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agenda item 20.

Automated Driving

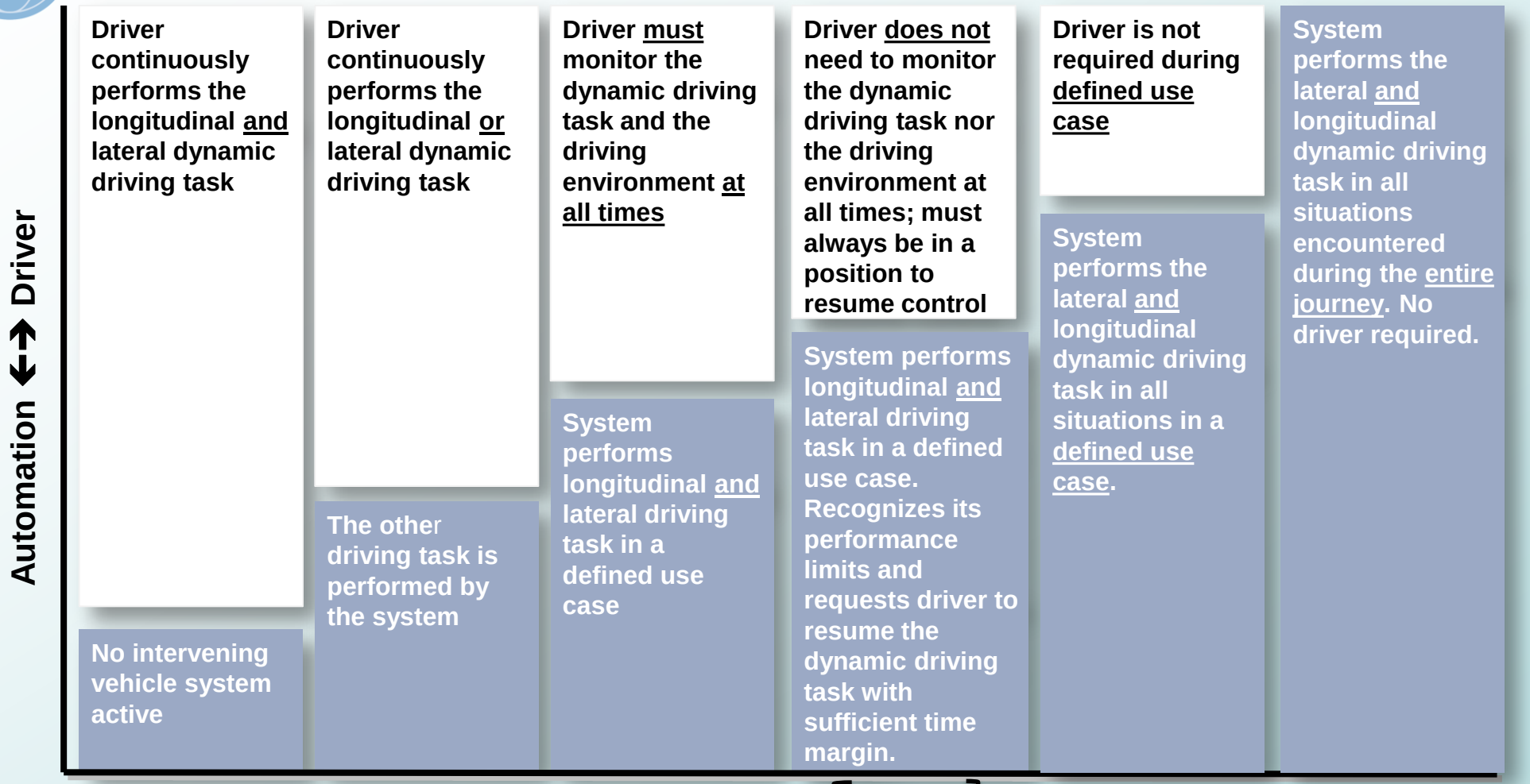
Definition for Levels of Automation

OICA, 2014-03-14

Motivation

- New automated driving and parking systems will be available in the foreseeable future
- To reach further progress and to avoid misunderstandings a classification of those new automated systems with a sufficient level of detail is needed.
- The classification should address legal and technical aspects
- A refined classification of existing driver assistance systems is not in the scope of this classification
- If harmonized worldwide, the definitions of the levels of automation create a common understanding for governmental institutions, regulatory bodies, OEMs, suppliers, etc.
- In future discussions, this classification can be used for
  - Legal assessment, e.g. for an evaluation which national and international laws or vehicle regulations need an amendment or clarification
  - Technical assessment, e.g. for a classification of automated driving functions with respect to functional safety
  - Communication, e.g. to outline a roadmap including introduction scenario for automated driving functions

Levels of Automated Driving



*terms acc. to SAE J3016

Glossary of Terms

- **Dynamic Driving Task**: Performing the lateral and the longitudinal driving task by considering the driving environment.

- **Driving Environment**: The outside surrounding of the vehicle in on-road traffic e. g.:
  - Road markings, road signs, road infrastructure
  - Other vehicles, objects on the road/roadside, other traffic members (pedestrians, cyclists, etc…)

- **Monitoring (according to SAE J3016)**: The activities and/or automated routines that accomplish comprehensive object and event detection, recognition, classification, and response preparation, as needed to competently perform the dynamic driving task.

- **Defined Use Case**: A driving scenario (including e. g. the driving environment, expected velocities) for which the dynamic driving task (longitudinal and lateral control) is automated. Example: Highway Chauffeur – a function that performs only on a highway, up to a max. velocity and limited or not to certain manoeuvers (according to the system limitations and thus the level of automation).

Next Steps

Create a more detailed table which shows the different responsibilities at each Level of Automation:

- “Role of System” (ex. Lateral and/or Longitudinal control)
- “Role of Driver” (ex. Monitor, Dynamic driving …)