**COMMENT ON AUTOMATED VEHICLES PAPER**

I have read the Automated Vehicles paper and I have a difference of opinion than that put forward in it.

I have my doubts that our road system along with its variety of users is ready for unfettered use automated vehicles.

The paper claims automated vehicles will make our roads safer, however, it’s my opinion that we are a long way off from that. It can only happen when every vehicle on the road is automated and programmed with the same set of software decision making algorithms. In the interim, there is potential to increase crashes rather than decrease them.

Below I have listed a set of driving condition scenarios where an automated vehicle would be challenged. It is questionable that a safe decision could be made, as follows;

If an Emergency Vehicle is in front of or behind trying to overtake the automated vehicle, will the automated vehicle recognise this situation? What is the decision making
process – will it move to the left or right or stop? How does it know what an emergency vehicle is?

Similarly, in NSW, drivers are required to slow down to 40km/h for Police or emergency vehicles. This means the automated vehicle must be able to detect the colour of flashing lights and their combination of colours as the rule doesn’t apply to all vehicles. Similarly, the rule changes where the road speed limits are higher. I appreciate this latter problem can be overcome with GPS however the GPS database must be 100% accurate and identical in every automated vehicle.

How will a road train or b-double handle this because such situations often require hard brake applications because the breakdowns or road accidents tend to be in places with short sight distances?

In NSW, the law requires drivers to keep a clear distance from bicycle riders of 1m on roads up to 60km/h posted limit and 1.5m above 60km/h. This means the automated vehicle must decide what a bicycle is as it doesn’t apply to motor cycles and scooters.

In NSW we have lane filtering for two wheeled vehicles meaning that a motor cycle or bicycle can drive between other vehicles and their lanes. The automated vehicle must be able to recognise this situation especially where the cycle pulls over in front and stops, with the rider wanting to turn right or left.

Near where I live there is a street that is three lanes wide. During the day, cars are parked on both sides so there remains one lane only in the centre. When a vehicle arrives at both ends the two drivers make a decision of who goes first by hand gestures, flashing headlights or a series of short sharp moves. How will an automated vehicle make such a decision when it is not in contact with the vehicle at the opposite end of the street? Furthermore, often there are more than two cars involved as other drivers come up from behind and start blowing their car horn.

Similarly, that street is not flat but has a large depression over its full length. As such, the line of sight distance is not the same as the actual road distance. How will an automated vehicle compute that? Can it differentiate dipped roads and see ahead and calculate distances correctly

Can an automated vehicle take into account a mother duck walking its baby chicks across a road? Will it recognise a small item or series of small items?

If the automated vehicle is a road train or b-double, will it pull over to the left or slow down to allow another vehicle to overtake from behind or pass in the opposite direction when the road width is insufficient to do it at speed?

The automated vehicle must be programmed not to allow a speed greater than that posted. It has to accept and cater for other vehicles which are not driving at the posted speed limit and will be overtaking. All the basic data parameters should be in the same software language so an enforcement officer can retrieve it without difficulty.

How will an automated vehicle handle ice or gravel on a road to know when to slow down?

Can an automated vehicle handle tram-lining?

What is the decision making process for an automated vehicle to overtake a slower vehicle and what will it do when being overtaken by another vehicle? Will it cross over lane marking lines to overtake? Can it determine broken & unbroken lines and a combination of the two?

Cyber safety is paramount for automated vehicles. They must have secure networks and shrouded from all forms of interference.

How will an automated road train keep track of trailer swing out so the trailers do not hit another vehicle or go off the road?

If an automated vehicle overtakes a road train or two road trains are passing each other in opposite directions, how will the sensors and cameras handle the clouds of dust and flying stones that could affect sight distance for 30 seconds or more.

Similarly, now that the Heavy Vehicle Regulator decided to abandon the water spray suppression project a few years ago, how will the sensors handle the loss of vision in water vapour clouds (or fog) and if using radar or microwave see through the clouds of water spray, enable the decision making process to proceed including turning through a bend or corner where there is no forward visibility?

Can an automated vehicle account for temporary road works speed limits and short term road closures/controls say where a traffic control officer is present in charge of a crane unloading something?

Regards

Peter Goudie