Salisbury House, 29 Finsbury Circus,
London, EC2M 5SQ
+44 (0) 207 167 3341
contact@its-uk.org
its-uk.org

Intelligent Transport Systems UK
Empowering Transport Technology

Response to the consultation on Automated Vehicle Statement of Safety Principles
Intelligent Transport Systems UK

About Intelligent Transport Systems UK
Intelligent Transport Systems UK (ITS UK) is the national industry association for transport technology, representing a sector worth £3.2 billion, supporting 45,000 jobs and providing £500 million in tax revenue each year. We provide a national platform to support the roll out of technology for a cleaner, safer and more effective transport network, both at home and abroad.

ITS UK has 200+ members, from both the private and public sector, covering all sizes and disciplines, with members working in areas like smart ticketing, mobility as a service (MaaS), integrated transport, real time passenger information, public transport services, traffic management and enforcement, demand responsive transport, road user charging, connected and autonomous vehicles, and much more.

This response has been prepared by ITS UK with support from our Future Roads Forum Committee. We would be happy to provide further information on the submission provided below. If this would be of use, please email ITS UK Public Affairs & PR Manager Eduardo Pitts, at eduardo.pitts@its-uk.org.

Overview of ITS UK's Position
ITS UK supports the Draft Statement of Safety Principles as a strong and sensible basis for regulating automated vehicles, particularly its focus on compliance with road rules, predictable behaviour, proactive hazard response, operating within design limits, and protecting vulnerable road users.

We would, however, welcome greater detail on how these principles will be translated into measurable requirements in practice, including the evidence expected at authorisation, the data and metrics to be monitored post-deployment, and how performance will be assessed against careful and competent human driving. We would also like to see more clarity on the handling of edge cases, fallback and safe-state behaviour, interaction with emergency services, and the role of the SoSP in supporting insurance, liability, and compliance frameworks. In addition, we believe there is scope for stronger understanding on representative GB data, equality impacts across all road users, and the need for ongoing review as systems, software and operating environments evolve.

Below we have provided responses to specific questions.

Question 1: Do you agree with the purpose of the SoSP?
We support the SoSP being used to guide the Secretary of State in considering the self-driving test and to support authorisation, ongoing monitoring, and annual safety assessment. We also see a wider role for the SoSP as a foundation for insurance standards and liability frameworks, early-stage trials, international harmonisation, and training for emergency services and local authorities.

Question 2: Do you agree with the safety standard being set at equivalent to careful and competent human drivers?
We support the standard being equivalent to careful and competent human drivers, provided it is applied in a measurable and evidence-based way. Careful and competent is still a subjective measure; by setting more objective targets e.g. accidents per vehicle kilometre, Government could set a standard which AV services can outperform human drivers on. We consider this an appropriate balance between safety ambition and the practical ability to deploy, while recognising that a higher-than-careful-and-competent benchmark would be difficult to define and could delay deployment.

Question 3: Do you agree with using behaviours as the basis for developing the principles within the SoSP?
Yes, we support using behaviours as the basis for the principles. However, we believe the behaviours also need qualitative and quantitative measures to support safety outcomes and accountability. For example, on hazard anticipation as a behaviour, under rainy conditions does the AV increase its distance to the vehicle in front by a certain amount? Whether behaviours are enacted correctly can also be subjective and differ as conditions on the road change.

Question 4: Do you agree with the identified behaviours of vehicle control, hazard anticipation, perception and reaction, obeying traffic rules, interaction with other road users, and adaptability to road conditions?
Yes. We consider these behaviours to capture both technical capability and human–machine interaction complexity. However, there is significant overlap between several of the behaviours. Perception and reaction could apply to hazard anticipation as well as interactions with other road users and good vehicle control.

This could make following one behaviour limit or infringe another. For example, perception and reaction to avoid a collision, could involve ignoring behaviours such as harsh braking or obeying traffic laws. We suggest defining behaviours with expectations and exemptions under the right circumstances.

Question 5: In your view, what behaviours do you think are missing and why?
In our view, there could be other AV-specific behaviours to consider. First, how do AVs improve on displaying existing behaviours over time? We suggest performance against behaviours is likely to improve as technology develops and vehicles learn from continuous experience at fleet level. Furthermore, improved technology will coexist with all other road users becoming accustomed to sharing the road with AVs – for example, pedestrians will increasingly understand how AVs stop at zebra crossings.

Alongside improvements, we suggest the ability to detect and respond to faults, and transparent risk-based decision-making as a behaviour to be assessed. For example, how does a vehicle determine whether a journey can be undertaken depending on the status of the vehicle? It will need to consider the state of tires, oil, charging levels and other such factors, and its ability to do this will be a key determinant of how safe it will be.

Question 6: Do you agree with the proposed principles on improving road safety for all and interacting safely with other road users?
Yes. We support these principles and agree that fairness should be included where it implies equity. We also support focusing on all road users and following the hierarchy of road users, with particular attention to vulnerable road users.

Question 7: Do you agree with the inclusion of Principle 1?
Yes. We strongly support AV compliance with traffic laws, speed limits, signs, road markings and temporary restrictions as well as AVs not contravening traffic rules such as one-way restrictions, no-entry restrictions, red signals or Red Xs. However, there might be circumstances where following traffic laws could be more detrimental to the safety of passengers and the operation of the network. ITS UK suggests these are considered as edge cases and are treated as such under assessment of compliance.

