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BILL ANALYSIS

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Senate Bill 169 (as enacted) **PUBLIC ACT 231 of 2013**
Senate Bill 663 (as enacted) **PUBLIC ACT 251 of 2013**
Sponsor: Senator Mike Kowall
Senate Committee: Transportation (S.B. 169)
Economic Development (S.B. 663)
House Committee: Commerce

Date Completed: 8-5-14

RATIONALE

Until recently, the Michigan Vehicle Code did not regulate the operation of vehicles with automated technology, including those that can be operated without a human driver, but the Code did allow vehicle manufacturers to obtain special plates in order to test vehicles on public roads. This meant that a company other than a vehicle manufacturer had to rely on obtaining special plates in partnership with a manufacturer. Otherwise, that company was limited to testing on private testing grounds, which are not available to everyone and cannot replicate actual driving conditions. In addition, for companies that were able to test automated motor vehicles in this State, there were no statutory criteria governing the vehicles' operation.

According to industry experts and the Michigan Department of Transportation (MDOT), the testing of automated motor vehicles has been increasing. Nevada, Florida, and California have enacted legislation regulating the testing and use of automated motor vehicles on public roads. It was suggested that Michigan also enact legislation to provide safety and liability standards with regard to automated motor vehicles, in order to accommodate this industry and encourage its growth within the State.

CONTENT

Senate Bill 169 amended the Michigan Vehicle Code to do the following:

- **Require a manufacturer of automated technology to meet certain conditions in order to test an automated vehicle, or automated technology installed in a vehicle, on a street or highway.**
- **Prohibit a person from operating an automated motor vehicle upon a highway or street in automatic mode except as provided in the bill.**
- **Make it a civil infraction to violate the automated vehicle or technology provisions.**
- **Provide a manufacturer of automated technology with civil immunity for damages that arise out of another person's modification of a vehicle, an automated vehicle, or automated technology.**
- **Exempt the operator of an automated motor vehicle from prohibitions against using two-way communications devices while operating a motor vehicle.**
- **Require the Michigan Department of Transportation, by February 1, 2016, to recommend to the Legislature legislative or regulatory action for the safe testing of automated motor vehicles and automated technology installed in vehicles.**

Senate Bill 663 amended the Revised Judicature Act to do the following:

-- **Provide that a vehicle manufacturer is not liable for damages resulting from another person's modification of a vehicle or equipment to convert the vehicle into an automated motor vehicle.**
-- **Provide that a subcomponent system producer is not liable in a product liability action for damages resulting from the modification of equipment installed by the producer.**
-- **Retain liability if the defect causing the damages was present when the vehicle was manufactured or the equipment was installed, as applicable.**
-- **Provide that certain sections of the Act concerning product liability actions do not apply to the extent that they are inconsistent with the bill.**

Senate Bill 169 took effect on March 27, 2014, and Senate Bill 663 took effect on December 27, 2013.

Senate Bill 169

New Definitions

The bill added the following definitions to the Michigan Vehicle Code.

"Automated motor vehicle" means a motor vehicle on which automated technology has been installed, by either a manufacturer of automated technology or an upfitter that enables the vehicle to be operated without any control or monitoring by a human operator. The term does not include a motor vehicle enabled with one or more active safety systems or operator assistance systems, including a system to provide electronic blind spot assistance, crash avoidance, emergency braking, parking assistance, adaptive cruise control, lane-keeping assistance, lane departure warning, or traffic jam and queuing assistance, unless one or more of these technologies alone or in combination with other systems enable the vehicle on which the technology is installed to operate without any control or monitoring by an operator.

"Automated technology" means technology installed on a motor vehicle that has the capability to assist, make decisions for, or replace an operator.

"Automatic mode" means the mode of operating an automated motor vehicle when automated technology is engaged to enable the vehicle to operate without any control or monitoring by an operator.

"Manufacturer of automated technology" means a manufacturer or subcomponent system producer recognized by the Secretary of State that develops or produces automated technology or automated vehicles.

"Upfitter" means a person that modifies a motor vehicle after it was manufactured by installing automated technology in the vehicle to convert it to an automated vehicle. The term includes a subcomponent system producer recognized by the Secretary of State that develops or produces automated technology.

"Operate" & "Operator"

The bill amended the Code's definitions of "operate", "operating", and "operator".

As previously defined, "operate" or "operating" means being in actual physical control of a vehicle regardless of whether the person is licensed as an operator or chauffeur. Under the bill the term also means causing an automated motor vehicle to move under its own power in automatic mode upon a highway or street regardless of whether the person is physically present in the vehicle at that time, and regardless of whether the person is licensed as an operator or chauffeur. "Causing an automated motor vehicle to move under its own power in automatic mode" includes engaging the automated technology of the automated motor vehicle for that purpose.

