# Advanced Drivers Assistance Systems
# (ADAS)

# What is ADAS

**What:**

Advanced Drivers Assistance Systems (ADAS) utilizes technology and existing vehicle systems to improve vehicle safety

**Why:**

To improve passenger safety by providing warnings and / or intervention to potentially tired or distracted drivers.

**Benefits:**

Decrease in accidents / injuries / deaths caused by tired or distracted drivers

Pathway to autonomous vehicles

Increased traffic flow

**How:**

Utilization of cameras, sensors, computing power, and electronically controlled systems can interpret and react to changing conditions faster than a human driver in many situations reacts. System can be "Passive" (Provide audio, visual or haptic feedback) to notify driver of a pending situation or can be "Active" (Intervention with steering, brakes, etc.) as the situation dictates.
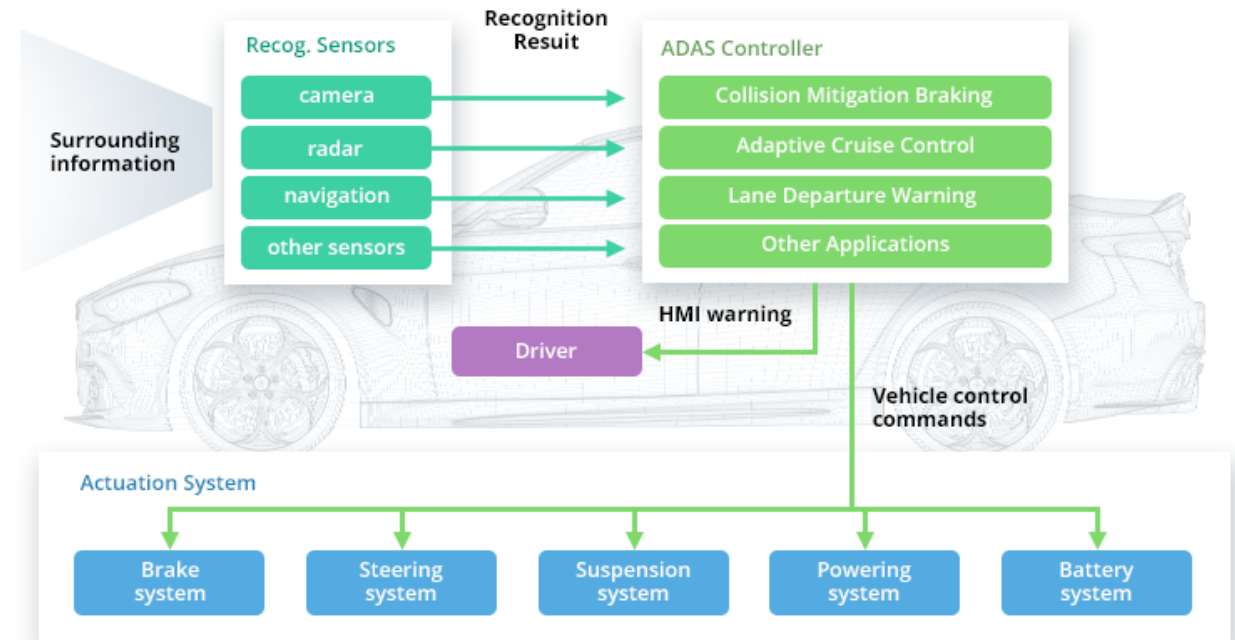
# General System Components

**Existing Vehicle Systems:**
Dynamic Stability Control Braking Systems
Electronic Throttle Control
Electronic Transmission Control
Electric Steering

**Sensors:**
Ultrasonic
Night Vision Camera
Cameras
Short Distance Radar
Medium Distance Radar
Long Distance Radar
Lidar *Some Autonomous Vehicles

# Typical ADAS Systems

- Lane Departure (LDW) / Lane Keep (LKA) / Lane Centering (LC)
- Active Cruise Control (ACC)
- Blind Spot Detection
- Parking Assist
- Autonomous Emergency Braking (AEB)
- Night Vision
- Traffic Sign Recognition (TSR)
- Intelligent High beam Assistant (IHC)
- Tire Pressure Monitoring (TPMS)
- Front Collision Warning System (FCWS)
- Front Vehicle Departure Warning (FVDW)
- Adaptive Lighting
- Driver Drowsiness Detection
- Hill Decent Control
- Rear Cross Traffic