Question 9: Do you agree with the inclusion of Principle 2?
Yes. We support the principle that self-driving vehicles should maintain control over vehicle driving dynamics at all times, including smooth, stable driving and safe performance during unexpected events or rapidly changing conditions.

Question 10: Do you have any comments, including textual amendments, on Principle 2?
Principle 2 might benefit from specifying that it refers to how the self-driving vehicle drives, and not how the system maintains control – since software will always be performing the driving task.

Clarifying this could bring clarity to what we believe is meant by principle 2, which is that the vehicle should maintain smooth, safe, stable driving dynamics, including during unexpected events.

There is a gap, where principle 2 could be expanded to include in-vehicle hazards and unexpected events e.g. a child removing their seatbelt.

Question 11: Do you agree with the inclusion of Principle 3?
Yes. We support proactive hazard prediction, detection and response, with safe, timely and contextually appropriate action to avoid or minimise harm.

Question 12: Do you have any comments, including textual amendments, on Principle 3?
In our view, predicting, detecting and responding to hazards is essentially covered by other principles.

Question 13: Do you agree with the inclusion of Principle 4?
Yes. We support the principle that AVs should adapt driving to road and weather conditions. This is essential to safe performance across changing environments.

Question 14: Do you have any comments, including textual amendments, on Principle 4?
Principle 4 would benefit from being framed around expected behaviours to adapt to road and weather conditions. As stated previously, established quantitative and qualitative parameters on how vehicles behave in changing road and weather conditions would make evaluations easier on whether the behaviour and aims of principle 4 is being met.

Question 15: Do you agree with the inclusion of Principle 5?
Yes. We support predictable behaviour and clear communication of intention to other road users. AVs should behave consistently so other road users can understand and anticipate what they will do.

Question 16: Do you have any comments, including textual amendments, on Principle 5?
We agree with principle 5, we believe road users will also be part of the adaptation process in learning how to behave around AVs. However, this principle could use more clarification on who qualifies as a road user i.e. are pedestrians included and whether both behaving predictably and communicating with all road users will be standardised across suppliers and operators.

Question 17: Do you agree with the inclusion of Principle 6?
Yes, although in our view, the fact that self-driving vehicles should improve safety in whatever their operational domain is, is already covered by the other principles.

Question 18: Do you have any comments, including textual amendments, on Principle 6?
Something to consider on principle 6 is whether the requirement to improve road safety for all should mean that, where possible, hazards identified by AVs should be shared or communicated with other road users and the authorities.

Question 19: Do you agree with the inclusion of Principle 7?
Yes. We support safe interaction with all road users, particularly vulnerable road users. In line with our call for evidence response, we highlight the need to particularly support pedestrians, cyclists, motorcyclists, children, older adults and disabled people.

Question 20: Do you have any comments, including textual amendments, on Principle 7?
We would welcome stronger operational detail on how ‘consideration’ will be monitored. Incident evidence should be classified by the type of road user involved, to support analysis of impacts across different groups. But it is also important to highlight, that AVs performing in ‘overly courteous’ ways, may lead to the vehicle driving inefficiently if awarding priority unconditionally where this priority is not warranted. It is key that these ‘at-risk’ groups are well defined and identified by the technology.

Question 21a: Do you agree with the inclusion of Principle 8?
Yes

Question 22a: Do you have any comments, including textual amendments, on Principle 8?
What counts as an emergency service or an authorised official – for example, do traffic officers count as emergency services? What about those that are empowered to stop and direct traffic in general, such as school crossing patrols? Furthermore, it would be beneficial to make a clear distinction between Police Traffic Officers and National Highways Traffic Officers, as their respective powers and responsibilities differ significantly.

Question 21: Do you agree with the inclusion of Principle 9?
Yes. We strongly support the principle that self-driving vehicles should only operate autonomously within the limits under which they are specifically designed to function. AVs must recognise system capability limits and have appropriate strategies where a vehicle risks exceeding those limits.

Question 22: Do you have any comments, including textual amendments, on Principle 9?
We note that there may be times when vehicles could be forced out of their operational domain due to diversions or unforeseen conditions e.g. weather conditions which weren't forecasted or a long diversion due to an accident. Vehicles must be able to – and allowed to – operate outside of their domain in these situations, or decide that they cannot start the journey. We would welcome more detail on how operating domain boundaries, fallback procedures and out-of-domain operation will be monitored and enforced.

Question 23: Do you agree with the inclusion of Principle 10?
Yes. We support taking account of the specificities of the territory where AVs operate. Comparisons to human drivers should be based on representative comparable locations and circumstances and on sufficiently representative GB drivers who are unimpaired, not distracted and who obey traffic rules. More detail would be welcomed on what other comparisons to human drivers are being made. To start with, AVs can be compared to data from drivers within their exact operational domain, like the city or region they're deployed in, as regional discrepancies exist.

Question 24: Do you have any comments, including textual amendments, on Principle 10?
More clarity would be welcome on what is meant by taking account of specificities of the territory. It is unclear whether comparable locations would constitute similar geography, weather, driving behaviours, etc. Furthermore, it is unclear if comparisons with other countries that meet these criteria count too.

Question 25: In your view, should any currently excluded areas be included in the statement of safety principles?
No.

Question 29: Any other comments?
Our overarching view is that the SoSP will need clear definitions of what is expected and the supporting metrics for how the achievement (or otherwise) of the principles can be evidenced. They should be practical, measurable and usable across authorisation, post-deployment oversight and annual monitoring.

Intelligent Transport Systems UK
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