

## FRAV Document 5 Development Question 1

### ODD preamble

The ODD chapter of Document 5 (FRAV-02-05-Rev.2) begins with the following preamble:

This chapter concerns the description of a vehicle's Operational Design Domain (ODD). The ODD describes the specific conditions under which the automated vehicle is intended to operate in automated mode. For the assessment of vehicle safety, the vehicle manufacturer should document the ODD of the vehicle and the functionality of the vehicle within the prescribed ODD.

This text was based upon the WP.29 AV Framework Document (see references below). This paragraph states that the ODD applies to the vehicle. All the vehicle capabilities would fall within a single vehicle-level ODD as declared by the manufacturer.

However, the SAE definition of ODD applies to the driving automation system or feature thereof. Moreover, the NHTSA "Testable Cases" research introduced during FRAV-01 states that the ODD "will likely vary for each ADS feature on a vehicle". The NHTSA rationale was that the ODD of a "valet parking" feature would differ from a "highway drive" feature or a "traffic jam drive" feature.

**Please provide views on the preamble. Is the preamble (and Framework Document) accurate that the ODD description applies to the vehicle as a whole and that a vehicle would necessarily have one—and only one—ODD? If not, is there a more precise and accurate way to describe the general requirement that a manufacturer should document the ODD?**

### References

#### Framework Document

Operational Design Domain (ODD): For the assessment of the vehicle safety, the vehicle manufacturers should document the ODD available on their vehicles and the functionality of the vehicle within the prescribed ODD. The ODD should describe the specific conditions under which the automated vehicle is intended to drive in automated mode. The ODD should include the following information at a minimum: roadway types, geographic area, speed range, environmental conditions (weather as well as day/night), and other domain constraints.

#### SAE J3016:2018

Operational Design Domain (ODD): Operating conditions under which a given driving automation system or feature thereof is specifically designed to function, including, but not limited to, environmental, geographical, and time-of-day restrictions, and/or the requisite presence or absence of certain traffic or roadway characteristics.

#### NHTSA "A Framework for Automated Driving System Testable Cases and Scenarios"

The ODD describes the specific operating domains in which the ADS is designed to function. The ODD will likely vary for each ADS feature on a vehicle and specifies the condition in which that feature is intended and able to operate with respect to roadway types, speed range, lighting conditions, weather conditions, and other operational constraints. The ODD is specified by the technology developer, and the ADS should be able to identify whether it is operating within or outside of that ODD.