

Testing Plan

System/Validation Tests

- When joystick moves forward the rear wheel spins forward
- When joystick moves backwards the rear wheel spins backwards
- When joystick is turned left the wheels will also turn left
- When joystick is turned right the wheels will also turn right
- When wheels are at a certain speed the vehicle should start leaning as user begins to turn

Integration Tests

- Test Brake sub-system
 - Reads the brake pressure sensor correctly
 - Outputs right PWM output on each wheel
 - Correct binary value for Hydraulic Valve
- Test traction motor control system
 - Correct FET output
 - Correct DAC output (0-5V)
 - Reads PWM Wheel Speed Sensor correctly
- Test steer control subsystem
 - Correct PWM outputs(2 valves)
 - Correct binary value for Hydraulic Valve
 - Reads Steer Angle Sensor correctly
- Test lean control subsystem
 - Correct PWM outputs(2 valves)
 - Correct binary value for Hydraulic Valve
 - Reads Lean Angle Sensor correctly
- Test hydraulics subsystem
 - Outputs correct digital signal to the hydraulic pump
 - Reads the analog pump Hydraulic Pressure Sensor correctly
- Test joystick input
 - Correctly reads joystick X and Y values
 - Detects when buttons are pressed

Note: Unit tests will be done along side integration.