ADC

Reflectance Sensors

Motor Drive Logic

Inductance Sensors

Wheel Quad Encoders

PWM In

SPI

PWM Out

QEI

FPGA Peripheral Interface (Mem Map)

LabVIEW Interface

ESC

MicroBlaze PowerPC Soft Processor (Bare Metal)

Xilinx Spartan-6 XCSLX45 FPGA (LabVIEW FPGA)

Braking Control

Steering Control

Speed Control

Track Learning  
(as time allows)

Freescale 400 MHz PowerPC CPU (LabVIEW Real-Time)

Estimation/Optimal Control  
(as time allows)

MicroBlaze-LabVIEW Real-Time Interface  
(provided by NI, memory mapped locations on MicroBlaze appear as wires in LabVIEW

LabVIEW-provided interface (DMA)