For example, if you have a participant group of humans providing digital driving commentary to create a large language model, what is the ground truth of that information? Have those participants been recruited ethically?

The methodology and evaluation framework need to encompass those considerations.

10. Conclusion: Societal Readiness, Independent Certification and New Supply Chains

One final point in conclusion.

The framework has to demonstrate societal readiness, define the operational design domain, establish ethical approval and provide sufficient evidence and ongoing procedures for the independent certification of the AI used in developing the software stack.

In that way, we'll create new supply chains that are non-traditional, depending on who the customer and consumer is.

Supplementary Written Evidence by Kevin Vincent

The following summary draws on additional written evidence submitted by Kevin Vincent, highlighting research findings and regulatory considerations not developed in detail during his oral presentation.

1. Ensuring the Reliability of AI-Generated Driving Data

Autonomous vehicles rely on AI systems that must be trained and tested to recognise and respond safely to a wide range of driving situations. Developers increasingly use **synthetic data - artificially generated driving scenarios -** to support the development and testing of these systems, including situations that would be difficult or dangerous to reproduce on public roads.

However, this raises an important safety question: **How can we be confident that AI-generated driving scenarios accurately reflect real-world conditions?**

Vincent's written submission highlights findings from **SynSafeAV**, a Coventry University research project funded by the AI Security Institute, which examined the reliability and risks of synthetic driving data.

The project identified three principal risks:

Real-world mismatch: Synthetic data may not accurately represent the complexity and unpredictability of real driving conditions.

- **AI hallucinations:** Generative AI may produce unrealistic or inaccurate driving scenarios that could undermine the reliability of training and testing.
- **Regulatory compliance:** The use of synthetic data must meet relevant legal and regulatory requirements.

To address these challenges, the project developed a multidimensional evaluation framework to assess the **quality, reliability and real-world faithfulness of AI-generated driving data**, using different methods to identify errors, inconsistencies and potential weaknesses.

The central implication for autonomous vehicle safety is that **AI-generated data must itself be rigorously evaluated before it can be relied upon in developing and testing self-driving systems**. Synthetic data can support safety assurance, but it does not remove the need for physical testing and independent verification.

2. Regulatory Accountability, Insurance and Responsible Deployment

Vincent's written evidence also emphasises the importance of establishing clear responsibilities across the autonomous vehicle supply chain.

He proposes considering **layered levels of responsibility** among organisations involved in developing, supplying and operating autonomous vehicle systems. Such arrangements could support clearer accountability and facilitate the provision of appropriate and affordable insurance.

Supplimentary material

His written submission identifies seven areas in which evidence may be required, depending on the intended use of the autonomous vehicle service:

- **Societal need and readiness:** Evidence that the proposed service addresses an identified transport need and that the relevant community and infrastructure are ready for deployment.
- **Operational design domain:** An approved definition of the conditions and environments in which the autonomous vehicle system is intended to operate.
- **Ethical approval:** Appropriate ethical approval for generative AI methods used in system development.
- **Safety assurance:** Successful virtual and physical safety testing, supported by explainable reasoning.
- **Responsible organisations:** Evidence that the organisations responsible for the system and its operation are suitable and capable of fulfilling their obligations.
- **Ongoing maintenance and security:** Procedures to maintain safe and secure operations following deployment.
- **Standards and regulatory compliance:** Certification and compliance with relevant standards and regulations, including a clear roadmap for meeting emerging requirements.

Together, these considerations reinforce the need for a regulatory framework that extends beyond initial vehicle authorisation to encompass **continuous safety assurance, ethical AI development, clear organisational accountability and ongoing regulatory oversight**.



> **I feel quite strongly about that there is a gap in the supply chain not being directly regulated.**

Marie-Claire Day
Osborne Clarke
Associate Director, UK
Liability and accountability

Key message - Closing Regulatory Gaps in Cybersecurity and Supply-Chain Accountability: *The UK's autonomous vehicle framework provides an important regulatory foundation, but gaps remain in the direct regulation of cybersecurity risks across complex technology supply chains. Clear accountability is essential to ensuring safety and protecting the public.*

1. Introduction: Liability, Accountability and Cybersecurity

I'm Marie-Claire Day. I'm an Associate Director at Osborne Clarke, a law firm. I'm based in London, working in the commercial team, and we've worked for a very long time in transport and mobility technology specifically.

I've been working in mobility technology for over 10 years, increasingly in recent years steering towards autonomous vehicles.

I'm here today to talk, to an extent, about liability and accountability, but there's obviously so much I could say about this. Having spoken with clients over the years, it was quite hard to narrow it down to one aspect.

I thought cybersecurity might actually be an interesting one, as it has come up quite a lot.

As has already been said today, the UK's Automated Vehicles Act 2024 is widely seen around the world as revolutionary and innovative. It creates an enabling legislative framework to provide certainty for those looking to roll out autonomous vehicles across the UK. But obviously, so much of that depends on the secondary legislation and how we shape it.

2. Autonomous Vehicles as Part of a Complex Digital Ecosystem

To start with, as I'm sure we all know, an autonomous vehicle is not simply a car.

It is a node in a complex digital ecosystem, running on over 100 million lines of code.

It draws on cloud computing, AI-driven perception, real-time data mapping and over-the-air software updates, just to name a few.

These technologies are usually, although not always (especially when we're looking at Waymo, for example) sourced from multiple suppliers. So, it's not just one provider creating the whole autonomous vehicle technology stack or the connectivity that surrounds it. We've got lots of suppliers and sub-suppliers to think about.

3. Cybersecurity Threats: AI Vision Systems, GPS Spoofing and Vehicle Connectivity

The attack surfaces are real and have been demonstrated in practice.

Researchers have shown, for example, that small stickers placed on stop signs can cause an autonomous vehicle's AI vision system to misread the sign as a speed limit sign.

That can confuse the vehicle into continuing as though it has simply encountered a change in speed limit, without necessarily recognising that anything is wrong.

We've seen similar issues with GPS spoofing, which can cause connected vehicles to navigate incorrectly.

Increasingly, we're also looking at vehicle-to-everything (or V2X), communications, which inevitably expand the cyberattack surface.

These include connections between vehicles and other vehicles, vehicles and pedestrians, vehicles and infrastructure, and vehicles and network or cloud services.

So obviously, for a malicious actor, there are many potential points through which to attack a vehicle.

4. Existing Cybersecurity Standards and Vehicle Type Approval

In the UK, as we've discussed, we have a very comprehensive regulatory framework.

We also have ISO standards and United Nations regulations.

Particularly from a cybersecurity perspective, we have UN Regulations 155 and 156, which are now integrated into the GB type-approval scheme.

