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Legal frameworks for autonomous vehicles

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COMMENTARY

LEGAL FRAMEWORKS FOR AUTONOMOUS VEHICLES

SMU's **Assoc Prof Chen Siyuan** shares his thoughts on the legal challenges for autonomous vehicles when it comes to road safety.



Dr. Chen Siyuan, Associate Professor of Law at SMU, and Director, Moots

The deployment and use of autonomous vehicles (AVs) have been one of the initiatives of Smart Nation Singapore since 2015.

Proponents of AVs point to improvements in road safety and transportation efficiency of people and goods as the main justification for embracing the technology.

High-profile accidents involving AVs, on the other hand, have raised concerns about the reliability of the technology. But technology may not be what really stands in the way of AVs becoming mainstream and part of our daily life.

AVs have been incrementally rolled out in Singapore in the last few years – see, for instance, the driverless trucks in Jurong Island (2017), the driverless buses in some of our universities (2018), and the driverless shuttles in Gardens by the Bay (2019). KPMG International had even ranked Singapore as the number one country in the world in its 2020 AV Readiness Index.

The technological side of things, therefore, appears to be on track with the government's aim to deploy AVs on a much wider scale for a vast array of users in the foreseeable future.

The days of testing AVs rigorously in isolated driving circuits or using them in less dynamic conditions would soon be a historical footnote. What about the legal side of things?

Challenges in applying existing legal frameworks

The challenges of regulating AVs become quite apparent when we consider how road traffic is currently legislated for.

If a human driver were to get into a road traffic accident today and the matter goes to court, one can look to the law of negligence (whether the driver was driving properly, and whether the victim had any role to play) if it is a civil case and, to speak in slightly broader strokes, the degree of recklessness and harm caused to persons or property if it is a criminal case.

Moreover, insurance is mandatory, there is no issue of having an identifiable driver, and expert evidence and forensic analyses are unlikely to be necessary based on how the Singapore courts typically approach road traffic litigation.

So, there are no real legal gaps for non-AVs and indeed, road traffic has been part of Singapore life for decades in part because the applicable laws, as well as the post-accident processes and outcomes, are fairly clear.

While it is possible that accidents can occur due to vehicles malfunctioning, that appears to be very rare, but even when there might be a case of malfunction,

figuring out what malfunctioned is generally not something that is insurmountable either in terms of costs or availability of expertise.

It is not obvious how the current legal framework described above can apply neatly to AVs, or even at all.

For a start, one should be able to assume that AVs would eventually be operable with no human driver or human intervention needed – or what the Society of Automotive Engineers calls AVs with Level 5 Full Automation.

But without a human in the equation, it would seem that the law of negligence has nothing meaningful to contribute to the question of liability when road traffic occurs.

Who would owe a duty of care to other road users in this scenario? What would be the standard of care? Would separate legal entities need to be created? Would different negligence rules apply to different levels of automation – and what about AVs that are deployed as fleets and controlled by remote operators? In criminal cases, how would an AV act rashly?

The alternative of product liability does not offer a ready solution either. In other jurisdictions such as the US and the EU for which this doctrine has steadily developed over time, the key to successfully invoking it in legal proceedings is tracing – and proving – responsibility for the product's defect.

In non-AVs, the inquiry is likely to revolve around the hardware, but as mentioned, investigating hardware malfunction is generally not considered an impossible task.

For AVs, not only is there more hardware in the equation – say lidars, sensors, image capture, wireless connectivity – there is also software. AVs rely on plenty of data to make the correct decisions in environments with countless variables.

This data would also constantly need to be updated, and the code that goes into the decision-making matrices would be closely guarded information, and even if presented in a court should litigation ensue, experts would be needed to interpret the code.

In other words, the costs of litigation may very well outweigh any benefits from succeeding in bringing a claim.

Moving away from fault-based regimes and focusing on regulation?

Other countries have spent vast resources looking into the question of what the appropriate liability regime should be for AVs. It is a process that requires the engagement of many different stakeholders, from manufacturers of hardware and software to policymakers and actuaries.

Most countries, like Singapore, have not ventured beyond tweaking existing road traffic laws to accommodate the testing of AVs. The UK is one exception, having put forth legislation specific to AVs and commissioning various reports by its law reform bodies.

The situation is still fluid, but indications are that the preference is for the risks and responsibilities concerning potential road traffic accidents to be borne by the manufacturers, rather than the owner or user of AVs.



There are challenges facing the rollout of AVs on Singapore roads, one of which is the lack of clarity if the current legal framework could be applied neatly to AVs, or even at all.

This means that if an accident occurs, there would be minimal impediments placed on individuals in seeking compensation.

Whether manufacturers and insurers wish to dispute liability is a separate matter that should impose no burden on individuals.

In some ways, this approach is akin to what jurisdictions such as New Zealand have taken, even before the advent of AVs. There is a centralised fund administered by a commission. Contributions to this fund are by way of levies, particularly in the form of motor vehicle levies.

If a person is injured in an accident – and it need not be an accident sustained in a road traffic accident – compensation is pretty much guaranteed, as it is a no-fault scheme and acts as the default insurance even if an individual is not personally insured.

The focus is on protecting individuals by ensuring expedient and fuss-free compensation, which is arguably the main factor that ought to guide how AVs ought to be regulated in Singapore.

What can and should also happen in tandem is to minimise the odds of deploying AVs that are unreliable, to begin with.

Rather than leave it to litigants to avail themselves of rights in court should accidents occur, greater emphasis should be placed on pre-deployment regulation and testing for what is a relatively still nascent technology.