

Taxonomy of Driving Automation

ODD(Operational Design Domain)

The conditions under which the automated driving system is designed to function and the scope of application, e.g. speed, traffic conditions, road type, weather, environment, etc.

3 main Driving Task

Perceiving the environment

Planning how to research from point A to B

Controlling the vehicle

steering, break, acceleration ...

What makes up a driving task

Controlling

Lateral control

Longitudinal control

planning

long term

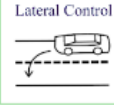
short term

Miscellaneous

Object and Event Detection and Response(OEDR): detection, reaction

Level 0: regular vehicles, no automation

Level 1 - Driving Assistance



Either, but not both

Examples

- **Adaptive Cruise Control**
 - can control speed, driver has to steer
- **Lane Keeping Assistance**
 - can help you stay in your lane, if you drift

Level 2 - Partial Driving Automation



Both

Examples

- GM Super Cruise
- Nissan ProPilot Assist
- ...



Levels of automation

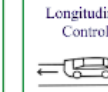
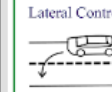
Level 3 - Conditional Driving Automation



Includes automated object and event detection and response
Examples { • Audi A8 Sedan • ...



Level 4 - High Driving Automation



Handles emergencies autonomously, driver can entirely focus on other tasks.

Level 5: Full driving automation, unlimited ODD

Summary for levels of automation

	1	2	3	4	5
Lateral Control					
Longitudinal Control					
OEDR					
Fallback					
ODD	Limited				∞