State Diagrams

Brake-By-Wire

Description:
The Brake-By-Wire class gets the brake force from brake force calculate when a pedestrian enters the path of the car. It applies the brake force to the brakes for as long as the pedestrian remains in the path. When the path clears the brakes release and the Brake By Wire class returns to idle state.
Description:
The Driver Warning class sends a warning to the driver through the vehicle's center console when a pedestrian is nearby and a potential threat. If the pedestrian enters the path of the vehicle, a different warning is sent to the driver that the vehicle will start braking. The warning will continue to sound as long as the pedestrian is in the path. When the path clears the warning returns to idle state.
Choose Scenario

Description:
The Scenario class simply determines the scenario based on the vehicle and the movement of the pedestrian.
Description:
The PCAS system handles the sending and receiving of messages. When the Pedestrian Camera system sends a pedestrian detected signal, PCAS sends a signal to the driver warning system, and gets the speed from the vehicle. PCAS then contacts the Scenario class, gets the scenario, and uses the BrakebyWire system to slow the vehicle. PCAS then resumes control of the system, and loops until the pedestrian is no longer detected.
Description:
BrakeForceCalculate remains in idle until PCAS->getBrakeForce() is called. If failSafe is true calculate() is called with a break time of 900ms, if failSafe is false calculate() is called with a break time of 200ms. The force is stored until BrakeByWire->getBrakeForce() takes the calculation.
**Description:**
The pedestrian camera remains in idle mode until it detects a pedestrian. At that point the pedestrian flag becomes true, and it calculates the speed direction and location of the pedestrian. This value remains in the class until get PCAS->getWarning() takes the value.