Kyle Kelly 9/30/16

Independent Study - Outline of Semester Objectives

Examine Assist Features in the 2017 Ford Fusion

- Map assist-features to the CAN
  - Pre-Collision Assist, BLIS, Lane-Keeping System
    - MS / HS CAN
    - Arbitration IDs and byte values
- Use OpenXC VI to inject these signals onto CAN
  - Observe effects of injected signals
  - Thought experiment of scenario for catastrophic event with injected signals

Install Hardware in 2017 Ford Fusion for Remote Access to Vehicle

- Translate signals from OBD-II port to Internet
  - OpenXC Cross-Chasm cellular device
  - Bluetooth OpenXC VI —> Android tablet —> in-vehicle router
- Observe vehicle OBD-II output in real-time from lab via Internet
- Inject CAN signals to vehicle in real-time from the lab

Assist Dr. Qu's Students with CAN Research

- Possibly branch from their research to pursue research in adjacent area

(Optional) Embed Whitelist / Blacklist of Writeable Arbitration IDs in OpenXC VI Firmware

- Identify arbitration IDs that should never be user writeable
- Write code to prevent these arbitration IDs from being written to the CAN
- Hide / embed code so that it is not user alterable