The Code previously defined "operator" as a person, other than a chauffeur, who was in actual physical control of a motor vehicle upon a highway. The bill defines this term as a person, other than a chauffeur, who either: 1) operates a motor vehicle upon a highway or street, or 2) operates an automated motor vehicle upon a highway or street.

Operating or Moving Automated Vehicle by Manufacturer

The Code allows a producer of a vehicle subcomponent system essential to the operation of the vehicle or the safety of an occupant to operate or move a motor vehicle upon a street or highway solely to transport or test the subcomponent system, if the vehicle displays a special plate approved by the Secretary of State. The subcomponent system producer must be either a recognized subcomponent system producer or a subcomponent system producer under contract with a vehicle manufacturer.

The bill also permits a manufacturer of automated technology to operate or otherwise move an automated motor vehicle upon a highway or street, if the vehicle displays a special plate approved by the Secretary of State and meets the requirements in Section 665. (As described below, the bill added that section to the Code to prescribe requirements for testing an automated vehicle or automated technology on a highway or street.)

Operating Requirements

The bill added a division to the Michigan Vehicle Code called "Automated Vehicles", which contains the following provisions (including Section 665).

Except as otherwise provided in Section 665, the bill prohibits a person from operating an automated motor vehicle on a highway or street in automatic mode.

Under Section 665, before beginning research or testing of an automated motor vehicle or any automated technology installed in a motor vehicle under the section, the manufacturer of automated technology performing the research or testing must submit proof to the Secretary of State that the vehicle is insured under Chapter 31 (no-fault coverage) of the Insurance Code. Section 665 also requires the manufacturer of automated technology to ensure that all of the following circumstances exist when researching or testing the operation of an automated motor vehicle or any automated technology installed in a motor vehicle on a highway or street:

-- The vehicle is operated only by an employee, contractor, or other person designated or otherwise authorized by that manufacturer.
-- An individual is present in the vehicle while it is being operated on a highway or street and that individual has the ability to monitor the vehicle's performance and, if necessary, immediately take control of the vehicle's movements.
-- The individual operating the vehicle and the individual who is present in it both are licensed to operate a motor vehicle in the United States.

Penalties

A person who violates the Automated Vehicles division will be responsible for a civil infraction and may be fined as provided in Section 907. (As a rule, under that section, a person who is determined to be responsible or responsible "with explanation" for a civil infraction may be ordered to pay a maximum civil fine of $100, or a maximum civil fine of $250 if the violator was driving a commercial motor vehicle. The payment of costs and a justice system assessment also may be required.)

The bill specifies that the division does not prohibit a person from being charged with, convicted of, punished, found responsible, or ordered to pay a fine or costs for any other violation of law arising out of the same transaction as a violation of the division.

Manufacturer Immunity

The bill provides that a manufacturer of automated technology is immune from civil liability for damages arising out of any modification made by another person to a motor vehicle or an automated motor vehicle, or to any automated technology, as provided in Section 2949b of the Revised Judicature Act. (Senate Bill 663 added that section to the Act.)

Communication Device Restrictions: Exception for Automated Vehicles

The Vehicle Code generally prohibits a person from reading, typing, or sending text messages while operating a motor vehicle, or using a mobile telephone for voice communication while operating a commercial motor vehicle or a school bus. Under the bill, the prohibitions do not apply to operating or programming the operation of an automated motor vehicle while testing it in compliance with Section 665, if the vehicle displays a special plate in the manner required by the Code.

Report to the Legislature

Under the bill, by February 1, 2016, the Michigan Department of Transportation, in consultation with the Secretary of State and experts from various sizes of the automobile manufacturing and automated technology manufacturing industries, must submit a report to the Senate standing committees on transportation and economic development and to the House of Representatives standing committees on transportation and commerce. The report must recommend any additional legislative or regulatory action that may be necessary for the continued safe testing of automated motor vehicles and automated technology installed in motor vehicles.

Senate Bill 663

The bill added Section 2949b to the Revised Judicature Act to provide that the manufacturer of a vehicle is not liable and must be dismissed from any action for alleged damages resulting from any of the following, unless the defect from which the damages resulted was present in the vehicle when it was manufactured:

-- The conversion or attempted conversion of the vehicle into an automated motor vehicle by another person.
-- The installation of equipment in the vehicle by another person to convert it into an automated motor vehicle.
-- The modification by another person of equipment that was installed by the manufacturer in an automated motor vehicle specifically for using it in automatic mode.

"Automated motor vehicle" and "automatic mode" mean those terms as defined in Section 2b of the Michigan Vehicle Code (added by Senate Bill 169).

Section 2949b also provides that a subcomponent system producer recognized as described in Section 244 of the Vehicle Code is not liable in a product liability action for damages resulting from the modification of equipment installed by that producer to convert a vehicle to an automated motor vehicle, unless the defect from which the damages resulted was present in the equipment when it was installed by the producer.

