



accidents don't have to happen

Automated vehicles: safety principles statement

RoSPA's response to Department for Transport and Centre for Connected and Autonomous Vehicles' consultation

September 2025



Response to Department for Transport and Centre for Autonomous and Connected Vehicles' consultation: Automated vehicles: safety principles statement

Introduction

This is the response of The Royal Society for the Prevention of Accidents (RoSPA) to the Department for Transport (DfT) and Centre for Connected and Autonomous Vehicles' (CCAV) consultation on the automated vehicles safety principles statement. It has been produced following consultation with RoSPA's National Road Safety Committee and our Automated Vehicles working group. We have no objection to our response being reproduced or attributed.

The call for evidence seeks views on what safety standards should be sought for automated (self-driving) vehicles in the UK.

[Section 2 of the Automated Vehicles Act 2024](#) requires the Secretary of State for Transport to prepare a Statement of Safety Principles that apply to automated vehicles.

This statement will be used in different ways across the safety framework, including:

- when authorisation authorities carry out vehicle type approval and authorisation checks (pre-deployment)
- when regulators carry out in-use monitoring and regulatory compliance checks (post-deployment)
- for annual assessments on the overall performance of automated vehicles

The call for evidence seeks views to gain an understanding of how:

- the safety principles may be used
- the safety standard may be described
- safety performance could be measured.



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What is your name?

Rebecca Guy.

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Are you responding on behalf of an organisation?

Yes.

Your organisation's name is?

The Royal Society for the Prevention of Accidents (RoSPA)

Your organisation is best described as?

Safety and road user group.

Where is your organisation primarily located?

UK.

In your view, are there any other uses for the safety principles we have not identified?

RoSPA response

Yes.

In your view, what other uses might there be for the safety principles and why? Provide evidence if possible.

RoSPA response

In RoSPA's view, the safety principles could also serve as a foundation for public communication, helping to build understanding, acceptance and trust in automated vehicles. Clear and transparent explanation of the principles can



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show how AVs are designed to manage risk and responsibility, which is particularly important given that public confidence in this technology remains low¹.

Integrating the safety principles into public awareness campaigns, alongside the rollout of automated vehicles, could help clarify the authorisation process and the rigorous safety standards that Authorised Self-Driving Entities (ASDEs) must meet. This would enable the public to see not only what the rules are, but how they protect all road users. RoSPA believes transparency at every stage is critical, particularly during the early phases of deployment when scepticism may be greatest.

Do you agree or disagree with our characterisation of how the SoSP might be used at pre-deployment? Why do you think this? Provide evidence if possible.

RoSPA response

RoSPA partially agrees with the government's overall characterisation of how the statement of safety principles might be used at the pre-deployment stage.

RoSPA would like to emphasise that the vehicle type approval process for automated vehicles must be updated to reflect fundamental differences between automated and conventional vehicles. Unlike traditional cars, automated vehicles may not have steering wheels or manual driver controls, meaning that many existing type approval requirements will be redundant. They also introduce new components and systems that must be considered, for example, the interface between the vehicle and its occupants, as well as communication with other road users. These additional elements will require new, specific approval criteria beyond the current regulatory framework.

There is a risk of relying too heavily on previous approaches designed for conventional vehicles, rather than taking a fresh, holistic view of automated vehicles. To effectively regulate them, type approval must evolve to ensure safety standards keep pace with technological innovation.

From a public trust perspective, it is critical that automated vehicles can clearly communicate their intentions not only to their occupants but also to other road users such as pedestrians, cyclists, and equestrians. This communication must be designed to be inclusive and accessible to all, including people with disabilities, to build confidence and acceptance.

In addition, we note that there has been limited information regarding the approval and safety of supporting digital systems such as mobile apps that users are likely to rely on for hailing automated vehicles or receiving instructions. These apps will form an integral part of the user experience, and their safety, reliability, and accessibility should be

¹ Fleet Alliance (2025) *New Study Reveals Public's Lack of Trust in Driverless Vehicles*

<https://www.fleetalliance.co.uk/autonomous-vehicles/>

Date accessed: 11/08/2025.



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addressed within the authorisation framework to ensure they meet the needs of diverse groups. The potential for digital exclusion should be considered.

Do you agree or disagree with our characterisation of how the SoSP might be used to inform pre-deployment safety requirements?

RoSPA response

RoSPA agrees with the Government's characterisation of how the Statement of Safety Principles (SoSP) might be used to inform pre-deployment safety requirements. Aligning automated vehicle standards with existing road safety rules, such as the Highway Code, is a sensible start. Compliance should be evaluated using a combination of virtual simulation, track testing, and real-world trials.

