National transport Commission

Motor Accident Injury Insurance and Automated Vehicles Discussion Paper

A Submission by

HiAuto…an operation of HiIoT

Human Integrated Internet of Things

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1) About HiAuto

HiAuto is an operational division of HiIoT. We are a start-up ADSE with a vision of teleoperating automated vehicles. Our primary concern is the safety of vehicle occupants and vulnerable road users. We have a “Toward Zero” ethos. Our goal is that the passage on roads shall enhance mobility, sustain pleasurable activities and increase productivity; free from the social and costly toll of deaths and injury. Our competent Remote Operator’s will compliment automated vehicles by performing the dynamic driving tasks within and outside the Operational Design Domain of the Automated Driving System. We will cause the vehicle to achieve a minimal risk condition in edge case scenarios.

2) HiAuto Submission Claim

“An ADS shall be complimented with Teleoperation by a connected/competent human Remote Operator to break barriers concerning compensation under current and future MAII schemes.”

Existing and future MAII schemes are satisfied if a “Remote Driver” is considered “in charge”, “driving”, “the driver”, of the automated vehicle. No person will be worse off, financially or procedurally, if they are injured by a vehicle whose ADS “Remote Driver” complimented technology was engaged, than if they were injured by a vehicle controlled by an occupant human driver.

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Our evidence-based submission will support the "Social Licence" sought from the community regarding their expectation for equitable access to compensation. Safe Teleoperation by a Remote Driver of an automated vehicle shall be an integral clause in the end to end purpose-built national law for automated vehicles.

3) Evidence of Teleoperated Automated Vehicles by Remote drivers to mitigate risk and thus satisfy insurance requirements.

3a) **United Sates – California**

The California Department of Motor Vehicles (DMV) and the Office of Administrative Law approved regulations governing the driverless testing and public use of autonomous vehicles on California roads on February 26, 2018.

In conjunction to the "International approaches to insuring automated vehicles" highlighted in the NTC's Motor Accident Injury Insurance and Automated Vehicles Discussion Paper Clause 1.9.4 Table 2- California.

The California DMV require:

(b) "Autonomous test vehicle" is a vehicle that has been equipped with technology that is a combination of both hardware and software that, when engaged, performs the task, but requires a human test driver or a remote operator to continuously supervise the vehicle's performance of the dynamic driving task.

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3b) **The International Transport Forum** is an intergovernmental organisation with 57-member countries. Australia is member. It acts as a think tank for transport policy and organises the Annual Summit of transport ministers.

The following is an excerpt from the ITF Report:

MANAGING THE TRANSITION TO DRIVERLESS ROAD FREIGHT TRANSPORT — © OECD/ITF 2017

This operating environment considers a hybrid operating model where the trucks do not have hands-on or fall-back drivers within the cabin, but instead the fleet is connected to a pool of experienced remote drivers in a control centre who are able to intervene and remotely control a given vehicle in case of emergency. These remote drivers could be in place as a necessity (level 3 conditional automation) or as risk mitigation for higher levels of automation (level 4 or 5). Figure 2. Stylised driverless truck operating environment (with optional Control Centre).

3c) **Nissan- Seamless Autonomous Mobility (SAM)**

Nissan launched "Seamless Autonomous Mobility (SAM)" system developed with NASA to realize a fully autonomous mobility. It partners in-vehicle artificial intelligence (AI) with remote human support to help driverless autonomous vehicles make decisions in unpredictable situations such as

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obstructions on the road. It also gathers information of all vehicles into the Cloud and build the knowledge of in-vehicle AI. This technology will enable millions of autonomous vehicles to operate safely and smoothly on the road sooner with human support.

3d) **United Sates- FLORIDA MOTOR VEHICLES Chapter 316**

STATE UNIFORM TRAFFIC CONTROL

316.85 Autonomous vehicles; operation. —

(1) A person who possesses a valid driver license may operate an autonomous vehicle in autonomous mode on roads in this state if the vehicle is equipped with autonomous technology, as defined in s. 316.003.

