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Platooning

Overview + Sprints

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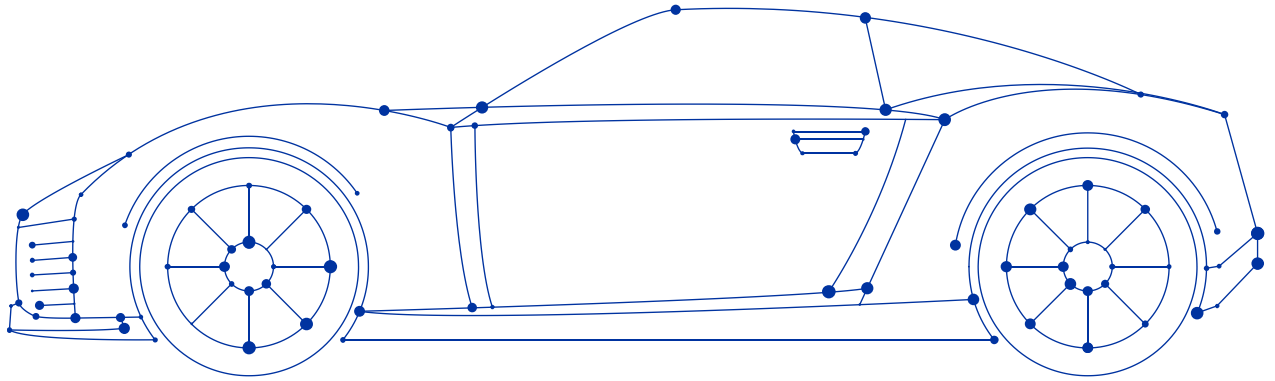

Overall Goals

- One car leads, several cars might follow
- Followers might accelerate / decelarate to keep a constant distance to the leader
- Emergency break in the leader shall trigger emergency break in the followers
- Platoons can be created, fused, splitted

Requirements

- Use (given) V2V communication
- Platoon Management:
  - State-based (off, leader, follower)
  - Receiving a message might change the state
  - Changing the state might generate new messages
- Platoon Control:
  - Takes care of the car behavior (driving functions) based on the state

1st Sprint

- Understand the car model
- Understand V2V implementation
- Implement the leader functionality
  - Restricted scenario: 2 cars in straight line
  - Creation of platoon
  - Send of messages with platoon information

2nd Sprint

- If needed, improve V2V communication
- Implement the follower functionality
  - Restricted scenario: 2 cars in straight line
  - Allow other cars to join the platoon (created in sprint 1)
  - A follower shall be able to leave the platoon
  - Full use of V2V communication

3rd Sprint

- Support for emergency break
- Extend functionality to handle curves
- Support errors in communication (i.e. disconnection due to connection lost)
- Handle more than 2 cars
  - If a follower leave the platton, its followers shall create a new platoon