Benchmarking automated vehicle performance against human drivers can help contextualise safety, but aggregate comparisons risk masking important differences. Human driver performance varies with experience, impairment, and conditions, and it is unclear how automated vehicles will compare across these factors. The duration of consistent performance required before granting or renewing authorisation also remains unresolved, underlining the need for dynamic, ongoing assessment criteria.

RoSPA stresses that safety requirements must consider the full lifecycle of automated vehicles and the maintenance of critical components. Tyres may wear differently due to automated vehicle driving patterns, and sensors such as LIDAR may degrade unevenly depending on weather, environment, and use. Type approval processes should therefore include periodic reviews or certification linked to operational hours or environmental exposure.

Clear, transparent maintenance regimes, modelled on practices in aviation and agriculture, would provide verifiable safety assurance. Mandated maintenance logs could track operational hours, service history, and component replacements, enabling systematic monitoring of wear and ensuring automated vehicles remain safe throughout their service life.

What information do you think would need to be provided pre-deployment to demonstrate consistency with the SoSP?

RoSPA response

To demonstrate consistency with the statement of safety principles pre-deployment, manufacturers should provide a comprehensive safety case that includes, at a minimum:

- A detailed description of the automated driving system's intended operational design domain.
- Identification and assessment of risks within that domain, with clear explanations of how those risks are mitigated through design and operational controls.
- Evidence from virtual, track, and real-world testing that validates system performance.



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The safety case should also outline how safety will be maintained throughout the vehicle's operational lifetime, including regular maintenance schedules, component lifecycle management, monitoring systems, and procedures for addressing emerging risks or failures.

In addition, it should include information on how the system communicates with occupants and other road users, along with assurances that the vehicle meets inclusive accessibility standards.

In your view, what considerations should be taken into account when assessing at pre-deployment whether automated vehicles meet the expectations set by the SoSP?

RoSPA response

When assessing whether automated vehicles meet the expectations set by the statement of safety principles at pre-deployment, several considerations are essential. Firstly, a detailed evaluation of the vehicle's operational design domain, specifying where and under what conditions the vehicle can operate safely, should include an assessment of risks and clear mitigation strategies.

While extensive virtual, track, and real-world testing can cover many scenarios, rare "edge cases" will inevitably arise once vehicles are deployed on public roads. Pre-deployment assessments should therefore consider how the system can adapt to previously unencountered risks, including unpredictable behaviour from other road users.

A key question is how long the "free from unreasonable risk" status will be considered valid, as new risks may emerge over time, particularly relating to interactions between humans and the automated vehicle. These evolving interaction risks highlight the need for continuous monitoring and updating of safety evidence post-deployment.

Safety assessments should not be treated as a one-off task but integrated into an ongoing approach. Robust processes are needed for updating risk assessments and safety measures as new information and edge cases emerge in dynamic, real-world environments.

Finally, while benchmarking automated vehicle performance against human drivers is useful, variability in human behaviour and the potential for new, unforeseen risks must be considered in any assessment.

Do you agree or with our characterisation of how the SoSP might be used at post-deployment?

RoSPA response

RoSPA partially agrees with the government's characterisation of how the statement of safety principles might be used to inform post-deployment safety requirements. While ongoing monitoring and improvement are welcome, several important considerations need further development.



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A key question is what counts as a reportable incident. The scope must extend beyond collisions and physical harm to include personal safety concerns, such as feelings of being trapped, harassment, distress, or near misses. Near misses should be treated as critical early warning signals to highlight emerging risks before collisions occur. RoSPA strongly advocates mandatory reporting of near misses to prevent overlooking patterns that could lead to harm.

Internal investigations into incidents must have clearly defined procedures to ensure issues are effectively identified and addressed. Without this, significant safety concerns could go unresolved, undermining public confidence.

The Statement of Safety Principles should also explicitly ensure post-deployment monitoring includes feedback from all road users, not just vehicle occupants. Understanding the safety perceptions of pedestrians, cyclists, horse riders and other road users is essential, as public acceptance depends on both actual and perceived safety.

Mechanisms must be in place to detect and correct design flaws that emerge during real-world operation, especially those that could cause misuse or misunderstanding of the vehicle.

Transparency and timely sharing of lessons across operators is essential to prevent repeated mistakes and reduce risk to the public. Waiting for periodic government reports is insufficient; safety-critical information must be shared promptly.

Finally, the Statement of Safety Principles should address ongoing maintenance and whole-life safety of vehicle components, adapting requirements to different operational conditions and environments, and considering aviation-style monitoring for component lifespans.

What information do you think would need to be provided to the authorities post-deployment to demonstrate ongoing consistency with the SoSP?