(2) For purposes of this chapter, unless the context otherwise requires, a person shall be deemed to be the operator of an autonomous vehicle operating in autonomous mode when the person causes the vehicle's autonomous technology to engage, regardless of whether the person is physically present in the vehicle while the vehicle is operating in autonomous mode.

History.—s. 3, ch. 2012-111; s. 107, ch. 2012-174; s. 7, ch. 2016-181; s. 12, ch. 2016-239.

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3e) **Phantom Auto**- Teleoperation - An Essential Safety Layer for Autonomous Vehicles

Phantom Auto's teleoperation safety technology enables a remote human operator to drive an autonomous vehicle (AV) when the AV cannot drive autonomously, allowing for the safe testing and deployment of AVs.

Phantom Auto's teleoperation safety solution includes: (1) low latency vehicle communication software, (2) an API for real-time assistance and guidance, and (3) a remote operator service. The technology is vehicle-agnostic, and the company is working with customers in the US and throughout the world with the following vehicle types: passenger vehicles, trucks, shuttles, industrial vehicles, and food delivery vehicles.

HiAuto Key Recommendations

1) Legislate the requirement for Teleoperation by a Competent Remote Operator to be an integral part of an ADS for the safety of the community.
2) Teleoperation by Competent Remote Operator's adds certainty and consistency to the treatment of those injured in a crash under current and proposed MAII schemes.

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Definitions

- MAII - Motor Accident Injury Insurance
- “Remote operator” is a natural person who: possesses the proper class of license for the type of test vehicle being operated; is not seated in the driver’s seat of the vehicle; engages and monitors the autonomous vehicle; is able to communicate with occupants in the vehicle through a communication link. A remote operator may also have the ability to perform the dynamic driving task for the vehicle or cause the vehicle to achieve a minimal risk condition.
- “Dynamic driving task” means all of the real-time functions required to operate a vehicle in on-road traffic, excluding selection of final and intermediate destinations, and including without limitation: object and event detection, recognition, and classification; object and event response; manoeuvre planning; steering, turning, lane keeping, and lane changing, including providing the appropriate signal for the lane change or turn manoeuvre; and acceleration and deceleration.
- “Minimal risk condition” is a low-risk operating condition that an autonomous vehicle automatically resorts to when either the automated driving systems fails or when the human driver fails to respond

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appropriately to a request to take over the dynamic driving task.

- "Operational Design Domain" is the specific operating domain(s) in which an automated function or system is designed to properly operate, including but not limited to geographic area, roadway type, speed range, environmental conditions (weather, daytime/night-time, etc.), and other domain constraints.
- ADS- Automated Driving System
- ADSE- Automated Driving System Entities
- Edge Case- a problem or situation that occurs only at an extreme operating parameter.
- Teleoperation- the electronic remote control of machines
- Social licence- refers to the level of acceptance or approval by local communities and stakeholders of organisations and their operations

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Appendix

- HiIoT- www.hiiot.tech
- California DMV Reference: Regulatory text for driverless testing. Approved February 26, 2018 Express Terms, Article 3.8 – Deployment of Autonomous Vehicles §228.04(a) Article 3.7 – Testing of Autonomous Vehicles. https://www.dmv.ca.gov/portal/wcm/connect/a6ea01e0-072f-4f93-aa6c-e12b844443cc/DriverlessAV_Adopted_Regulatory_Text.pdf?MOD=AJPERES&CVID=
- International transport Forum- https://www.itf-oecd.org/sites/default/files/docs/managing-transition-driverless-road-freight-transport.pdf
- NISSAN SAM- https://www.nissan-global.com/EN/TECHNOLOGY/OVERVIEW/sam.html#prettyPhoto
- Florida Legislation- http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0316/Sections/0316.85.html
- Phantom Auto- https://phantom.auto/

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