**Brief CENG Capstone Project Charter**

**Project area:** / 

1. Facilities: e.g. Bicycle Rental/Parking Lot/Vision System

2. Building Automation: e.g. Greenhouse/SolarPanel/Home

3. Consumer: e.g. Entertainment Protocol DMX/Baby Monitoring Project

4. Education: e.g. Robust Hackable Educational Project

5. Robotics: e.g. Control/Navigation/Dashboard

6. Health and Wellness: e.g. Wearable

**Project Title:** Infotainment

Sponsoring Industry and Personnel:

Hours contributed:

Number of full-time employees, year established, private or not-for-profit:

Value of equipment or access to equipment provided:

FAST contribution:

**Names of Students Involved in Project:**

Tsidkeenu Aznar: Joystick

* Has full parts kit
* Has a multimeter
* Has a raspberry pi available
* Small working prototype of joystick
* Iron solder

Chris Burgener: CANBus

* Has full parts kit
* Prototype had some success with the TTL/USB programmer, but had difficulty with communication between both

Michael Burgener: I2C slave and master

* Has full parts kit

Tristan Reinhardt: servo motor

* Small working prototype that has the motor moving to 3 specified points
* Has a full parts kit

*For each individual student state what development platform they have, what sensors/effectors they have, whether they have a functioning prototype, a complete parts kit, a multimeter, describe any unsoldered connections. Designate a project lead and provide the url of the github repository (see the CreateAGitHubRepository guide) that they will maintain for the project.*

Github URL: <https://github.com/TsidAznar/CENG355>

Hours per student: 14\*3=42 in class hours, 14\*3=42+ outside of class.

Supervising Faculty:

Hours per faculty: 14(3/20\*3)=6.3 in class, 14(1.05+1.49)/20\*3=5.334+ outside of class.

**Executive Summary/Description of the Project (75 to 100 words):**

Our project will be an infotainment device with the intention of mounting on the inside of a vehicle. It will coincide with a phone application that will communicate with a raspberry pi via Bluetooth and will use a CANBus to communicate to the car’s electrical devices and allow for display of geolocation, audio calls and play music. It will make use of the raspberry pi’s HDMI display. The car monitor will display our custom GUI and will be interchangeable with itself with a joystick.

Scope: Prototype that is not to be left powered unattended.

**System Requirements:**

May have to buy additional components

* Speakers
* Monitor

Joystick will feed input and changes will display on Raspberry Pi.

CANBus will communicate between pi and electrical devices

Design approach: Electrical Device<-> Raspberry Pi<->Bluetooth <->Android <-> Firebase

Mandate: Self funded