RoSPA response

RoSPA believes that operators of automated vehicles without a user in charge should be required to provide regular, structured safety information to the authorities. At a minimum, operators should establish a dedicated safety monitoring function with clearly designated personnel or departments responsible for:

- Identifying and investigating safety incidents and near misses
- Analysing emerging risks
- Ensuring lessons are learned and acted upon across the fleet
- Transparently reporting findings

The information provided to the authorities post-deployment should include:

- Safety performance data, including collisions, near misses, unexpected behaviours, and personal safety concerns
- Records of internal investigations and root-cause analyses
- Evidence of actions taken to address identified safety issues and prevent recurrence



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- Ongoing risk assessments reflecting changes in operational design, software updates, and component degradation
- Maintenance logs for critical components, such as sensors, tyres, and software versions

In your view, what considerations should be taken into account when assessing at post-deployment whether automated vehicles meet the expectations set by the SoSP?

RoSPA response

Post-deployment assessment of whether automated vehicles continue to meet the expectations set by the statement of safety principles should be broader than tracking collisions and injuries. Automated vehicles should deliver safety performance exceeding that of a careful and competent human driver. Given their advanced perception technologies, careful human driving should be treated as a minimum threshold, not a ceiling.

Performance monitoring should use both lagging indicators, such as collision rates and injuries, and leading indicators, including near misses, traffic law breaches, and personal safety concerns. Assessments must also consider the perceptions and behaviours of pedestrians, cyclists, horse riders and other road users, recognising that behavioural shifts, such as avoiding walking or cycling due to fear of automated vehicles, represent a negative outcome.

Post-deployment oversight should actively identify emerging risks from human and vehicle interaction, including over-trust, misuse, or misunderstanding of automated vehicle interfaces. Operators should maintain effective safety management systems with clear responsibilities for monitoring, investigation, escalation, and transparent reporting. Lessons learned, particularly from edge cases, should be shared across the industry to prevent recurrence.

Finally, assessment should include how safety is maintained throughout the vehicle's lifetime, including monitoring the degradation of critical components and evaluating whether operational design domains or software behaviours have evolved in ways that could undermine continued compliance.

Provide any evidence you are aware of on the current performance of human drivers.

RoSPA response

Department for Transport statistics show that in 2023 there were 135,480 reported road casualties in Great Britain, including 1,624 fatalities². Driver or rider error remains the dominant contributory factor, cited in 61 per cent of recorded injury collisions. Human driving performance is highly variable and context-dependent.

² Department for Transport (2024) *Reported Road Casualties Great Britain: Annual Report 2023*.



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Situational awareness and risk assessment are frequently affected by fatigue, distraction, stress, and high cognitive workload. Perceptual errors—including inattention blindness, misjudgement, and misinterpretation of intent—are common and contribute to the most frequently cited factors in crashes, such as “failed to look properly” or “failed to judge another person’s path or speed.” Even careful and competent drivers are prone to momentary lapses, meaning human safety performance fluctuates and can never be guaranteed.

Studies indicate that a typical UK driver will drive around 285,000 miles over their lifetime³, with estimates of a serious or fatal collision occurring roughly once every one to two million miles, although this varies significantly by age, experience, and behaviour. Novice drivers, for example, experience significantly substantially higher collision rates, with one in five involved in crashes during their first year of driving⁴.

Human driving is inherently fallible and should not be regarded as a high benchmark for automated vehicle performance. Rather, a careful and competent human driver should be treated as a minimum baseline—a floor, not a ceiling. Automated vehicles, with advanced perception systems and continuous attention, should deliver higher and more consistent performance than human drivers to meet public expectations of improved road safety.

In your view, does human driving performance improve with competence?

RoSPA response

Yes, to a point.

Why do you think this? Provide evidence if possible.

RoSPA response

Human driving performance generally improves with competence, as experience and training enable drivers to better anticipate hazards and assess risks. However, this improvement plateaus and can be eroded by factors such as complacency and over-reliance on automation. When drivers are infrequently required to intervene, vigilance

<https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2023/reported-road-casualties-great-britain-annual-report-2023>

Date accessed 06/08/2025.

³ The Independent (2021) ‘How much do UK adults drive in a lifetime?’

<https://www.independent.co.uk/travel-0/uk-adults-driving-lifetime-poll-b1891295.html>

Date accessed: 06/08/2025.

⁴ Brake (undated) *Young Drivers*

<https://www.brake.org.uk/get-involved/take-action/mybrake/knowledge-centre/young-drivers>

Date Accessed: 06/08/2025.



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can decrease, attention may drift, and driving skills can degrade over time. Excessive trust in automation may further reduce readiness to respond effectively when needed.