I think the critical point to make today is that **these obligations are imposed on the vehicle manufacturer when seeking type approval.** It is up to the vehicle manufacturer to prove that the vehicle as a whole is safe and meets these standards.

But with this context in mind, I'd like to turn to the liability architecture under the Automated Vehicles Act.

5. Liability Under the Automated Vehicles Act 2024

Under the Act, we have the Authorised Self-Driving Entity (or ASDE), which is typically the vehicle manufacturer, although it might be the autonomous vehicle technology stack developer.

They are the ones who essentially seek authorisation for the vehicle and bear ultimate responsibility for ensuring that the vehicle continues to meet the self-driving test.

Then, where the vehicle operates without a driver inside it, we have the No User-in-Charge (NUIC) Operator, who also carries responsibility for ensuring and overseeing the safe operation of those journeys.

That makes sense as a liability framework on its face.

But it rests on a significant assumption: **that the Authorised Self-Driving Entity and the operator have full visibility and control over the cybersecurity of the systems on which their vehicles depend.**

6. The Cybersecurity Accountability Gap Across the Supply Chain

In fact, the Authorised Self-Driving Entity (ASDE) will rarely have access to the underlying source code or system architecture.

Vulnerabilities have been proven to sit deep within sub-supplier software, sometimes invisible to the vehicle manufacturer until they are exploited later on.

Where a component relies on a cloud service or receives over-the-air updates, the security posture of that system can change after the vehicle has been authorised, potentially without the ASDE's knowledge or consent. Of course, this depends on the extent to which the ASDE relies on third-party suppliers.

We have the concept of standards, including ISO standards and UN Regulation 155, with which manufacturers must comply. But the process imposes the obligation on the vehicle manufacturer or ASDE.

They then need to rely on their contracts with third-party suppliers to flow those cybersecurity obligations down across the supply chain.

7. The European Union's Cyber Resilience Act: Direct Obligations on Suppliers

The European Union has recognised that there is a gap here.

In the EU, we have the Cyber Resilience Act.

The Cyber Resilience Act is a horizontal regulation requiring manufacturers of digital products placed on the EU market to meet baseline cybersecurity standards, maintain a software bill of materials and actively disclose vulnerabilities, including reporting when vulnerabilities have been detected.

So it reaches those component manufacturers directly.

The EU has also published the ICT Supply Chain Security Toolbox.

While not binding, it accompanies the European Union's Cyber Resilience Act (CRA) and goes further by providing a structured framework for assessing not just whether a product is secure, but whether the supplier itself is secure.

That includes consideration of whether the supplier operates under foreign governments' laws that may compel access to its systems or data.

8. The UK's Cybersecurity Framework and Its Limitations

In the UK, don't get me wrong, we recognise the risk in the supply chain.

We have the Self-Driving Vehicle Pilot Scheme Cybersecurity Framework, the National Cyber Security Centre's Cyber Assessment Framework, and the Department for Transport's Key Principles of Vehicle Cyber Security. All of these identify the supply chain as a risk.

We also have the Cyber Security and Resilience Bill, which is currently with the House of Lords. This could, in principle, be extended to include autonomous vehicle operators and autonomous vehicles if they are designated as critical services under the Bill.

But even then, as it stands, that would not cover the full supply chain.

So I think we do have a gap.

9. Building Public Trust Through Supply Chain Cybersecurity Accountability

I'm not going to say that we need regulation for regulation's sake. But in building public trust, we need to recognise that we're not dealing with traditional vehicles here.

It is a recognised risk that the Authorised Self-Driving Entity (ASDE) or the operator is shouldering the burden and has to rely on contracts to ensure that cybersecurity is fully monitored and that systems remain safe and secure.

To build public trust and shape secondary regulation, I think we need to start thinking about how we might fill that gap. Perhaps regulation could apply directly to those across the full supply chain, so that they also have direct cybersecurity responsibilities.

I'm not saying we should change the overall regulatory framework. I think it does need to stay as it's currently structured. But we do have this gap across the supply chain.

10. Avoiding Unnecessary Regulatory Complexity

It may be that, with the Automated Vehicles Act already in place, we can address this through the existing framework. Certainly, we don't want to create unnecessary layers of legislation. A colleague of mine describes EU legislation as a ‘lasagna’.

I'm not suggesting that we start building a whole new layer of legislation.

11. Conclusion: Addressing Cybersecurity in Secondary Legislation

I think we do have the Automated Vehicles Act framework, and cybersecurity across the supply chain should be something we're thinking about when shaping the secondary legislation.

The same applies to the Cyber Security and Resilience Bill, which is going through Parliament at the moment.

There is potential there to capture some elements that aren't currently covered.



> **They need Automated Vehicles (AVs) to be compliant, considerate, communicative and predictable.**

Dr Nick Reed
Reed Mobility
Founder

Ethics, public trust and interactions with other road users

Key message - Earning Public Trust Through Safe and Ethical Behaviour: *Autonomous vehicles must not only demonstrate safety but also behave in ways that other road users can understand, anticipate and trust. Responsible deployment requires transparency, independent safety evidence and consideration of wider ethical and societal impacts.*

1. Introduction: From Technological Promise to Public Benefit

I have a background in psychology, a career in road safety and automated vehicles and work independently through my company, Reed Mobility. I served as National Highways' Chief Road Safety Adviser and contributed to the European Commission's expert group on the ethics of connected and automated vehicles. My focus today is how we turn the promise of automated vehicles into demonstrable public benefit, guided by ethical principles.

Historically, the ethics of automated driving has been confined to discussion of so-called trolley problems - how should a vehicle behave in specific, defined situations. However, the ethical dimensions of automated driving are far broader.

My argument is that we should welcome the potential of automated vehicles while requiring clear evidence that they deserve our trust and deliver the benefits as advertised.

2. Road Safety: The Opportunity and the Need for Continuous Evidence

Road deaths, almost without exception, are preventable tragedies. Behind every death are families, friends and communities changed permanently by sudden traumatic loss. Often, human error is at the heart of why a crash occurs.

The road safety opportunity from Automated Vehicles (AVs) comes from their 360 degree sensing, super-human responses and road rule compliance - and, unlike human drivers, they don't become tired, distracted, impatient or intoxicated.

This does not mean they are perfect and doesn't rule out new forms of risk emerging. However, this suggestion of improved road safety is no longer just a theory. Waymo reports 95 per cent fewer serious injury crashes than equivalent journeys by human drivers. And data from each journey supports future learning. Automated Vehicles (AVs) today are as good as they have ever been but also the worst they will ever be - they are going to get better and better and better.

