

Concept paper on liability for highly automated and connected vehicles
GEAR 2030 Working Group 2/Project Team 1
Meeting of 13 June 2016

It should first be noted that the question of liability for highly automated and connected vehicles cannot be answered unless a number of other issues have first been addressed. Many of these issues are actually to be discussed in other sub-groups of PT1, most notably traffic rules, the process for the certification/approval of vehicles (and how certain stakeholders such as insurers can be involved in it), driver education or road user behaviour.

The discussion on liability and automation can be structured around the five levels of automation or, to make it simpler, with a distinction between partial to highly automated vehicles on the one hand (up to level 4) and fully automated on the other (level 5). However, the regulatory framework which will emerge over the coming years is unlikely to follow this pattern and will most likely be much more detailed (focusing on the various automated functionalities rather than on broad levels of automation).

Liability transfer

- Simply put, the issue at the heart of discussions on liability for highly automated and connected vehicles is who between the driver, the manufacturer or other parties (data/vehicle owner, software developer, network operator, telematics service provider) should be held liable in a number of 'typical' scenarios.
- The simplified view is that for fully autonomous vehicles, the shift will be from the individual owner or user of the vehicle to the manufacturer: where there is no longer a driver, accidents will result primarily from vehicle technology failure. However:
 - Even in a fully autonomous vehicle, the owner or user will still have responsibility for its safe operation: ensuring the vehicle is used in accordance with the manufacturer's operating instructions (e.g. not to use the vehicle in bad weather or certain road conditions), keeping the vehicle in a good state of repair (e.g. keeping sensors clean, downloading software updates, ensuring regular servicing).
 - Where some residual control of the vehicle is possible (e.g. an emergency 'stop' button), the circumstances surrounding the use/non-use of this function can be scrutinised and impact the outcome in terms of liability.
 - This shift may not necessarily be deemed to be in the public interest, as it may compromise/delay/hinder compensation for third party victims, who may have to pursue complex actions directly against multiple parties (not necessarily just manufacturers).
- Behind this question lies the issue of the liability transfer between the parties. There are three main reasons behind this transfer:
 - A shift in decision making: from drivers to manufacturers of the vehicle or the software/algorithm.
 - Vulnerability to third-party shortcomings: highly automated/autonomous vehicles will also be connected vehicles, which will expose them to third-party actions, such as security/performance controls. There may be shortcomings in these controls, which could lead to incidents.
 - Decrease in driver engagement: users will rely fully on the vehicle's technology and operate it with less caution than intended (e.g. insufficient maintenance, non-approved use cases).

- Four approaches/options can be envisaged to manage this liability transfer:
 - Treat autonomous vehicles and human drivers equally: The operation of autonomous vehicles in any traffic situation does not alter liability for drivers or vehicle manufacturers, and the liability of autonomous vehicles is approached the same way as that of other vehicles.
 - Pros: Reduce uncertainty surrounding the liability of drivers and vehicle manufacturers and avoid the burden of additional litigation.
 - Con: May stall technology improvements.
 - Find an agreement on liability claim resolution across the relevant industries: quick claim resolution rules for typical crashes between insurers are extended to autonomous vehicles.
 - Pros: Avoid costly litigation and ensure timely settlement.
 - Con: Difficulty in negotiating agreements between stakeholders and likely inconsistencies across jurisdictions.
 - Let compliance with performance standards pre-empt further liability: compliance with government-endorsed performance standards protects vehicle manufacturers from liability (leaving users/owners to shoulder it).
 - Pros: Reduce uncertainty surrounding the liability for the automotive industry and enable future (safety) improvements.
 - Con: In-depth expertise required on the regulator's side, which will devise those standards.
 - Introduce a government fund/instrument for new emerging risks: limit the total financial liability obligation borne by any industry (automotive, insurance, technology) through pre-determined ceilings to liability.
 - Pro: Reduce the uncertainty for consumers and the industry.
 - Con: Potentially costly for government, and may act as a disincentive for safety improvements.

- Generally speaking, a wide range of factors should be taken into account when weighing the pros and cons of the various possible approaches:
 - Legal certainty;
 - Litigation burden (cost and time);
 - Access to justice for consumers, (including for third party victims);
 - Level/type of compensation;
 - Scale of regulatory changes needed;
 - Dependency on industry cooperation;
 - Cost to consumers and other stakeholders (industry or public authorities);
 - Encouraging rather than stifling innovation; and
 - Public/industry acceptance.

- Finally, any approach must also provide for the (likely lengthy) transitional period during which vehicles with various levels of automation and connectivity will coexist in the same environment.

Data on liability

- Discussing liability must not be reduced to discussing who is liable, but must also cover how we investigate a given incident to determine who is liable i.e. access to the data surrounding the incident. This is obviously an area of overlap with the work stream on connectivity/data, as it is related to the wider issue of access to in-vehicle data (including for commercial purposes).
- Whatever the approach which is chosen to determine liability, it will be necessary for a number of stakeholders (authorities, manufacturers, parts suppliers, software companies, insurers) to be able to

access the vehicle data in order to determine the circumstances surrounding a given incident, any possible defect or fault in the system, or whether the vehicle was operating under a partially/fully automated mode.

- This leads to the question of automated driving data recorders:
 - the conditions surrounding their use, from the consumers' perspective: can they switch them off at any point in time?
 - from other stakeholders' perspective: who has access and on what grounds?
 - the collection/storage of their data
 - the legal/evidential value of this data (absolute?)
- This raises the issue of the likely need for a distinction between the data necessary to establish liability and the other data, and the definition of the former category:
 - whether the vehicle was driven by the driver or by the autonomous system, or a combination of both (which automated functionalities were being used).
 - In which conditions were the sensors on which the automated function(s) at hand relied: were some sensors maladjusted, incapacitated by weather conditions/dirt, unable to read damaged road signs/deficient markings on roads etc.
- The conditions under which this data can be accessed (i.e. legal right to access, industry agreement, need for court decision...) are also important, as it could impact the speed with which a given claim is resolved, and therefore impact on considerations such as access to justice, litigation burden etc.