(Section 244 of the Vehicle Code contains the provisions allowing a producer of a vehicle subcomponent system and a manufacturer of automated technology to operate or move a vehicle or an automated motor vehicle upon a street or highway if the vehicle displays a special plate approved by the Secretary of State.)

The bill specifies that Sections 2945 to 2949a of the Act do not apply in a product liability action to the extent that they are inconsistent with Section 2949b. (Those sections pertain to the following with regard to a product liability action:

-- Admissible evidence.

-- Determination and limitation of damages.
-- Circumstances under which a manufacturer or seller is not liable, such as when the alteration or misuse of a product causes harm and was not reasonably foreseeable.
-- Warning of the risk of injury, death, or damage connected with the foreseeable use of a product.
-- A defendant's willful disregard of knowledge that a product was defective at the time of manufacture or distribution.)

MCL 257.2b et al. (S.B. 169)
600.2949b (S.B. 663)

ARGUMENTS

(Please note: The arguments contained in this analysis originate from sources outside the Senate Fiscal Agency. The Senate Fiscal Agency neither supports nor opposes legislation.)

Supporting Argument

Driverless cars could create $2.0 trillion a year in revenue for the United States, according to articles posted on Forbes.com in January 2013.[1] To take advantage of this, Michigan needs to become a competitive participant in the development of automated motor vehicle technology. Since several other states already enacted legislation regulating the testing and use of automated motor vehicles on public roads, suppliers and manufacturers were going to California, Florida, or Nevada for these purposes. This was costly both for the manufacturers and suppliers (with an estimated price of $124,000 per vehicle sent for testing) and for this State, which was losing out on a rapidly growing and potentially lucrative industry.

With the State's established automobile and auto parts manufacturers, higher education institutions, research and development firms, and skilled workforce, Michigan has the assets needed to become a global leader in automated vehicle technology. The State's diverse terrain and weather also make this an ideal location to test the automated systems. By enacting the necessary statutory authority, criteria, and liability protections, the bills will put Michigan at the forefront of the industry, send a signal that this is a tech-friendly State, spur innovation, attract out-of-State business, and reduce the Michigan "brain drain.

Small businesses dedicated to automated technology are attracted to Michigan because of the close proximity to domestic automobile manufacturers. Although automated cars already were being designed and developed in Michigan, only large manufacturers had access to special plates or owned private testing tracks in Michigan, which discouraged or prevented small or nontraditional companies from testing automated technology locally. Although simulations are a good method of testing, they lack the variations that real road conditions present. The bills now provide the opportunity for both small and large firms to gather data and move forward with automated vehicle technology.

In addition, the military is a large consumer of automated technology. Michigan is home to TARDEC, the U.S. Army Tank Automotive Research, Development, and Engineering Center. The U.S. Department of Defense has been directed to convert one-third of the combat vehicle fleet to unmanned vehicles by 2015[2], and TARDEC is leading the research and development effort. Also, a Michigan-based research and development company, Cybernet Systems Corporation, engineers technological solutions to challenges in the defense industry. According to a representative of Cybernet, the company has $5.0 million to $6.0 million in federally funded autonomous vehicle

[1] "Fasten Your Seatbelts: Google's Driverless Car Is Worth Trillions (Part 1)", Forbes.com, 1-22-2013, retrieved 3-6-2013 at: www.forbes.com/sites/chunkamui/2013/01/22/fasten-your-seatbelts-googles-driverless-car-is-worth-trillions/ The $2 trillion figure consists of "$450 billion related to car crashes, $600 billion of car sales, $200 billion in auto-insurance premiums, [and] the hundreds of billions of dollars of health-insurance that plausibly relate to car accidents". "Google's Trillion-Dollar Driverless Car – Part 2: The Ripple Effects", Forbes.com, 1-24-2013, retrieved 3-6-2013 at: www.forbes.com/sites/chunkamui/2013/01/24/googles-trillion-dollar-driverless-car-part-2-the-ripple-effects/2/

[2] National Defense Authorization Act of 2001, Public Law 106-398, Sec. 220

research. By permitting automated motor vehicles to be tested on Michigan roads, the bills may prevent these projects and funds from being sent out of the State.

Furthermore, the legislation will result in no additional infrastructure costs, according to a representative of the National Center for Manufacturing Sciences. Automated technology has adapted to the current system and infrastructure of roads, and generally employs technology like sign reading, shape recognition, and on-board sensors.

Finally, the bills will promote public safety by establishing standards to protect the public from harm while still allowing for development of automated technology. The criteria for operating an automated motor vehicle will ensure that any company testing automated technology in this State does so in a responsible manner and with limited risk to itself and those around the vehicle.