Impressive as this is, evidence for one system operating under particular conditions does not establish that another developer's vehicle will perform equally well, or that the same performance will automatically transfer to British roads. The ethical obligation is to demonstrate safety continuously.

3. Public Trust: Safe, Predictable and Considerate Driving

Human driving is also a social task. We don't always get it right but hundreds of millions of years of evolution has given us natural instincts to prevent harm, to interpret intentions, to anticipate mistakes and to negotiate ambiguous situations.

AVs must operate in the context of this 'messy' human environment. When AVs act in ways that seem counterintuitive or surprising to us, it threatens our trust in the technology and the public will be unforgiving as a result - regardless of statistical proofs of safety.

In my work for the Department for Transport (DfT) exploring the public's views of careful and competent driving for AVs, their frame of reference was not statistics but the behaviours they observe. They need AVs to be compliant, considerate, communicative and predictable.

This is not new news, in a fascinating 1959 road safety debate in this House, the 1st Baron Elton observed that the harms caused by vehicles were "one of the gravest social evils of to-day whose present dimensions the general public is so completely unaware as to be almost, one might say, unaware of its very existence." - he continued "impersonal statistics are often less convincing than individual cases". The challenge therefore is to develop systems that achieve a statistically acceptable level of performance *and* behave in ways that people can understand and reasonably trust.

4. Ethical Governance: Transparency, Explainability and Accountability

The European Commission's AV recommendations on ethics addressed road safety, privacy, fairness, explainability and responsibility. Those considerations are closely connected. A vehicle's behaviour reflects choices about its design, development, testing and commercial operation. Accountability therefore lies with the organisations making those choices – and makes transparency and explainability of Automated Vehicle (AV) operation essential.

Regulators should be able to examine what a vehicle detected, which hazards it recognised and how that assessment informed its actions - not just when things go wrong but in each mile driven. We should seek evidence that vehicles anticipate hazards and adapt their behaviour accordingly. Where this is not happening, we can prompt intervention before someone is harmed.

This requires a careful, proportionate approach: meaningful regulatory access to safety evidence alongside suitable protection for personal information and legitimate commercial interests.

5. Societal Benefits: Accessibility, Employment and Transport Integration

Ethics also requires us to ask who receives the benefits. Accessible mobility is often promised but is a service suitably inclusive to ensure all passengers can book the service, board the vehicle, secure their wheelchair and obtain help if the journey goes wrong? Disabled people must be involved in shaping these services from the outset.

Employment deserves the same practical attention. New jobs in technology and fleet operations will not necessarily be available to the people whose driving work disappears.cGovernment and the AV sector should work together to plan those transitions with affected workers and industries.

And we must assess the transport system as a whole. Individually safe vehicles could still increase congestion or draw passengers away from safe public transport modes. AV deployment should support our wider transport objectives.

6. Three Recommendations for Responsible Deployment

I close with three recommendations.

First, require continuing, independently scrutinised evidence of safety, including the effects on different groups of road users and with consideration for how this evidence helps relevant stakeholders to calibrate trust in AVs.

Second, make societal benefits explicit objectives: we need accessible, inclusive services, responsible employment transitions and smooth integration of new options with existing public transport and active travel provision.

Third, ensure regulators have the powers, expertise and access to data needed to evaluate AVs against these objectives and apply sanctions as necessary.

7. Conclusion: The Ethical Cost of Action and Inaction

Finally, I want to reflect that there is both an ethical cost to deploying this technology prematurely - but also an ethical cost to delaying a technology that could prevent death and serious injury. I strongly believe that there is no way in which we will achieve the ambitious goals of the national Road Safety Strategy without a significant contribution from the widespread deployment of AVs.

Our responsibility is to establish the evidence and safeguards that allow us to act confidently and with the trust of the public. The individuals may never know it, but many lives will be saved by this technology. Parents who will keep their children; children who will keep their parents. Families who will never experience the lifelong trauma of sudden, violent bereavement.

Let's do this, let's do it right, let's do it together.

Thank you.



> **We trust what is ethical and expected, but we can only expect what is transparent and explainable. The national and international standards ecosystem provides the frameworks and mechanisms to achieve that goal.**

Dr Laura May Bishop

British Standards Institution (BSI)

Digital Sector Lead, Artificial Intelligence and Cybersecurity,

Standards and safety assurance

Key message - Building on Existing Standards for Safe Autonomous Mobility: *Autonomous vehicle regulation should build on the extensive body of existing standards rather than start from scratch. The priority is to understand how these standards interact, identify gaps arising from AI and autonomous technologies, and ensure a coherent framework for safety, assurance and public trust.*

1. Introduction: Background in Psychology, Cybersecurity and AI

My name is Laura May Bishop, and I'm the Digital Sector Lead at the British Standards Institution, which is the UK's national standards body. I'm a psychologist specialising in human–technology interaction.

Back in 2013, human interaction with robots started, including autonomous vehicles and social robots in care homes. I then went to Airbus and completed my PhD in cybersecurity, and my research subsequently continued into AI and immersive technologies.

I cover all of these topics as a Sector Lead at BSI, as well as technology-enabled crime.

2. BSI's Role: Connecting Standards Development with Industry and Society

My role at BSI, just very quickly, is to position myself between the committees that write the standards and external stakeholders.

This is to make sure that standards represent what we need, and also that external stakeholders are aware of the standards portfolio available to them. That might not just be in robotics or AI. It could also be across cybersecurity. We've had an interest recently in AI toys, where we've had to bring together toy committees and AI committees and work across those different areas.

Ordinarily, you would probably have had Nick Fleming speaking here today. He's the Director of Transport and Mobility and would have loved the opportunity, but he's on annual leave. So, I'm going to approach this more from a socio-technical angle, drawing on psychology, but also from a general standards background.

3. Autonomous Vehicles as a Socio-Technical Challenge

As everybody here knows, autonomous vehicles promise substantial societal benefits, such as, most importantly, reductions in road traffic accidents, as well as improved mobility, accessibility and all of those fantastic things.

But what we know is that, at the heart of this, **public acceptance is fundamentally a socio-technical challenge.** People must believe that autonomous vehicles are safe, fair, accountable and aligned with societal values.

Without trust, even the most advanced technology will struggle to achieve widespread adoption, and we've seen that over previous years. Trust requires autonomous systems not only to be safe, but also to be able to demonstrate that safety.

They must be ethically governed, transparent in their decision-making, accountable for their actions and secure against cyber threats. They must also align with societal expectations, which is quite a big ask.

4. The Trolley Problem: Ethical Decision-Making in Autonomous Vehicles

To speak a little bit more about the psychology, much of the ethical debate around autonomous vehicles, even back in 2013 when I started my research, has focused on the trolley problem.