In your view, what characterises careful and competent human driving, and why? Your answer may like to consider capabilities, behaviours and outcomes.

RoSPA response

For RoSPA, a careful driver maintains full attention on the driving task and is not impaired by alcohol, drugs, or distractions such as mobile devices or passengers. They follow traffic laws and guidance, including the Highway Code. Competence relates to the driver's knowledge, skills, and experience. A competent driver can anticipate the actions of others, identify hazards early, assess risks, and adjust their driving to the conditions. They are experienced and can safely handle a wide range of scenarios, including unfamiliar or complex situations, applying sound judgement.

The legal system reflects this standard, using the "careful and competent driver" benchmark when considering offences such as careless or dangerous driving. It is important to acknowledge that this concept is complex and context-dependent, with interpretation shaped over time through case law. We also recognise that the application of this standard will likely continue to evolve as automated vehicle technology develops, with case law helping to define safety expectations for these systems.

This standard is higher than the performance of the 'average' driver, recognising that while many drivers are competent, not all drive with the level of care needed to consistently ensure safety. Given the technological capabilities of automated driving systems—such as advanced perception, faster response times, and consistent compliance with rules—RoSPA expects that these systems should exceed the safety performance of careful and competent human drivers.

Do you agree or disagree with the considerations we have outlined in thinking about careful and competent automated driving?

RoSPA response

Disagree.

Which consideration do you disagree with and why? Provide evidence if possible.

RoSPA response

RoSPA disagrees with the adequacy of the considerations currently outlined for defining "careful and competent automated driving." While automated systems may exceed human perception and reaction time under many conditions, their behaviour ultimately depends on how perception, reasoning, and decision-making have been engineered.



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Current automated driving systems can suffer from opaque or non-interpretable decision-making processes, particularly in end-to-end machine learning approaches. In such systems, the reasoning behind an action, especially in edge-case scenarios, may not be explainable. These systems often operate without the ability to quantify their own uncertainty, meaning they may fail to recognise when their contextual understanding is insufficient.

Furthermore, algorithmic bias and limitations in training data remain significant challenges. Automated perception systems may mis detect or misclassify vulnerable road users in unfamiliar or under-represented scenarios. These vulnerabilities are compounded by the fact that automated vehicles may not interpret implicit cultural or social driving cues, such as eye contact or pedestrian intent, that careful and competent human drivers rely upon in complex environments.

For these reasons, RoSPA believes that assessing careful and competent automated driving requires ongoing oversight of how systems perceive, interpret, and act, rather than relying solely on comparative outcome statistics. It is not sufficient to benchmark collision-avoidance performance: authorities must also understand how system decisions are made, how uncertainty is managed, and how systems adapt when operating outside expected conditions. Until such capabilities and safeguards are embedded and routinely audited, it cannot be assumed that automated systems meet or exceed the standard of a careful and competent human driver.

In your view, how might the assessment of careful and competent driving differ between human drivers and automated vehicles?

RoSPA response

In RoSPA's view, assessment of careful and competent driving will necessarily differ between human drivers and automated vehicles because they rely on fundamentally different types of decision-making and have different strengths and limitations.

Human drivers draw not only on perception and training, but also on experience, contextual understanding, social norms, and empathy when interpreting road situations (for example, deducing whether a pedestrian intends to cross, choosing to behave courteously in ambiguous situations, or recognising informal "give-way" rules). Judgements of whether a human driver was "careful and competent" are made by assessing behaviour in context, often through courts.

Automated vehicles, by contrast, operate through programmed decision-making based on sensor inputs and models. They therefore have advantages in perception, accuracy, and reaction time, but are constrained by how their systems interpret and prioritise information and manage uncertainty. Unlike humans, they do not possess social awareness or empathy and cannot make value judgements, which can be critical in real-world driving. Assessment of automated vehicles must therefore focus not only on observed outcomes, but also on their decision-making processes—that is, how they are trained, how they handle unfamiliar contexts, how they manage uncertainty, and how they make decisions in morally or socially ambiguous scenarios.



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It is also likely that “careful and competent” will continue to be interpreted differently for humans and machines and will therefore need to be defined through evolving standards and case law. In this sense, RoSPA does not believe it is feasible or desirable to attempt a single definition at this stage.

In your view, what are the implications of setting a safety standard equivalent to careful and competent human drivers?

RoSPA response

Setting the safety standard for automated vehicles as “equivalent to careful and competent human drivers” has important implications for road safety, public confidence, and innovation.

