

GOVERNOR DOUGLAS A. DUCEY

STATE OF ARIZONA

EXECUTIVE ORDER

Executive Order 2018-04

Advancing Autonomous Vehicle Testing and Operating; Prioritizing Public Safety

WHEREAS, Arizona has shown leadership in supporting technology innovations that improve safety and mobility on Arizona roads;

WHEREAS, the business friendly and low regulatory environment has led to increased investment and economic development throughout the state;

WHEREAS, the economic growth has been recognized by numerous national publications, including the New York Times that identified Arizona's growth as a "tech boom;"

WHEREAS, the safety and increased mobility of all citizens is of the utmost concern to the State;

WHEREAS, a recent report from the National Highway Traffic Safety Administration revealed that 94% of crashes can be tied back to either human error or bad decisions;

WHEREAS, according to the National Highway Traffic Safety Administration 37,461 people lost their lives in traffic crashes in 2016 a 5.6% increase in deaths from 2015;

WHEREAS, those deaths represent the equivalent of one medium-size commercial airliner crashing once a day, Monday through Friday, every week of the year;

WHEREAS, the state of Arizona experienced 962 fatalities in 2016, which represents a 7.3% increase over 2015, and the State strongly believes that is not acceptable for Arizona;

WHEREAS, multiple stakeholders including the National Safety Council, the Foundation for Senior Living, Mothers Against Drunk Driving, and the Foundation for Blind Children recognize the transformational social and safety benefits that self-driving and fully autonomous vehicles provide;

WHEREAS, the State has become a hub for driverless car research and development with over 600 vehicles with automated driving systems, that have been testing on Arizona public roads for more than two years;

WHEREAS, the State believes that the implementation of fully autonomous vehicles will provide a dramatic increase in pedestrian and passenger safety, reduce traffic and congestion, and improve the movement of residents and commerce across the state; and

WHEREAS, the State requires that any entity that is testing or operating vehicles equipped with an automated driving system will be in full compliance with all the applicable traffic and motor vehicle safety, insurance, accident reporting, and titling and registration laws and regulations of both the Federal Government and the State of Arizona, and that violations will lead to suspension and/or revocation of the permission to test or operate on public roads.

NOW, THEREFORE, I, Douglas A. Ducey, Governor of the State of Arizona, by virtue of the authority vested in me by the Constitution and laws of the State of Arizona, hereby order as follows:

- 1) As used in this order, the following terms have the meanings ascribed below:
 - a. **AUTOMATED DRIVING SYSTEM.** The hardware and software that are collectively capable of performing the entire dynamic driving task on a sustained basis, regardless of whether it is limited to a specific operational design domain.
 - b. **DRIVE.** Shall have the meaning ascribed to it in §28-101(21) of the Arizona Revised Statutes.

- c. **DYNAMIC DRIVING TASK.** All of the real-time operational and tactical functions required to operate a vehicle in on-road traffic, excluding the strategic functions such as trip scheduling and selection of destinations and waypoints, and including without limitation:
 - i. Lateral vehicle motion control via steering;
 - ii. Longitudinal motion control via acceleration and deceleration;
 - iii. Monitoring the driving environment via object and event detection, recognition, classification, and response preparation;
 - iv. Object and event response execution;
 - v. Maneuver planning; and
 - vi. Enhancing conspicuity via lighting, signaling, and gesturing.
 - d. **FULLY AUTONOMOUS VEHICLE.** A motor vehicle that is equipped with an automated driving system designed to function as a level four or five system under SAE J3016. Such a vehicle may be designed to function solely by use of the automated driving system, or when the automated driving system is not engaged, to permit operation by a human person.
 - e. **MINIMAL RISK CONDITION.** A low-risk operating mode in which a fully autonomous vehicle operating without a human person achieves a reasonably safe state, such as bringing the vehicle to a complete stop, upon experiencing a failure of the vehicle's automated driving system that renders the vehicle unable to perform the entire dynamic driving task.
 - f. **OPERATIONAL DESIGN DOMAIN.** A description of the specific operating domain(s) in which an automated driving system is designed to properly operate, including but not limited to roadway types, speed range, environmental conditions (weather, daytime/nighttime, etc.), and other domain constraints.
 - g. **PERSON.** Shall have the meaning ascribed to it in §1-215(28) of the Arizona Revised Statutes.
 - h. **SAE J3016.** The *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles* published by SAE International in September 2016.
- 2) Testing or operation of self-driving vehicles equipped with an automated driving system on public roads with, or without, a person present in the vehicle are required to follow all federal laws, Arizona State Statutes, Title 28 of the Arizona Revised Statutes, all regulations and policies set forth by the Arizona Department of Transportation, and this Order.
- 3) Testing or operation of vehicles on public roads that do not have a person present in the vehicle shall be allowed only if such vehicles are fully autonomous, provided that a person prior to commencing testing or operation of fully autonomous vehicles, has submitted a written statement to the Arizona Department of Transportation, or if already begun, has submitted a statement to the Arizona Department of Transportation within 60 days of the issuance of this Order acknowledging that:
- a. Unless an exemption or waiver has been granted by the National Highway Traffic Safety Administration, the fully autonomous vehicle is equipped with an automated driving system that is in compliance with all applicable federal law and federal motor vehicle safety standards and bears the required certification label(s) including reference to any exemption granted under applicable federal law;
 - b. If a failure of the automated driving system occurs that renders that system unable to perform the entire dynamic driving task relevant to its intended operational design domain, the fully autonomous vehicle will achieve a minimal risk condition;
 - c. The fully autonomous vehicle is capable of complying with all applicable traffic and motor vehicle safety laws and regulations of the State of Arizona, and the person testing or operating the fully autonomous vehicle may be issued a traffic citation or other applicable penalty in the event the vehicle fails to comply with traffic and/or motor vehicle laws; and
 - d. The fully autonomous vehicle meets all applicable certificate, title registration, licensing and insurance requirements.
- 4) If a person fails to submit the required statement outlined in Section 3 of the Order, the Director of Arizona Department of Transportation has the authority to immediately issue a cease and desist letter revoking any permissions to operate a fully autonomous vehicle on Arizona's public roads, until the person has submitted the statement and is in compliance with laws and regulations relating to fully autonomous vehicles.
- 5) The automated driving system of a fully autonomous vehicle and the person required to submit a statement to the Arizona Department of Transportation Under Section 3 of this order shall be subject to all applicable laws, rules, ordinances, and