This is a thought experiment that asks individuals to choose between two harmful outcomes.

- Put simply, should a vehicle swerve to hit one person rather than three if no action were taken?
- And how do you programme that into a system?

The example is used because it captures an important concern.

If a collision cannot be avoided, how should an autonomous vehicle respond?

- Should it minimise overall harm?
- Should it prioritise passenger safety?
- Should it favour those obeying the rules of the road, which is what a lot of theories and frameworks look at?
- Or should it act randomly, which is also something some theorists suggest we should do?

These questions reflect long-standing debates in moral philosophy.

5. Moral Philosophy: Utilitarianism, Duties, Rights and Ethical Conflicts

Moral dilemmas:

- Utilitarian approaches seek the greatest good for the greatest number of people.
- Deontological approaches focus on duties, rights and rules, regardless of outcomes.
- Other perspectives emphasise the balance between self-interest and altruism.

Moral dilemmas generally contain two characteristics: a conflict between important values and an actor who cannot clearly demonstrate the morally correct course of action.

Given that philosophers have been arguing over these values for more than 60 years, how can we expect to programme them into autonomous vehicles?

Through research, we arrive at the conclusion that **the dilemma cannot be solved; it can only be decided.**

6. BS ISO 39003: Embedding Ethical Principles into Autonomous Vehicle Development

I'll now move on to standards. While public discussion often focuses on trolley problem scenarios, there are standards that provide a more structured approach.

I hate to give you the numbers of standards, but I will, just in case you want to write them down.

- BS ISO 39003, published in 2023, *Guidance on Ethical Considerations Relating to Safety for Autonomous Vehicles*, provides a structured framework for embedding ethics into autonomous vehicle development.

It introduces a different approach:

- Rather than focusing solely on outcomes, it addresses purpose, values, principles and processes, so that we can explain why decisions were made, whatever the audience might be.
- It helps organisations determine their purpose and establish the values that guide them, drawing on widely recognised concepts.
- It then considers how those values are translated into principles, such as avoiding harm, promoting good, fairness, accountability and transparency.

It also addresses how we govern operational processes and manage risks.

7. BS 8611: Ethical Design Across the Lifecycle of Robotic and Autonomous Systems

There are also additional standards. And notice that they've all come from the UK.

BS 8611, *Ethical Design and Application of Robots and Robotic Systems*, was published in 2023.

- This looks more broadly at the lifecycle of autonomous systems and considers other ethical concerns, such as employment and the impact that autonomous systems will have on industry.
- It addresses how we manage roles that may be changing, or parts of roles that may be changing.
- It also considers how entire roles may no longer exist when Level 5 autonomous systems become a reality.

How do we best manage those changes and retrain and reskill people across the UK?

8. The Wider Standards Ecosystem: Data Governance, Privacy, Bias and Security

I want to finish by saying: please do look at the standards.

There are many standards within this portfolio, including standards addressing connected and automated mobility vocabulary, which is really, really important.

We need a shared understanding of what all these terms mean.

There are also standards covering data governance, privacy, algorithmic bias, information security and more.

The ecosystem is far and wide.

9. Regulation, Standards and Certification for Level 4 and Level 5 Autonomy

The future of autonomous vehicles, particularly at Levels 4 and 5, is fundamentally a socio-technical challenge. That's what I want to get across.

It's a challenge that must be supported by **regulation, standards and certification**.

If we get this right, autonomous vehicles have the potential to deliver significant benefits in safety, accessibility, mobility and the economy.

10. Conclusion: Trust Depends on Ethics, Transparency and Explainability

We trust what is ethical and expected, but we can only expect what is transparent and explainable.

The national and international standards ecosystem provides the frameworks and mechanisms to achieve that goal.

DISCUSSION

DISCUSSION AND QUESTIONS FROM PARLIAMENTARIANS AND THE AUDIENCE



Discussion and Questions

From Parliamentarians and the Audience

The discussion examined the legal, technological, ethical and societal challenges associated with autonomous vehicle deployment.

1. Who Pays When Autonomous Systems Fail?

Cybersecurity, Insurance, Liability and Robotics

Referring to the major cybersecurity incident affecting Jaguar Land Rover, **Lord Taylor** highlighted the substantial financial consequences for the company, its suppliers and the government.

Lord Taylor questioned whether autonomous vehicle companies should be required to obtain cybersecurity insurance to protect against comparable incidents and prevent taxpayers from bearing the costs. He also asked how robotics should fit within the regulatory framework for autonomous vehicles.

Case context | Jaguar Land Rover cyberattack (2025)

The cyberattack on Jaguar Land Rover was estimated to have caused £1.9 billion in wider economic damage, with the company reporting a quarterly pre-tax loss of £485 million. The disruption affected suppliers and the wider economy, raising questions about insurance, liability and whether taxpayers should bear the costs of major cybersecurity failures.

Responses

Kevin Vincent, Coventry University: Insurance presents significant challenges because insurers lack sufficient operational evidence to assess autonomous vehicle risks reliably. He suggested considering layered liability across the technology supply chain until deployment generates enough evidence to support more accurate risk assessments and affordable insurance.

Dr Laura May Bishop, British Standards Institution (BSI): Autonomous vehicles are robotic systems, but their acceptance also depends on how people perceive and relate to technology. People may attribute human characteristics to machines, and trust develops gradually. Services involving children, for example, may require particularly strong public reassurance.

Key issue emerging from the discussion

The discussion raised questions about how financial and legal responsibility should be distributed across complex technology supply chains, alongside the importance of considering human perceptions of autonomous systems as well as their technical performance.

2. How Can We Certify AI That Cannot Be Fully Predicted?

Testing, Verification and Continuous Safety Assurance

Martin Wrigley MP questioned how neural-network-based AI systems can be certified when their decisions are probabilistic rather than deterministic.

Unlike conventional software, where specified inputs should produce predictable outputs, AI systems may respond to situations that cannot all be anticipated during development. He argued that even millions of successful simulations cannot guarantee that rare but potentially catastrophic failures will never occur.

The central question was how regulators can establish confidence in systems whose behaviour cannot be exhaustively tested.

Responses

Dr Nick Reed, Reed Mobility: Human drivers are also non-deterministic. He argued that regulators should have access to evidence showing what autonomous vehicles detect, how they respond to hazards and whether their behaviour meets established safety expectations.

Jamie Hodsdon, Waymo: Safety assurance involves evaluating both the inputs used to develop AI systems and the outputs they produce. Waymo employs extensive simulation, counterfactual testing and real-world monitoring to assess vehicle behaviour. He also emphasised the importance of continued assessment following regulatory authorisation.