From a road safety perspective, this standard reflects a well-established benchmark and is higher than that achieved by the average human driver. However, if automated vehicles only meet this minimum, the potential safety benefits of the technology may not be fully realised. Automated vehicles have access to advanced sensors, continuous vigilance, and are not subject to distraction or impairment, enabling them to potentially exceed human capabilities in many scenarios. In this context, simply equalling human performance does not represent sufficient ambition.

From the standpoint of public confidence, this is particularly sensitive. While society has become reluctantly accustomed to fatalities resulting from human driving errors, people are less willing to accept deaths caused by machines. Individuals tend to hold automated systems to higher safety and moral standards than humans and are therefore more likely to reject deployment if they do not believe the technology will deliver safety benefits that clearly exceed human performance. For this reason, a standard described as “equivalent” may be perceived as insufficient to justify the risks of early adoption.

In terms of innovation, setting the legal threshold at “equivalent” provides a minimum standard that could facilitate early-stage deployment without delaying testing or roll-out.

In your view, what characterises a standard higher than careful and competent human driving and why? Your answer may like to consider capabilities, behaviours or outcomes.

RoSPA response

A safety standard higher than that of a careful and competent human driver should be characterised not only by better outcomes (e.g., fewer collisions, injuries, and traffic law breaches), but also by enhanced capabilities and more consistent behaviours than humans typically achieve.

In RoSPA's view, such a higher standard would be expected to demonstrate:



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- Superior perception and hazard recognition: continuous sensing and monitoring, free from distraction, impairment, or fatigue, allowing earlier and more reliable detection of hazards than a human could achieve
- Consistent rule compliance and risk-based decision-making: adherence to road traffic laws and Highway Code principles, combined with an ability to make faster, more reliable decisions without lapses in judgement
- Greater consistency of performance: unlike humans, automated systems should not perform better or worse on a journey due to stress, distraction, or inexperience. A “higher than careful and competent human driver” standard should be characterised by predictably safe performance across time, geography, operational design domains, and scenarios

Outcomes should also reflect this higher standard, for example, reductions in casualty rates, near misses, unsafe behaviours, and traffic law breaches relative to those observed among careful and competent human drivers. The performance of automated vehicles should not just match the baseline, but significantly outperform it, particularly in scenarios where human failure is most common, such as distraction, misjudgement, and fatigue-related incidents.

From a public acceptance perspective, a higher than a careful and competent human driver standard acknowledges that society is likely to expect a clear safety benefit to justify the deployment of automated vehicles. Achieving this higher benchmark would therefore help build trust and confidence in the technology.

In your view, what are the implications of setting a higher safety standard than careful and competent human drivers?

RoSPA response

Setting a safety standard higher than that of careful and competent human drivers has important implications for the development, deployment, and public acceptance of automated vehicles.

While it is recognised that a higher standard may delay the introduction of the technology compared to a minimum ‘equivalent’ baseline, RoSPA believes this is a necessary approach. Prioritising safety and ensuring automated vehicles meet or exceed high levels of human driving performance from the outset reduces the risk of incidents that could lead to pauses in deployment. Such interruptions, prompted by safety concerns, could significantly undermine public confidence in the technology. It is far better to ‘get it right first time’ by demanding a higher safety bar, thereby helping to maintain public trust and avoiding reputational damage.

However, it must be recognised that ‘perfect’ performance is neither viable nor realistic in the short to medium term. The focus should be on meaningful and measurable improvements over the safest and most competent human drivers, acknowledging that even the highest-performing humans are fallible.



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In your view, what evidence should be used to assess the safety impact that automated vehicles have on other road users through the hierarchy of road users? Provide specific evidence to support your response.

RoSPA response

The safety impact of automated vehicles on other road users should be assessed using an evidence base that captures both outcomes and leading indicators of risk.

Evidence sources should include:

- **Real-world collision and casualty data**
 - Police-reported collisions from the STATS19 dataset, disaggregated by road user type, location, and severity.
 - Insurance claims data and no-blame safety investigations to identify patterns beyond serious injury and fatal collisions.
- **Near-miss and "leading indicator" data**
 - On-board automated vehicle sensor logs of events such as emergency braking or close passes to vulnerable road users.
- **Compliance with Highway Code**
 - For example, measurement of automated vehicle compliance with overtaking distances introduced in the Highway Code in 2022
 - Evaluation of the "safety envelope" or "protective bubble" concept used by some AV developers, where anything entering a defined perimeter around the vehicle triggers a safety response. This should be tested for adequacy against the Highway Code requirements, and consideration should be given as to whether the parameters of this safety envelope should be set by developers or regulated by law.
- **Performance in complex environments**
 - Testing in operational design domains where vulnerable road users are prevalent, such as urban areas, rural lanes used by horse riders, and areas around schools.
 - Monitoring in low-light, poor-weather, and mixed-traffic environments to ensure consistent protection for vulnerable road users.
- **Behavioural interaction studies**
 - Eye-tracking and behavioural observation of pedestrians, cyclists and horse riders to assess whether automated exhibit predictable, safe, and courteous behaviour in line with human expectations.
- **International and cross-sector evidence**
 - Lessons from deployments overseas and data from overseas.
 - Insights from other automated domains (rail, aviation, industrial) on safeguarding.
- **Equity and inclusivity considerations**
 - Safety performance by demographic and protected characteristic, where lawful and ethical, to ensure no group is disproportionately at risk.

