Week-1

1.

Terms and Definitions

- Driving task
  - Perceiving the environment
  - Planning how to reach from point A to B
  - Controlling the vehicle

These 3 sub tasks will be running always which constitutes to main driving task

2. • Operational Design Domain (ODD)

Operating conditions under which car is deisgned to function

It includes environment,date and time,raodway etc

ODD need to be planend in advacne

3. **What makes up a driving task?**

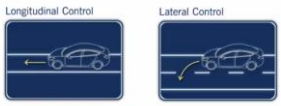
- **Lateral control** - steering
- **Longitudinal control** - braking, accelerating
- **Object and Event Detection and Response** (OEDR): detection, reaction
- **Planning**
  - Long term
  - Short term
- **Miscellaneous**

Misc includes hand waving,light signalling,interacting with other driver etc

4. **Autonomous Capabilities**

- Automated lateral control?
- Automated longitudinal contro
- OEDR
  - Automatic emergency response
  - Driver supervision
- Complete vs Restricted ODD

Level 1 - Driving Assistance



Either, but not both

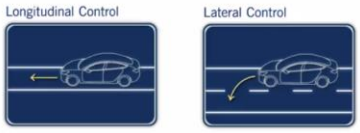
Level 0 - No Automation

- Regular vehicles, no automation

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



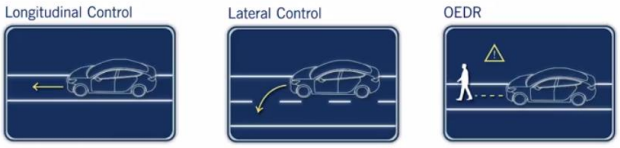
Both

Examples

- GM Super Cruise

In Level 2 driver monitroign is needed

Level 3 - Conditional Driving Automation



Includes automated object and event detection and response

Examples

- Audi A8 Sedan

Level 4 - High Driving Automation

In Level 4.Waymo gives autonomy for limited ODD areas,so driver can rest

Level 5- High Driving Automation