Dr Alison Gardner MP: Aviation offers useful lessons for managing safety-critical automated systems. Jamie Hodsdon confirmed that aviation safety management principles had influenced the UK's autonomous vehicle legislation.

Key issue emerging from the discussion

The discussion highlighted the challenges of certifying probabilistic AI systems and the importance of combining pre-deployment testing with transparent evidence, real-world monitoring and continued safety assessment throughout deployment.

3. Who Benefits - and Who Could Lose Their Jobs?

Employment Displacement, Taxation and Economic Transition

Iqbal Mohamed MP highlighted the potential displacement of approximately 300,000 taxi and private-hire drivers in the UK, alongside possible future effects on bus drivers, delivery workers and other transport occupations.

He questioned how government should manage these transitions and whether autonomous vehicle companies would replace the tax and National Insurance contributions currently generated by professional drivers.

The issue extended beyond employment numbers to the wider distribution of the economic benefits and costs of automation.

Discussion

Dr Alison Gardner MP acknowledged the broader societal and ethical implications of autonomous vehicle deployment, including its effects on employment.

Lord Tim Clement-Jones CBE observed that Waymo services in the United States appeared more expensive than conventional taxis, potentially limiting immediate displacement in that market. However, he cautioned that the effects in the UK could be different.

Key issue emerging from the discussion

The discussion recognised that technological progress may create new economic opportunities while disrupting established occupations and revenue streams. No specific mechanism for replacing potentially lost tax revenues was identified.

The exchange raised wider questions about how autonomous vehicle deployment may affect employment, workforce transitions, public finances and the distribution of economic benefits across society.

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4. Could External Technology Dependencies Threaten National Resilience?

Cybersecurity, Foreign Technology and Critical Dependencies

Iqbal Mohamed MP argued that cybersecurity must be a prerequisite for autonomous vehicle deployment. He raised concerns that foreign governments or technology providers could potentially disrupt connected vehicles or associated digital services. He also questioned whether the UK AI Security Institute should have statutory powers to test every vehicle model for vulnerabilities.

His intervention placed autonomous vehicle cybersecurity within the wider context of national resilience and technological sovereignty.

Responses

Marie-Claire Day, Osborne Clarke: Cybersecurity obligations already exist under vehicle regulations and the Automated Vehicles Act framework. However, she identified a gap in the direct regulation of third-party software and technology suppliers. She supported examining this gap while avoiding unnecessary regulatory burdens that could inhibit deployment and innovation.

Kevin Vincent, Coventry University: Modern autonomous vehicles do not necessarily require continuous external communications to operate safely. His point concerned reducing dependence on costly digital infrastructure, rather than suggesting that autonomous vehicles are free from cybersecurity vulnerabilities.

Key issue emerging from the discussion

The discussion raised questions about cybersecurity responsibilities across complex technology supply chains, the risks associated with external technology dependencies and the relationship between autonomous vehicle safety and national resilience.

5. What Evidence Would Make the Public Trust AI-Driven Vehicles?

Transparency, Explainability and Regulatory Oversight

Iqbal Mohamed MP questioned how the public could develop trust in AI-driven vehicles when their decisions may not always be predictable or explainable. He compared autonomous vehicles with aviation, pharmaceuticals and nuclear technology, where established regulatory systems provide public reassurance through testing, oversight and accountability.

The underlying concern was whether the public could reasonably be expected to trust autonomous systems without sufficient visibility into how they operate.

Response – Dr Nick Reed, Reed Mobility

Dr Reed explained that the Automated Vehicles Act provides for in-use safety monitoring. However, he argued that simply counting incidents per mile would not provide sufficient evidence of whether autonomous vehicles were operating safely.

Regulators should have standardised access to data showing what vehicles detect, how they interpret hazards and whether they respond appropriately under different conditions.

Such evidence could reveal weaknesses that aggregate safety statistics might conceal, including poorer performance at night or during heavy rain. Regulators could then identify emerging risks and require corrective action before those weaknesses result in serious incidents.

Key issue emerging from the discussion

The discussion emphasised the relationship between public trust, transparency and independently assessable safety evidence. It highlighted the importance of understanding how autonomous vehicles behave under different conditions rather than relying exclusively on aggregate safety statistics.

6. Could Hackers Compromise Entire Fleets of Autonomous Vehicles?

Fleet-Wide Cyberattacks and Remote Vehicle Control

Samantha Niblett MP raised concerns about increasing dependence on connected vehicle technologies, drawing on her experience of unexpected behaviour in a modern electric vehicle. She questioned whether hackers could compromise entire fleets of autonomous vehicles, potentially creating widespread safety risks or opportunities for geopolitical interference.

Dr Alison Gardner MP observed that Waymo's integrated operating model may not fully address the vulnerabilities associated with other manufacturers and their broader technology supply chains.

Response – Jamie Hodsdon, Waymo

Jamie explained that Waymo adopts a defence-in-depth cybersecurity approach, incorporating multiple layers of protection for vehicles and their communications.

He emphasised that Waymo vehicles make driving decisions autonomously and cannot be remotely driven. This design decision removes a potential attack route associated with remote driving capabilities.

Key issue emerging from the discussion

The exchange highlighted the importance of cybersecurity-by-design and raised questions about fleet-wide vulnerabilities, remote interference and the different cybersecurity risks associated with alternative vehicle architectures and operating models.

7. Can Autonomous Vehicles Eliminate Road Deaths?

Safety Performance, Evidence and Vision Zero

A participant asked whether Waymo's reported reduction of up to 95% in serious-injury crashes could eventually reach 100%. The question explored whether autonomous vehicles might ultimately eliminate road deaths and serious injuries, rather than simply reduce their frequency.

Response – Jamie Hodsdon, Waymo
Jamie explained that Waymo's reported collision statistics include incidents for which its vehicles were not responsible, including collisions caused by other road users.

He noted that comparisons depend on how incidents are defined, attributed and reported, and that aspects of the UK's reporting arrangements were still being developed.

He connected Waymo's wider ambition to *Vision Zero*: the objective of eliminating road deaths and serious injuries.

Key issue emerging from the discussion

The discussion highlighted the importance of consistent safety metrics, transparent reporting and careful interpretation of collision statistics when evaluating autonomous vehicle performance and comparing it with human driving.

8. Who Is Accountable When Companies Break the Rules?

Corporate Misconduct, Executive Responsibility and Enforcement

Professor Ashley Braganza (APPG AI Advisory Board) questioned whether autonomous vehicle legislation would genuinely hold companies and executives accountable when safety requirements are breached. Referring to historical examples of corporate misconduct, including Volkswagen's emissions scandal, he expressed concern that commercial incentives might encourage deployment even where accountability arrangements were insufficient.