To comply with the Highway Code's hierarchy of road users, automated vehicles must demonstrate at a minimum equivalence with a careful and competent human driver, but also a measurable commitment to protecting those most at risk.



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What evidence are you aware of about the safety impact that automated vehicles will have on groups with protected characteristics?

RoSPA response

There is currently limited UK-specific, real-world evidence on the safety impacts of automated vehicles on groups with protected characteristics. This reflects the small scale, early stage, and restricted operational design domains of existing deployments.

To ensure safety performance meets the needs of all groups with protected characteristics, targeted research and trials should be commissioned on the following areas:

- **Accessibility research** – How automated vehicles accommodate disabled passengers, including wheelchair users, both as road users and in terms of in-vehicle accessibility.
- **Differential impact by age** – Effects on older adults and young children, considering both passenger safety and interactions as pedestrians.
- **Bias in AI perception** – Investigations into whether AV decision-making or object detection algorithms demonstrate gender, race, or other forms of bias.
- **Community-based case studies** – Trials in communities with higher proportions of people from protected groups, measuring safety outcomes, accessibility, and user trust.

Do you agree or disagree that the equality and fairness safety principle should be included within the SoSP?

RoSPA response

Agree.

Why do you think this? Provide evidence if possible.

RoSPA response

We agree that an equality and fairness safety principle should be included within the statement of safety principles. This principle would help ensure automated vehicles do not create disproportionate risks or barriers for people with protected characteristics, including disabled passengers, older adults, children, and minority ethnic groups.

Safety standards for automated vehicles must be designed to meet diverse user needs, covering aspects from wheelchair accessibility and safe boarding for those with mobility impairments to clear communication for people with visual or hearing impairments. Without such safeguards, there is a risk of exacerbating existing inequalities in



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transport safety and access. Current transport services often fail disabled people and other groups with diverse needs; automated vehicles present a rare opportunity to design inclusively from the outset. Simply replicating existing service models risks embedding even greater inequality into a system that is already failing these groups.

Evidence from early automated vehicle trials has shown that a lack of tailored design and response can disadvantage certain groups⁵, for example, vehicles not recognising mobility aids or failing to allow sufficient boarding time. The House of Commons Transport Committee's inquiry⁶ into accessible transport recommended improved service design, stronger follow-up on complaints, alignment of accessibility legislation with the Public Sector Equality Duty, and investigation of potential Equality Act breaches. Tokenistic measures, such as adding a ramp without addressing wider service design barriers, are insufficient. Disabled users often face complex planning requirements, digital exclusion due to smartphone-based booking systems, and lack of on-the-spot assistance if automated equipment fails. There needs to be far more meaningful engagement with disabled users.

This equality duty should be embedded from the very start of automated vehicle service design, not retrofitted later. It is both a moral and business imperative: services that are not perceived as safe, reliable, and inclusive will not be used by groups with protected characteristics.

Accessibility should be treated as a human right and protection from discrimination, not as an optional customer service feature. Embedding equality and fairness within the statement of safety principles will help ensure safety benefits are shared equally and maintain public trust in automated vehicle technology.

Do you agree or disagree that an equality and fairness safety principle should focus on all road users?

RoSPA response

Agree.

Why do you think this? Provide evidence if possible.

⁵ TRL (2024) *The impact of automated transport on disabled people: detailed methodology and findings*

<https://www.trl.co.uk/uploads/trl/documents/PPR2050-Impact-of-Automated-Transport-on-Disabled-People.pdf>

Date accessed: 12/08/2025.

⁶ Transport Select Committee (2025) *Accessible Transport: Legal Obligations*

<https://committees.parliament.uk/work/6805/accessible-transport-legal-obligations/>

Date accessed: 12/08/2025.



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RoSPA response

We agree that an equality and fairness safety principle should focus on all road users, not just passengers of the automated vehicle. Automated vehicles will operate in complex, mixed-use environments where they must interact safely with pedestrians, cyclists, horse riders, and other vulnerable road users, as well as with other motor vehicle users.

