Expanding Exemptions to Enable More Public Trust (EXEMPT) Act (HR 3408, 115th Congress)

Proposes new exemptions for motor vehicle safety standards relating to highly automated vehicles.

Updated last May 31, 2018 for the 07/26/2017 version of HR 3408.

WHAT IT DOES

HR 3408, the Expanding Exemptions to Enable More Public Trust Act ("EXEMPT Act"), introduced by Rep. Leonard Lance to Congress on July 26, 2017, proposes expanding certain exemptions relating to the use and development of highly automated vehicles. The bill would also set forth definitions for “automated driving system[s]” (ADS) and provide a process for revising these definitions in the event that industry leaders, such as SAE International, update ADS terminology. This bill is also one of 14 bills regarding ADS that have been under review by the House Energy and Commerce Committee.

49 U.S.C 30113 would be amended under this bill. Currently, it allows the Secretary of Transportation to exempt motor vehicles, on a temporary basis, from vehicle safety standards prescribed under the same chapter. Subsection (b)(3)(B), "Authority to Exempt and Procedures", would expand to include an exemption that would make the development and field evaluation of highly automated vehicles and their features easier, so long as they are at least as safe as nonexempt vehicles. Further, subsection (c) "Contents of Applications", which sets out the filing requirements for manufacturers seeking exemptions under the statute, would be amended to provide for applications regarding highly automated vehicles.

The bill would also amend subsection (a), “General Definitions”, of 49 U.S.C. 30102 to insert multiple definitions relating to automated vehicles and their features and operations:

- Automated Driving System: hardware and software that are collectively capable of performing dynamic driving tasks on a sustained basis, regardless of whether such system is limited to a specific context.
- Dynamic Driving Task: 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:
  - Lateral vehicle motion control – steering to change lanes and avoid obstacles;
  - Longitudinal vehicle motion control – accelerating and decelerating to maintain a safe distance between vehicles;
  - Driving environment monitoring – via object and event detection, recognition, classification, response preparation, and response execution;
  - Maneuver planning; and
  - Enhancing vehicle and road object conspicuity – via intelligent lighting, signaling, and gesturing systems.
- Highly Automated Vehicle: a motor vehicle equipped with an automated driving system not including commercial motor vehicles (as defined in section 31102).
- Operational Design Domain: the specific conditions under which a given driving automation system or feature is designed to function.

In final section of this bill, "Revisions to Certain Definitions", grants that if SAE International, or its industry successor, were to revise any of the above definitions (contained in "Recommended Practice Report J3016"), that organization must inform the Department of Transportation to publish in the Federal Register for comment prior to updating any regulations dependent on these definitions.
Highly automated vehicles are cars that use advanced technology to sense their surroundings to operate on public streets with varying levels of human involvement. These technologies include cameras, radars, and light detectors that enable these vehicles to perceive other vehicles, obstacles, and traffic signs.

Fully autonomous vehicles are equipped with SAE Level 5 automation systems, where the vehicle can perform all operating functions with no human input; vehicles can drive themselves from a starting point to an ending point independently (Science Module available: Levels of Vehicle Automation).

Fully autonomous operation requires the effective integration of multiple technologies:

- **Sensors** are used to create and maintain a perception of objects within a vehicle's surroundings. Most current autonomous vehicles are equipped with different combinations of four main types of technology, including cameras, RADAR, LIDAR, and ultrasonic sensors (Science Module available: Sensors for Automated Vehicles).
- **Global Positioning Systems** (GPS) are used to collect vehicular location data. GPS determine the present location of the vehicle by analyzing signals received from satellites.
- **Inertial Measurement Units** (IMU) are used to collect vehicular motion and rotation data. Such systems supplement GPS in instances where satellite data is unavailable; they cannot determine absolute vehicular position, but can determine the location of a vehicle relative to its starting point (Science Module available: Autonomous Vehicle Data Generation and Sharing).
- Processors and software function as the brain of the car, performing large-scale data processing to interpret sensor data in real time and make autonomous decisions accordingly. These systems use machine learning algorithms to detect patterns in the data they receive from sensors and GPS. These systems then make various decisions based on that data, such as identifying and following traffic signs and markings (Science Module available: Advanced Driver Assistance Systems (ADAS)).