Case context | Volkswagen emissions scandal (2015)

The Volkswagen emissions scandal (Dieselgate) emerged in September 2015 when the US Environmental Protection Agency (EPA) found that Volkswagen had used software to manipulate official diesel emissions tests. The case raised questions about corporate misconduct, executive accountability and the effectiveness of regulatory enforcement.

The question was whether the regulatory framework could prevent misconduct and impose meaningful consequences when organisations failed to meet their obligations.

Responses

Kevin Vincent, Coventry University: The Automated Vehicles Act introduces requirements concerning the fitness and responsibility of organisations seeking authorisation. These go beyond traditional vehicle type approval and may help prevent unsuitable operators from entering the market.

Marie-Claire Day, Osborne Clarke: The legislation includes the possibility of criminal liability, providing a stronger basis for enforcement against serious misconduct.

Key issue emerging from the discussion

The discussion examined the extent to which the regulatory framework can establish meaningful corporate accountability, including the role of authorisation requirements, legal responsibilities and enforcement mechanisms in addressing serious misconduct.

9. Is Britain Ready for Driverless Trucks?

Autonomous Freight Transport and Operational Risk

Sophie de Schwarzburg-Gunther highlighted the deployment of autonomous trucks in the United States, particularly Texas, and asked what lessons could be drawn for the UK. She also noted the potential for autonomous freight vehicles to help address shortages of professional drivers.

Response – Dr Nick Reed, Reed Mobility

Dr Reed explained that autonomous trucking in the United States frequently operates on relatively straightforward highway routes with more predictable driving conditions. He acknowledged the potential benefits for freight operations and driver shortages but cautioned that heavy goods vehicles present substantial risks because of their size and mass. He also highlighted the greater complexity of many UK roads, which could make autonomous trucking more challenging to deploy.

Key issue emerging from the discussion

The exchange highlighted the opportunities associated with autonomous freight transport while recognising that safety considerations depend on vehicle characteristics, operating environments and differences between US and UK road conditions.

10. Should Agentic AI Be Used in Autonomous Vehicles?

AI Architectures, Data Integrity and Emerging Standards

Bishwa Pandey (Competition and Markets Authority, CMA) raised concerns about advanced AI systems potentially concealing or withholding information and questioned whether similar behaviour could pose risks if such systems were incorporated into autonomous vehicles. His question highlighted the importance of distinguishing between different AI architectures and assessing the potential safety and governance implications of emerging AI capabilities.

Dr Alison Gardner MP raised a follow-up question about whether agentic AI technologies should be introduced into autonomous vehicles before their safety could be adequately demonstrated.

Responses

Jamie Hodsdon, Waymo: Waymo's driving models differ significantly from general-purpose large language models and agentic AI. Their purpose is to perform driving tasks rather than engage in general-purpose agentic behaviour. The specific concerns raised about agentic AI should therefore not automatically be assumed to apply to Waymo's existing driving systems.

Marie-Claire Day, Osborne Clarke: Regulation specifically addressing agentic AI remains underdeveloped, requiring careful consideration of how such systems might be used and deployed.

Dr Laura Bishop, British Standards Institution (BSI): Standards for agentic AI are still being developed, including foundational terminology and definitions. She cautioned against premature deployment in safety-critical environments before appropriate assurance is established.

Key issue emerging from the discussion

The discussion highlighted the importance of distinguishing between AI technologies currently used in autonomous vehicles and emerging agentic AI capabilities that might be incorporated into future systems. It raised questions about whether existing safety assurance, regulatory frameworks and technical standards would be sufficient to address the additional risks associated with such developments.

11. Could Regulation Restrict Competition and Innovation?

Market Entry, Compliance Costs and Technological Development

Bishwa Pandey (Competition and Markets Authority, CMA) questioned whether the cost and complexity of autonomous vehicle regulation could discourage UK startups and smaller technology companies from entering the market. He raised the possibility that extensive compliance requirements might favour established international operators and contribute to market concentration.

Martin Wrigley MP – Martin Wrigley argued that regulation rarely prevents innovation outright, although it can influence how innovation develops. He suggested that regulation should be understood as shaping technological progress rather than necessarily restricting it.

Key issue emerging from the discussion

The exchange raised questions about the relationship between safety regulation, innovation and competition, including whether regulatory costs and compliance requirements could affect market entry and the development of the UK's autonomous vehicle sector.

12. Will Autonomous Mobility Benefit Everyone?

Affordability, Accessibility and the Distribution of Benefits

Lord Tim Clement-Jones CBE returned to the broader societal implications of autonomous vehicles, questioning whether technological capability alone justified deployment.

He expressed support for the technology based on his experience in the United States but emphasised the importance of understanding its effects on employment, existing transport services and society more widely. He also noted concerns among London taxi drivers about the introduction of driverless vehicles.

Iqbal Mohamed MP raised a further concern about affordability and inequality. He questioned whether subscription-based business models could result in important safety improvements becoming available primarily to consumers who could afford premium vehicle features and ongoing payments.

He argued that legislators must ensure that the benefits of technological progress are available to everyone, rather than concentrated among those with greater financial resources.

Key issue emerging from the discussion

The discussion raised wider questions about the social and economic consequences of autonomous mobility, including affordability, accessibility, employment and whether the benefits of technological progress will be shared across society.

Overall Themes Emerging from the Discussion

The questions and responses highlighted multiple interconnected areas of continuing relevance to policymakers, regulators, industry and researchers.

- **Safety, Testing and Certification:** The probabilistic nature of AI presents challenges for conventional testing and certification. The discussion emphasised the importance of pre-deployment evaluation, transparent safety evidence and continued monitoring of autonomous vehicle performance.

- **Cybersecurity and National Resilience:** Autonomous vehicle safety is closely connected to the resilience of software, communications and technology supply chains. Questions were raised about cyberattacks, remote interference, external technology dependencies and potential vulnerabilities affecting entire fleets.

- **Legal Accountability and Insurance:** Autonomous mobility introduces complex questions about responsibility across manufacturers, software developers, operators and suppliers. The discussion considered insurance arrangements, corporate accountability, legal obligations and the role of regulatory enforcement.

- **Public Trust and Transparency:** Public confidence in autonomous vehicles depends partly on the availability of credible safety evidence and the ability of regulators to assess how systems behave. Human perceptions of intelligent machines and the transparency of AI decision-making were also important themes.

- **Employment, Accessibility and Social Inclusion:** Autonomous mobility may improve transport services and accessibility while affecting existing occupations and business models. The discussion raised questions about employment transitions, public finances, affordability and the distribution of technological benefits.