An inclusive principle would help ensure automated vehicles uphold the rules within the Highway Code, including the hierarchy of road users, which prioritises the safety of those most at risk in the event of a collision. Vulnerable road users already bear a disproportionate share of road traffic casualties, and without explicit safeguards, there is a risk that automated vehicle design could fail to address their needs or adequately protect them.

Focusing the principle on all road users reflects the real-world complexity of road environments and supports the safe integration of automated vehicles into the transport system. It would also help build and maintain public trust by ensuring safety benefits are shared equally, rather than concentrated solely on vehicle occupants.

In your view, what metrics, if any, should be considered to support monitoring and evaluation of performance against an equality and fairness safety principle?

RoSPA response

To effectively monitor and evaluate performance against an equality and fairness safety principle, a range of quantitative and qualitative metrics should be considered.

Key metrics include:

- **Collision rates disaggregated by road user group**, including pedestrians, cyclists, horse riders, and motor vehicle occupants, to identify whether any group experiences disproportionate harm.
- **Near-miss and intervention incident reports**, with specific focus on interactions involving people with protected characteristics (such as disabled road users or older adults), to provide leading indicators of risk before harm occurs.
- **User satisfaction and confidence surveys**, segmented by protected characteristics including age, disability, and ethnicity, to gather insights on perceived safety, accessibility, and trust in automated vehicle technology.

Data collected by public authorities, research institutions, and charities against these metrics may also provide valuable insights for monitoring and evaluation.



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In your view, what outcomes should be considered for the monitoring and evaluation of performance against the SoSP?

RoSPA response

In monitoring and evaluating performance against the Statement of Safety Principles, both lagging and leading outcomes should be considered to provide a comprehensive view of automated vehicle safety performance.

Lagging outcomes include metrics such as the number of collisions involving authorised automated vehicles and the number of people killed or seriously injured. Total casualty rates should be disaggregated by road user type (including pedestrians, cyclists, horse riders, and vehicle occupants) to identify which groups are most affected.

However, lagging indicators alone do not fully capture risks or emerging safety concerns. Therefore, leading indicators should also be considered. These include the number and pattern of traffic law breaches (e.g., failing to adhere to the Highway Code) and the frequency of near misses or intervention incidents.

The complexity of real-world driving scenarios means there is a need to assess how automated vehicles mediate their responses contextually. For example, while automated vehicles may strictly adhere to rules, this rigid compliance can sometimes create unsafe situations, such as stopping abruptly at amber lights, which can lead to rear-end collisions when human drivers expect different behaviour. Similarly, automated vehicles must be capable of adapting in exceptional circumstances—for instance, if an ambulance is passing and wants the vehicle to pull onto the pavement, but pedestrians are present—reflecting the type of instinctive judgement humans apply. Therefore, monitoring should include evaluation of whether automated vehicle systems can flexibly interpret and respond to nuanced road situations without compromising safety for any road user. This could involve assessing incidents where strict rule adherence may have caused unintended hazards or near misses, as well as measuring the effectiveness of contextual decision-making in complex scenario.

In your view, what sources of information could be used to monitor and evaluate performance of these outcomes?

RoSPA response

RoSPA believes that monitoring and evaluating automated vehicle safety should draw on a combination of data sources to provide a comprehensive understanding of outcomes.

Official data such as STATS19 police collision reports, hospital admissions data, and enforcement data from traffic cameras offer authoritative information on incidents and compliance with traffic laws.

Operator data, including vehicle telematics and sensor logs, can provide real-time insights into near misses, disengagements, and driving behaviour.



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Insurance and claims data contribute valuable information on the frequency of incidents and compensation trends related to automated vehicles.

Public and user feedback, particularly surveys targeting vulnerable and protected groups, helps to identify safety and accessibility concerns while also tracking public confidence and acceptance of the technology.

Finally, academic and independent research plays a crucial role in offering objective evaluations of automated vehicle trials and in comparing their safety performance against human drivers.

In your view, what evidence sources could be used to compare the safety performance of human drivers and automated vehicles?

RoSPA response

To compare the safety performance of human drivers and automated vehicles, a comprehensive set of evidence sources should be considered.

Official datasets, such as STATS19, provide detailed police-recorded collision and casualty information for both human-driven and automated vehicles.

Insurance claims databases offer valuable comparisons of the frequency and severity of claims, highlighting differences in incident outcomes between human drivers and automated systems.

Operator-reported data, including automated vehicle incident logs, near-miss reports, disengagements, and traffic rule breaches, provide insight into operational performance, system reliability, and the challenges faced by automated vehicles in real-world environments.

Additionally, international automated vehicle trial reports and disengagement logs offer broader context, lessons learned from varied operational domains, and comparative insights across jurisdictions.

