

# COLLABORATIVE CONTROL OF AUTONOMOUS CARS

## PROJECT TEST CASES

### Functional Requirements

#### 1. Vehicle Dashboard Implementation

- Rapidly change information that should be displayed on the dashboard (e.g. by turning a signal on and off multiple times)
- Update all of the information that should be displayed at the same time (turn signal, rpm, speed)

#### 2. Autopilot Control

- Have a predetermined route that the autopilot must follow
  - i. This will become the “control” that will be used for testing
- Have the autopilot drive on its own with no predetermined destination
  - i. This will allow for a “random” aspect, where the team can test how the autopilot will react.

#### 3. Overtaking and Lane Switching

- The vehicle (with autopilot on) will be forced to switch lanes and overtake a slower moving vehicle.
  - i. The code will have to be adjusted to allow for such a thing to happen. In the default state, the vehicle will slow down and stay behind the slower vehicle.

#### 4. Turn Indicators

- The autopilot (and human) must be able to enable and use turn indicators for lane changes, turning, and hazards.

#### 5. Lane Invasion Handling

- Have another vehicle “drift” into the lane of the autopilot.
  - i. This will enable the team to see how the autopilot will react to a foreign object coming into the lane.
    1. Will the vehicle stop? Will it move out of the way? Will it slow down?