

Submissions for NTC Consultation RIS - Developing technology-neutral road rules for driver distraction

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I am considering “distraction” in the sense that: events have occurred; circumstances have changed; or situations are developing; that will affect the driver; that they are not aware of in sufficient time; due to their focus being elsewhere; at a critical time.

In the Vehicle:

Technology can reduce the consequences of distraction, or inattention, and can greatly assist in dealing with complex road situations. This includes the use of adaptive “cruise control”, with the capability of stopping the vehicle, particularly in traffic. This provides the double advantage of removing “thinking time”, and also encouraging drivers to respect speed limits automatically. Similarly, other collision prevention variants that attempt to automatically stop the vehicle in the case of pedestrians or other road users unpredictably entering the vehicle’s path. Also other detection that identifies vehicles in the “blind spot”, and ideally provides an audible alarm in case of the manoeuvres that potentially dangerously increase their proximity. Lane departure alarms are also very useful.

There are technologies that can evaluate the driver’s behaviour, with respect to normal levels of attention to the road. By observing the driver’s face, level of attention to the road, and integrated with other sensors (as above) can allow AI to form objective conclusions about diminished capacity (including fatigue, illness, or even inebriation). This would include distraction resulting from the load or the passengers in the vehicle. For example small children. Or fiddling with a GPS or telephone. Suzuki operate a much simplified form of this, which suspends their cruise control function in case of the driver failing to respect line markings with an unacceptable frequency, for example. These technologies can assist in moving the management of safe driving outcomes from the domain of legislation and driver rules (and driver respect of them/policing) to a more relaxed and safer driving experience that happens by default.

Wherever possible, key driver information should be available in the form of a heads-up display, rather than needing to look away from the road.

Until autonomous vehicles become the norm, I would require that all new vehicles must be fitted with these technologies. The cost is trivial by comparison with the financial and personal cost of road accidents, and could presumably be encouraged via differential insurance charges, if there is less appetite to force by legislation. The extent of those capabilities can be the subject of regulation.

On the Road:

All vehicles should be equipped with good quality GPS systems that operate all the time, and which provide aural information rather than simply visual. Australian roads are generally visually “noisy”. There is a significant amount of advertising and very often an excess of written direction to road users. This is particularly distracting when drivers are in unfamiliar circumstances and may be searching for a route or

destination. (Note that this is a great contrast with Europe, where the level of visual “noise” on roads is typically much lower). In the meantime, look at reducing the quantity of signage, and also make it far less verbose!

Speed limits should be displayed within all vehicles, triggered by the zone, rather than relying on the driver being lucky enough to spot one of a limited number of roadside signs or similar. I would use these speed limits to automatically trigger cruise control speeds, that can only be overridden by an unequivocal instruction of the driver. Speed limit signs are easily missed, particularly when obscured by large vehicles, or trees, etc, or in locations where drivers have not looked in that direction in the instants when the signs are visible.

Probably the largest single source of reduced road information, for general users, is large vehicles. They obscure the essential view of traffic and road conditions/information beyond them. All vehicles above a certain size should be required to display the view on the other side of them. For example, the rear of a large truck or bus, and indeed most commercial vehicles, should show the view of the road ahead of them. Similarly, the side of large trucks should show a view of the road on the other side of them. The much improved view will allow drivers to better read surrounding road conditions, including better information on the opportunity to overtake.

Drivers:

In addition to fatigue, general levels of attention and focus, and other in-car behaviour that can be monitored to identify distraction, there is the issue of more general behaviour or fitness to drive.

A significant amount of hazard is created by driver aggression and rage; taking advantage of “safe” spacing of other drivers as part of a strategy for beating the rest of the traffic; excessively frequent lane changing; wilfully and significantly exceeding speed limits. Anything other than thoughtful, courteous driving unnecessarily raises stress levels and magnifies risk.

In my personal opinion, some people are fundamentally unsuitable to be allowed to drive, and this can be tested for. Driving is a privilege, which should be extended only to those who are suitable to take their responsibility seriously. I would recommend that say 1-2% of applicants should not receive a driving licence, based on attitude testing.

However, AI in a vehicle could be used to detect definitive combinations of behaviour-related indicators that might flag unacceptable antisocial drivers in action, such as: “G” forces and frequency of braking and acceleration, and during manoeuvring; space from the vehicle in front; frequency of impacts; frequency of use of the horn (and the frequency of hearing the horns of others); as well as visual in-cab behaviour.

Other:

As a general comment, I would suggest that focussing on the use of mobile phones alone, without considering the much wider range of factors affecting driver attention, risks deviating towards a witch-hunt of people using new technology. In turn, this would tend to mitigate against encouragement of the use of facilitators such as GPS

and other in-car systems providing better information on road conditions and impending hazards.

Yes to hands-free; voice control; dictating messages. Of course No to phones in laps; hand-tapping of SMS messages; reading messages. But also no to attending to babies when driving; no to the breakfast newspaper on the steering wheel; no to peeking at the map laid out on the passenger seat; etc.