

Submitted by the experts from CATARC

Document FRAV-02-09
2nd FRAV session, 14-15 January 2020
Agenda item 6.5.

China's proposal on using the term 'ODC'

Document FRAV-02-05

1.4 “Operational design domain” refers to the 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. The operational design domain is a subset of the operational domain. (Definition from SAE J3016:2016)

3. Operational Design Domain (ODD)

3.1 The vehicle manufacturer shall define the operational design domain of the vehicle, including (at a minimum):

- 3.1.1 Roadway types
- 3.1.2 Geographic area
- 3.1.3 Speed range
- 3.1.4 Environmental conditions

3.2 The vehicle manufacturer shall identify the conditions defined for the vehicle’s operational domain that fall outside the vehicle’s operational design domain.

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

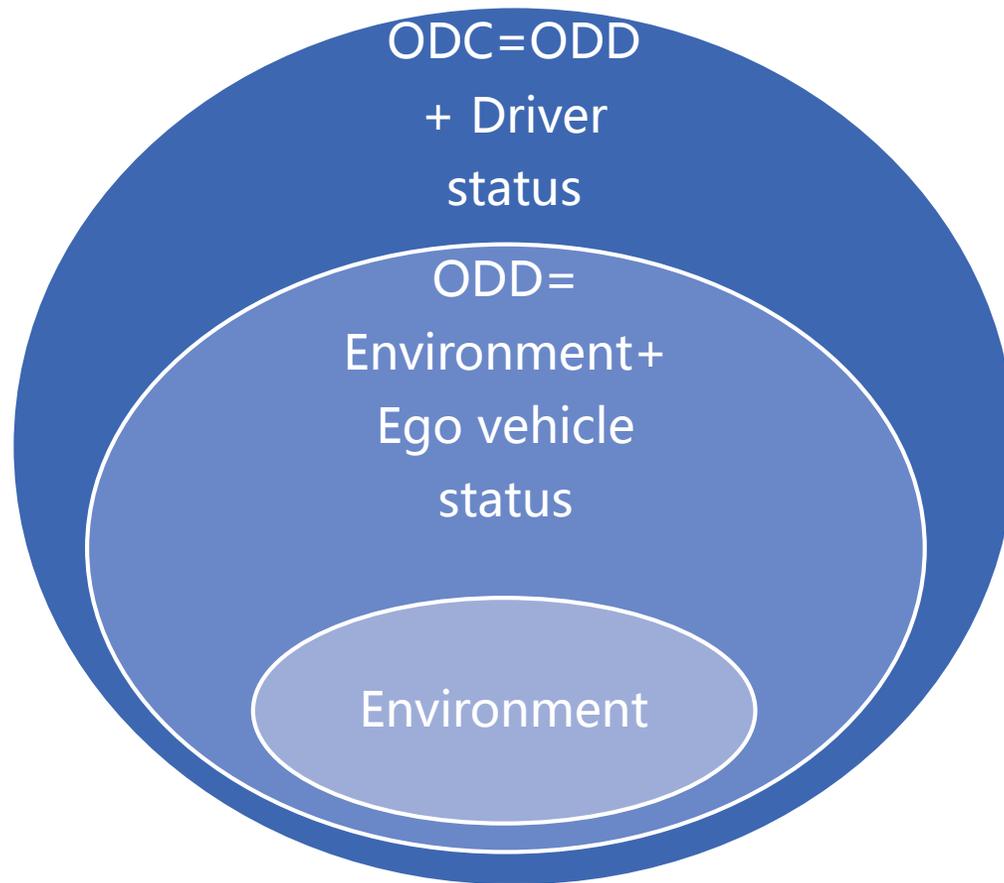
Question: What term do we use to describe the condition an automated system is designed to operate in?

ODD is the term we use quite often.

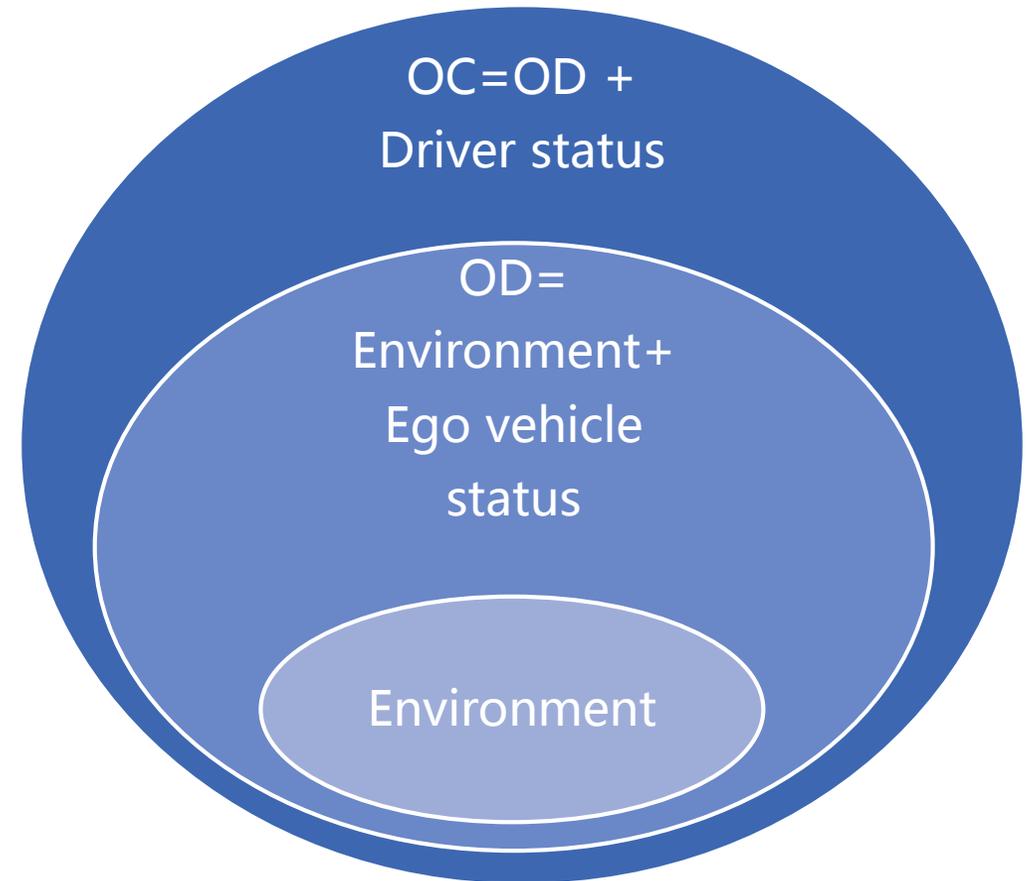
For most of the time, we use ODD to describe the domain that an automated vehicle is designed to operate in. However, ODD may sometimes be misused when it refers to the condition an automated system is allowed to start, operate or try to hand over the control.

For example, as some automated systems design principle, they can only be initiated when the system detects the driver’s both hands on the steering wheel. In this case, ‘Both hands on the steering wheel’ is the requirement for initiating the automated system and this is a kind of description of driver’s status. However, as ODD defined in SAE 3016, it does not include the driver’s status, so, in this case it is not correct for us to use the term ODD.

We propose to use ODC/OC when we tend to describe the whole condition under which automated vehicle could operate. ODC/OC is the superset of ODD/OD by adding driver conditions on it.



ODC : Operational Design Condition
ODD : Operational Design Domain
(Used by vehicle manufacturers)



OC : Operational Condition
OD : Operational Domain
(Used by management)

Relationship between OD, OC and ODD, ODC