Response: Michigan and other states have an important role in the development of automated vehicle technology. A patchwork of varying, and possibly conflicting, regulations could create an environment of uncertainty for manufacturers, however. An earlier version of Senate Bill 169 provided that Federal regulations, if promulgated, would supersede the bill in the event of a conflict. The enacted legislation does not include this language.

Supporting Argument

The automated technology that is being developed goes well beyond the "driver-assist" features that many vehicles already employ, such as lane centering, emergency braking, and blind spot assistance. The existing features either assist the driver, who remains in control of the vehicle, or require some engagement or monitoring by the driver. Fully automated (or autonomous) vehicles, on the other hand, can drive themselves. While self-driving automobiles are being developed and tested, there will continue to be varying degrees of driver involvement, as the technology evolves and the public becomes comfortable with it.

With many stages between partial and full automation, there is a range of potential benefits. The freight industry, for example, could achieve greater fuel efficiency and safety, as well as more effective delivery systems. For all motorists, increased automation could reduce accidents, leading to fewer injuries and fatalities and less property damage, and therefore lower insurance rates, medical expenses, and loss of productivity. At the self-driving level, the technology could increase the mobility and independence of blind individuals and others who have conditions that make them unable to drive.

In order for these benefits to be realized, it is necessary for the technology to be developed and tested in real driving conditions. By allowing this to occur, bills will help make the potential opportunities an actuality.

Supporting Argument

Senate Bill 663 will encourage the development of automated vehicles in Michigan by protecting vehicle manufacturers from civil liability for damages caused by the modification of a vehicle by another person, and protecting subcomponent system producers from product liability for damages caused by the modification of equipment installed by the producers. The manufacturer or producer will remain liable, however, if the defect causing the damages was present when the vehicle was manufactured or the equipment was installed.

Supporting Argument

This legislation will enhance efforts already under way in Michigan to develop vehicles that are connected (communicate with each other) and automated. These efforts include a project at the University of Michigan's Mobility Transformation Center (MTC). The goal of the MTC, in partnership with government and industry, is to lay the foundations of a commercially viable system of connected and automated vehicles.[3] The plans call for the demonstration of a working system in Ann Arbor by 2021.

[3] "Industry leaders join U-M mobility transformation initiative", 5-6-2014, retrieved 8-4-2014 at: http://www.mtc.umich.edu/vision/news-events/industry-leaders-join-u-m-mobiilty-transformation-initiative

In May 2014, construction started on a simulated urban environment for testing advances in connected and automated mobility systems, located on 32 acres of the university's campus. The MTC also is developing three complementary on-road vehicle deployments of up to 20,000 vehicles across southeastern Michigan. These will serve as test beds to evaluate consumer behavior and explore marketing opportunities. According to the MTC director, "Connected and automated vehicles provide a new platform for safety improvements, better traffic movement, emissions reduction, energy conservation and maximized transportation accessibility".[4]

Opposing Argument

Senate Bill 169 gives the Secretary of State the discretion to determine if a business qualifies as a subcomponent system producer, including an upfitter. Secretary of State employees are not technology experts, however, and this may lead to inconsistent determinations.

Response: The Secretary of State and MDOT will work together on these determinations. The Department may provide details on legitimate uses of the special plates that may be issued to a manufacturer of automated technology.

Opposing Argument

Under Senate Bill 169, a person will be considered to be operating an automated motor vehicle when he or she causes its automated technology to engage, regardless of whether the person is physically present in the vehicle. While the person engaging the automated technology also might be the driver, it is possible that the driver will be a different individual. Whether or not the individual in the driver seat engages the technology, it will be that person's responsibility to take over and prevent a crash if there is a problem. Therefore, the person in the driver seat, as well as the person who engages the technology, always should be responsible as an operator.

Legislative Analyst: Suzanne Lowe

FISCAL IMPACT

Senate Bill 169

The bill should have no fiscal impact on either the Department of State or the Department of Transportation. Any costs to the Secretary of State or the Department of Transportation for reporting to the Legislature should be absorbed within the respective Department's annual budget.

The new civil infraction will have a minor, likely negligible, fiscal impact on State and local government. Violators of the new regulations may be fined up to $100 (or up to $250 if a commercial motor vehicle was being driven), as well as required to pay court costs of up to $100 and a justice system assessment of $40. Civil fine revenue under the Michigan Vehicle Code benefits public libraries, although 70% is allocated to the local authority if an infraction involves the operation of a commercial motor vehicle.

Senate Bill 663

The bill will have no fiscal impact on State or local government.

Fiscal Analyst: Joe Carrasco
John Maxwell

[4] "U-M plays integral role in connected vehicle research", 2-3-2014, retrieved 8-4-2014 at: http//www.mtc.umich.edu/vision/news-events/u-m-plays-integral-role-connected-vehicle-research