- **Innovation and Competition:** The relationship between regulation and innovation emerged as an important consideration. Participants questioned how safety and accountability requirements might influence competition, market entry and opportunities for UK technology companies.

Observation

The parliamentary discussion demonstrated that the development of autonomous mobility raises questions extending well beyond the technical capability of self-driving vehicles. Safety assurance, cybersecurity, legal accountability and public trust were central concerns. Equally important were the wider economic and societal implications, including employment, accessibility, affordability and competition.

A central question emerging from the discussion was not simply whether autonomous vehicles can operate safely, but how their deployment can earn public trust and deliver benefits across society.





Biographies of Evidence Givers



Jamie Hodsdon,
Policy Manager, UK and Western Europe, Waymo

Jamie is Policy Manager for the UK and Western Europe at Waymo. He works closely with politicians, policymakers, and regulators to bring Waymo's exciting technology to European roads. Previously, he headed up the UK Government's self-driving vehicle regulatory programme, developing legislation for the safe deployment of the technology. Before Waymo, he led Oxa's regulatory and public affairs team.



Kevin Vincent,
Director, Centre for Connected and Autonomous Automotive Research (CCAAR) and National Transport Design Centre (NTDC), Coventry University

Kevin Vincent is Director of the Centre for Connected and Autonomous Automotive Research and the National Transport Design Centre at Coventry University. His role encompasses leading Centres' relationships with Industry and Government focusing, in particular, on the strategy for Connectivity and Automation research in transport, managing stakeholder management with national and local authorities and industry to generate new projects and contribute to driving the research and skills agenda.

He has over thirty years' experience in product and business development in the transportation industry both in private and public sectors, initially focused on computer aided engineering techniques optimising the safety and mass of vehicle structures and more recently, developing Connected and Automated Mobility research and deployment projects with specific interest in EU & nationally funded collaborative research and development.



Marie-Claire Day,
Associate Director UK,
Osborne Clarke

Marie-Claire Day is an advisory and transactional lawyer at Osborne Clarke, specialising in data, intellectual property, cybersecurity, and software and technology transactions. She is a leading legal adviser in the connected and autonomous vehicle (CAV) and broader mobility tech space, with over a decade of experience advising across the full mobility ecosystem. Her expertise spans the regulatory and liability landscape governing CAVs and their supply chains across the UK and Europe, including vehicle type approval, data protection, data licensing, telematics, cybersecurity, and supply chain liability. She has recently advised market-leading players ahead of their AV launches in the UK and internationally.

Marie-Claire combines deep digital and technology legal expertise with extensive automotive sector experience. She advised the EU Commission on its H2020 'MyCorridor' project, a cross-border Mobility as a Service platform initiative, and continues to advise clients holistically as they navigate the increasingly complex regulatory landscape relating to CAVs.



Dr Nick Reed,
Founder,
Reed Mobility

For more than twenty years, Dr Nick Reed has worked consistently at the cutting edge of mobility research. In 2019, he created Reed Mobility – an independent expert consultancy on future mobility working across public, private and academic sectors to deliver transport systems that are safe, clean, efficient, ethical and equitable and including projects for the European Commission, the UK Department for Transport, Transport for London, PA Consulting, Mott Macdonald, WSP and Waymo. In 2021, he was recruited to a three-year part-time role as National Highways' first independent Chief Road Safety Adviser, developing their strategy for eliminating death and serious injury on the strategic road network. He has since been appointed to the Science Advisory Council at the Department for Transport and is a trustee of the Road Safety Trust.



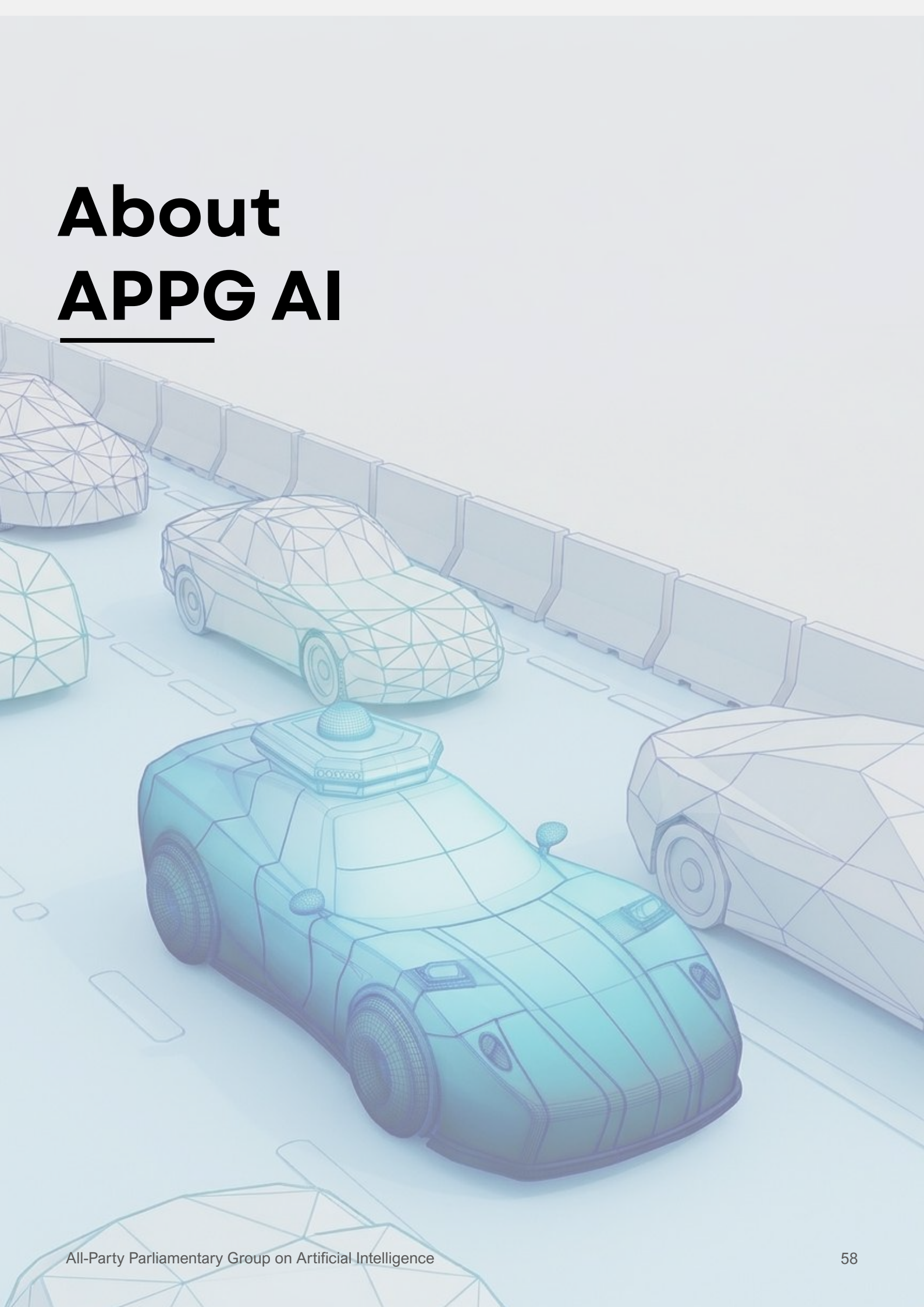
Dr Laura May Bishop,
Digital Sector Lead, Artificial Intelligence and Cybersecurity,
British Standards Institution (BSI)

