

Proposed FRAV Definition of the Dynamic Driving Task (DDT)

May 20, 2021

The following text is submitted for consideration by FRAV. The text aims to provide a common understanding of the Dynamic Driving Task and its relation to the development of ADS safety requirements.

“Dynamic driving task” (DDT), in the context of an ADS-equipped vehicle, means all of the real-time operational and tactical functions required to operate the vehicle, excluding strategic functions such as trip scheduling and selection of destinations and waypoints.

The ADS should have the means to perform all DDT functions (i.e., the entire DDT) on a sustained basis within the Operational Design Domain (ODD), if any, of the ADS’s feature(s).

DDT functions can logically be grouped into three general categories that provide a useful basis for discussion:

- Sensing and Perception
- Planning and Decision
- Control

The **sensing and perception** category includes:

- Monitoring the driving environment via object and event detection, recognition, and classification, which includes:
 - Perceiving other vehicles and road users, the roadway and its fixtures, objects in the vehicle’s path, and relevant environmental conditions
- Sensing the ODD boundaries, if any, of the ADS feature
- Positional awareness

The **planning and decision** category includes:

- Prediction of actions of other road users
- Response preparation
- Maneuver planning

The **control** category includes:

- Object and event response execution
- Lateral vehicle motion control
- Longitudinal vehicle motion control
- Enhancing conspicuity via lighting, signaling and/or gesturing, etc.

These functions are necessary across all ADS. The safety requirements would provide minimum specifications to ensure performance of these functions in a manner that meets the safety needs to be identified for the 8 June FRAV session (based on FRAV-12-08).