

EE 209 AS Project: Car Emulator Testbed

Midterm Report

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Introduction

This emulator differs from other simulators in following ways:

- the data from this emulator is collected from physical world instead of generated from software;
- this emulator is proposed to be an internet available testbed for any interested parties to use over web services;
- this emulator would be flexible in that the interested parties can customize their own attack and defense functions;

Methods

- This emulator is based on Erika 3, which is an open sources RTOS that comply with AutoSAR standards.
- Hardware: Arduino boards, CAN bus Shield, and multiple sensors may use on a car.

Timeline

Week 4-5:

Initial Investigation on AutoSAR, ERIKA and other choices of framework to be used;

Decision on going on with ERIKA V3 as our basic framework

Week 6:

Research into hardware choices for network setup;

Research into how to use ERIKA on Arduino;

Week 7:

Successfully use basic Task architecture of ERIKA on Arduino;

Decision on Sensors;

Week 8:

Completed sensor network on CAN using arduino;

Start constructing Sensor network within ERIKA architecture;

Week 9:

Completed sensor network within ERIKA;

Start discussion on attack simulation framework;

Week 10:

Collect sensor groundline data;

Build attack simulation framework;