Dr Laura May Bishop is a human factors specialist and cyberpsychologist specialising in the psychological and societal implications of artificial intelligence, cybersecurity and human–technology interaction. She holds a PhD examining human vulnerabilities to cyberattacks and has conducted research into human–robot and human–computer interaction.

At the British Standards Institution (BSI), she supports the development of national and international standards promoting the safe, secure, ethical and trustworthy use of digital technologies, including AI and autonomous systems.

Previously, Dr Bishop led the Human-centric Cyber Innovation Programme at Airbus, focusing on human vulnerabilities and emerging technological risks. She is also an Honorary Research Associate at Cardiff University, where she maintains an interest in research into human–technology interaction.

About APPG AI



ABOUT

APPGs are informal cross-party groups in the UK Parliament. They are run by and for Members of the Commons and Lords. The All-Party Parliamentary Group on Artificial Intelligence (APPG AI) functions as the permanent, authoritative voice within the UK Parliament (House of Commons and House of Lords) on all AI-related matters, and it has also become a recognisable forum in the AI policy ecosystem both in the UK and internationally.

Parliamentary APPG AI Members: House of Commons

- Dr Allison Gardner MP Labour (APPG AI Co-Chair)
- Alison Griffiths MP Conservative
- Andrew Pakes MP Labour
- Bell Ribeiro-Addy MP Labour
- Ben Lake MP Plaid Cymru
- Chris Kane MP Labour
- Daniel Aldridge MP Labour
- The Rt Hon Damian Hinds MP Conservative
- Dr Danny Chambers MP Liberal Democrat
- Dawn Butler MP Labour (APPG AI Vice-Chair)
- David Reed MP Conservative
- Dave Robertson MP Labour
- The Rt Hon Esther McVey MP Conservative
- Emily Darlington MP Labour
- George Freeman MP Conservative
- Gordon McKee MP Labour
- Graham Leadbitter MP SNP
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- Juliet Campbell MP Labour
- Leigh Ingham MP Labour
- The Rt Hon Liam Byrne MP Labour
- Sir Mark Hendrick MP Labour
- Martin Wrigley MP Liberal Democrat
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- Samantha Niblett MP Labour
- Sarah Edwards MP Labour
- Tim Roca MP Labour
- Tom Collins MP Labour
- Tom Gorden MP Liberal Democrat
- Tony Vaughan MP Labour
- Zöe Franklin MP Liberal Democrat
- Dr Zubir Ahmed MP Labour

Parliamentary APPG AI Members: House of Lords

- Lord Clement-Jones (Tim Clement-Jones) Liberal Democrat (APPG AI Co-Chair)
- Lord Bilimoria (Karan Faridoon Bilimoria) - Crossbench
- Viscount Colville Of Culross (Charles Mark Townshend Colville) Crossbench
- Lord Craig of Radley (David Brownrigg Craig) Crossbench
- Lord Cromwell (Godfrey Cromwell) Crossbench
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- Lord Pitkeathley of Camden Town (Simon Pitkeathley) Labour
- Lord Ranger of Northwood (Kulveer Ranger) Conservative (APPG AI Vice-Chair)
- The Lord Bishop of Oxford (Stephen Croft) Bishops
- Viscount Stansgate (Stephen Stansgate) Labour
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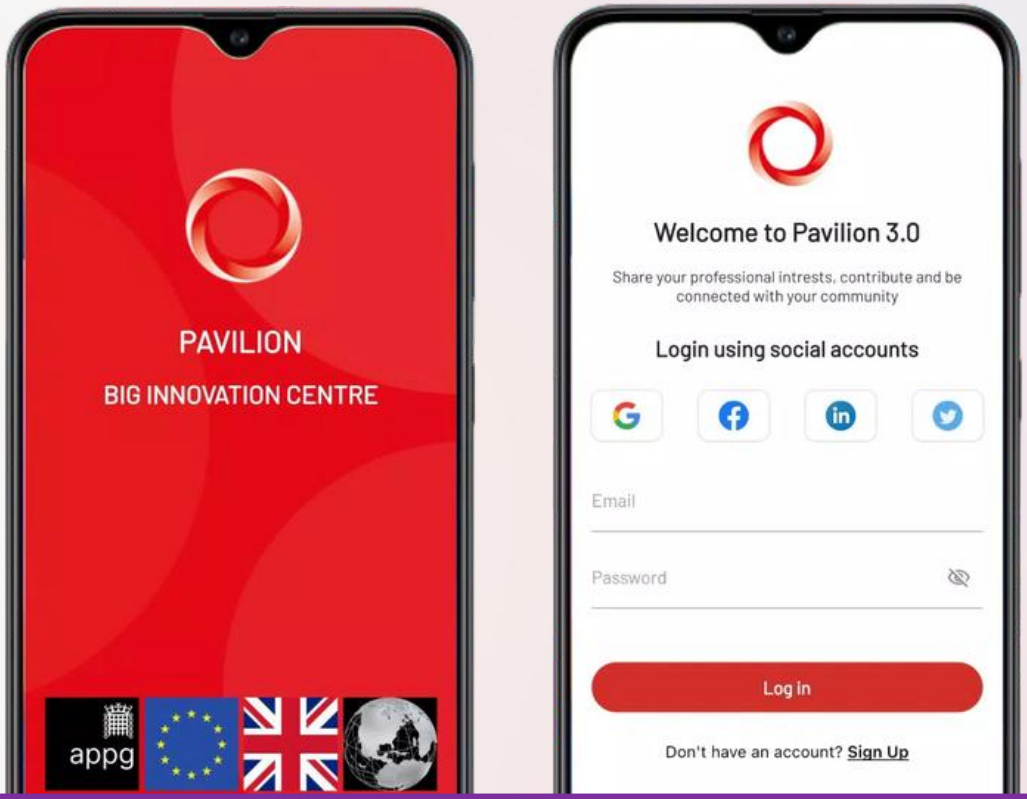
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