statutes, and will be considered to be licensed to operate the vehicle for the purposes of Title 28 of the Arizona Revised Statutes.

- 6) The Arizona Department of Transportation, the Arizona Department of Public Safety, and all other agencies of the State of Arizona with pertinent regulatory jurisdiction shall take the necessary steps to support the testing and operation of fully autonomous vehicles on public roads within Arizona. These actions shall include:
- a. The Arizona Department of Public Safety, in coordination with other relevant law enforcement agencies, shall issue a law enforcement interaction protocol addressing fully autonomous vehicles. The protocol shall include, but is not limited to, information educating relevant law enforcement agencies and other first responders on how to interact with fully autonomous vehicles in emergency and traffic enforcement situations, contact information for insurance and citation purposes, and any other information needed to ensure the safe operation of fully autonomous vehicles in Arizona.
 - i. Each person conducting testing or operation of fully autonomous vehicles on the public roads of Arizona shall work with the Arizona Department of Public Safety to assist in the development of the protocol. The agreed upon protocol shall address how fully autonomous vehicles behave in the event of an accident and in accordance with the applicable requirements in Chapter 3 Article 4 of Title 28 of the Arizona Revised Statutes.
 - ii. A person that has already begun testing or operation of fully autonomous vehicles shall submit to the Arizona Department of Public Safety a statement acknowledging that such a person has implemented a plan consistent with the protocol within 60 days of its issuance.
 - iii. Any person that begins testing or operations after that 60 day period shall submit to the Arizona Department of Public Safety a statement acknowledging that it meets the protocol prior to such testing or operation.
 - b. Prior to issuance of the law enforcement interaction protocol, testing or operation of fully autonomous vehicles, with or without a person, may be conducted on the public roads of Arizona, consistent with the provisions of this Order.
 - c. The Arizona Department of Transportation and Arizona Department of Public Safety shall complete a review and provide a report of relevant regulations describing which provisions may no longer be necessary for, are inapplicable to, or should be updated, with regard to their application to fully autonomous vehicles, consistent with this Order.
 - d. The Arizona Department of Transportation shall undertake a review of current title and registration policies and procedures and make recommendations to ensure law enforcement and the general public has the necessary pertinent vehicle information in the event of a collision with a fully autonomous vehicle.
- 7) Nothing in this order establishes a right to operate an autonomous vehicle in Arizona or obtain or possess approval, permissions, license, certification or registration related to autonomous vehicles.

IN WITNESS THEREOF, I have hereunto set my hand caused to be affixed the Great Seal of the State of Arizona.

Douglas A. Ducey
GOVERNOR

DONE at the Capitol in Phoenix on this First day of March in the Year Two Thousand and Eighteen and of the Independence of the United States of America the Two Hundred and Thirty-Sixth.

ATTEST:

Michelle Reagan

Secretary of State