To ensure robust and fair comparisons, exposure data, such as vehicle miles travelled broken down by road type, time of day, and weather conditions, is essential to control for situational factors that influence safety outcomes.

In your view, what metrics comparing the safety performance of human drivers and automated vehicles should be annually reported on by the Secretary of State for Transport?

RoSPA response



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RoSPA agrees that the Secretary of State for Transport should annually report key safety metrics comparing human drivers and automated vehicles to ensure transparency and public accountability. These metrics should include:

- Collisions per million vehicle miles travelled, broken down by road type (urban, rural, motorway).
- Killed and seriously injured (KSI) rates per million miles travelled, comparing automated vehicles with human-driven vehicles.
- Frequency of near misses, disengagements, and traffic rule breaches, relative to exposure, based on operator-reported data.
- Crash causation factors, highlighting differences between automated vehicle errors and human driver errors.
- Operational design domain compliance, including performance across different weather, lighting, and road conditions.

Where possible, operator data should be publicly shared within the annual report to provide deeper insights into automated vehicle performance beyond collisions, helping to build confidence in the safety of this emerging technology.

Do you agree or disagree with our proposed approach to these potential principles?

RoSPA response

Agree.

Why do you think this? Provide evidence if possible.

RoSPA response

RoSPA agrees in principle with the proposed approach, provided that any elements moved elsewhere are addressed through robust technical standards and regulatory frameworks (e.g., type approval, cybersecurity regulations). It is essential that relocating these elements does not dilute the focus on safety, accountability, or public transparency.

For example:

- If cybersecurity requirements were moved entirely into separate regulations without clear linkage to the statement of safety principles, the public may have less visibility of how these safeguards operate in practice, potentially undermining confidence in automated vehicle safety.
- Removing "explainability" from the statement of safety principles could weaken ethical oversight in complex edge-case decision-making.



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RoSPA also seeks assurance that areas such as cyber resilience, the ability to operate safely without human monitoring, and the avoidance of unintended changes in human behaviour in response to automated vehicle operation will continue to be effectively scrutinised through other mechanisms.

In your view, are there any other principles you consider should be included within the SoSP?

RoSPA response

Yes.

What other principles do you think should be included and why? Provide evidence if possible.

RoSPA response

RoSPA recommends that additional principles be included within the statement of safety principles to strengthen safety, accountability, and public trust:

1. Equality and fairness – While referenced in the current proposals, this should be explicitly stated to ensure that automated vehicles do not inadvertently disadvantage vulnerable or protected groups, whether as passengers or other road users. Evidence from early automated vehicle trials shows that vehicles can fail to detect mobility aids or adapt to accessibility needs, highlighting the need for a clear equality principle.
2. Lifecycle safety and component degradation – Safety assurance must cover the vehicle's full operational lifespan, recognising that components such as sensors, tyres, and braking systems degrade over time. Aviation-style maintenance and inspection regimes could help manage these risks, ensuring that vehicles remain safe long after initial approval.
3. Transparency and public trust – Public confidence depends on the regular and accessible publication of safety data, including collisions, near-misses, traffic law compliance, and operational design domain limitations. Transparent reporting allows independent assessment and reassures the public that safety is prioritised.
4. Continuous learning and improvement – Safety cases and operational procedures should be updated on an ongoing basis in response to real-world performance data, ensuring that lessons are learned promptly and risks are progressively reduced. This is particularly important given the dynamic environments in which automated vehicles operate.
5. Ethical decision-making and societal values – Automated vehicles will inevitably face situations where collisions may be unavoidable. Decision-making frameworks should be culturally informed, ethically consistent, and shaped with public input. Mechanisms such as citizens' councils or "jury of peers" models could help define reasonable or acceptable risk. Typically, the public holds



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machines to higher safety standards than humans, so transparent, participatory processes are critical for alignment with societal expectations.

Provide any further evidence you wish to submit for consideration on what safety expectations should be set for the deployment of automated vehicles.

RoSPA response

RoSPA has no further comment.

Any other comments?

RoSPA response

RoSPA would like to emphasise that the introduction of automated vehicles must not require existing road users—particularly vulnerable groups such as pedestrians, cyclists, and horse riders—to change their behaviour in order to remain safe. Automated vehicle systems should be designed and operated to prioritise the safety and accessibility needs of all road users, embedding inclusivity at the core. This approach ensures that vulnerable groups are not placed at additional risk or burden and can interact with automated vehicles confidently and without compromise.

RoSPA has no further comments on the consultation process and would like to thank CCAV and DfT for the opportunity to respond. We have no objection to our response being reproduced or attributed.