In contrast, semi-autonomous vehicles require a driver to perform some driving operations, depending on level of vehicle autonomy. Semi-autonomous vehicles may possess a limited number of these features or allow such features to be disabled (Science Module available: Human Machine Interface (HMI) Issues for Autonomous Vehicles).

**BACKGROUND**

In 2016, 37,461 people died due to motor vehicle related accidents in the US alone. Possibly 94 percent of crashes are a result of human errors. Automated vehicles may present serious safety improvements over human operated vehicles. The National Highway Traffic and Safety Administration (NHTSA) has explained other benefits including:

- **Safety:** Removing human error entirely would significantly reduce the danger associated with motor vehicles, but more minor features (such as forward collision warning, automatic emergency braking, or adaptive lighting) may increase safety as well.
- **Economic:** Vehicle crashes in 2010 cost $242 billion in lost of workforce productivity, in addition to $594 billion due to loss of life and costs related to decreased quality of life.
- **Efficiency:** Americans spent an estimated 6.9 billion hours in traffic delays in 2014. More cooperative automated vehicles could help reduce traffic congestion resulting in fewer costs in time, fuel, and productivity associated with this time spent on the road.
- **Mobility:** Related statutes mentioned below touch upon the problem of disabled and underserved populations lacking practical transit options. Automated vehicles could mitigate much of the isolation and suffering by providing transportation to those unable to operate a vehicle.

The regulation of automated vehicles implicates ethics, business, and the law. Automated vehicles will, at least initially, share the roads with other human drivers in regular vehicles and other obstacles. Unforeseen crises may force the automated systems to choose between risky alternatives, where in some cases, no clear ethical choice will be available. Businesses like the shipping industry, car manufacturing industry, and a myriad of other industries will be affected by automated vehicle’s displacement of workers. Finally, the legal and regulatory regime will need to catch up to the introduction of automated vehicles. Many bills currently
in Congress, including this one, are nonetheless seeing bipartisan support.

ENDORSEMENTS & OPPOSITION

At present, there have not been any publicly reported endorsements of or opposition to this bill.

STATUS

HR 3408 was introduced in the House on July 26, 2017, and referred to the Committee on Energy and Commerce by the House of Representatives. On July 28, 2017, the bill was referred to the Subcommittee on Digital Commerce and Consumer Protection.

RELATED POLICIES

**HR 3406 – The Practical Automated Vehicle Exemptions (“PAVE”) Act**: A bill that increases the number of FMVSS (“Federal Motor Vehicle Safety Standards”) exemptions that may be granted: an increase from 2,500 to 100,000. Only vehicles meeting adequate safety standards will be subject to the increases.


**HR 3414**: A bill that would create a “Disability Mobility Advisory Council” to research and recommend ways that mobility for disabled persons can be increased.

**HR 3413**: A bill that will create a council to provide recommendations on how to increase mobility for the elderly and those who may not be able to access traditional forms of transportation.

**S 1885 – AV START Act**: Supports the development of autonomous vehicle technologies (SciPol brief available).

**The GUARD (Guarding Automakers Against Unfair Advantages) Act**: A bill that purports to prevent leaks of proprietary information provided by manufacturers to the Government. Information regarding testing, safety, and other features may be protected, to encourage development of automated vehicles.

**HR 3388 – SELF DRIVE (Safely Ensuring Lives Future Deployment and Research In Vehicle Evolution) Act**: A bill that requires the Department of Transportation to “complete research to determine the most cost effective method and terminology for informing consumers about the capabilities and limitations of [automated vehicles].”

This collection of bills and more analysis on related legislature may be found here.

SPONSORS

Sponsor: [Representative Leonard Lance](https://www.house.gov/leonard-lance) (R-NJ-7)

Cosponsor: [Representative Debbie Dingell](https://www.house.gov/debbie-dingell) (D-MI-12)