Dashboard Design Review

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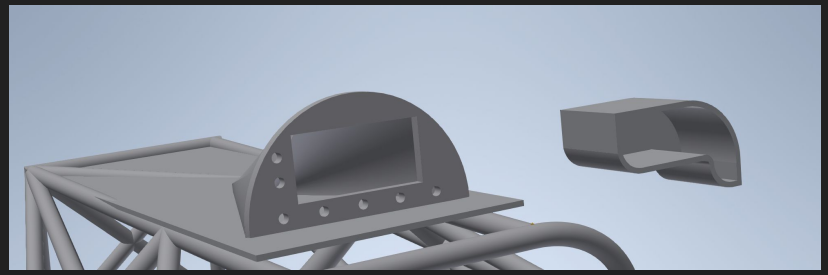
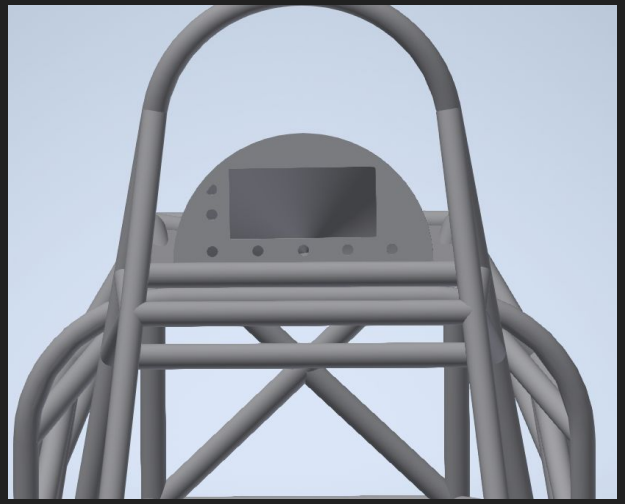
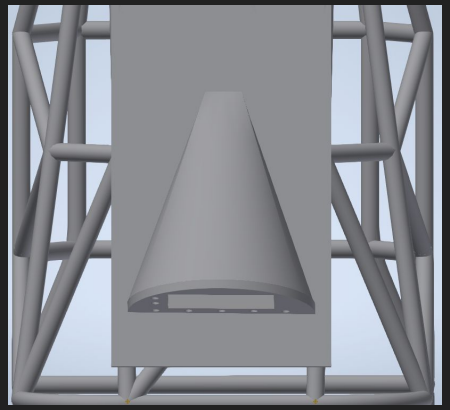
Why are we redesigning the dashboard?

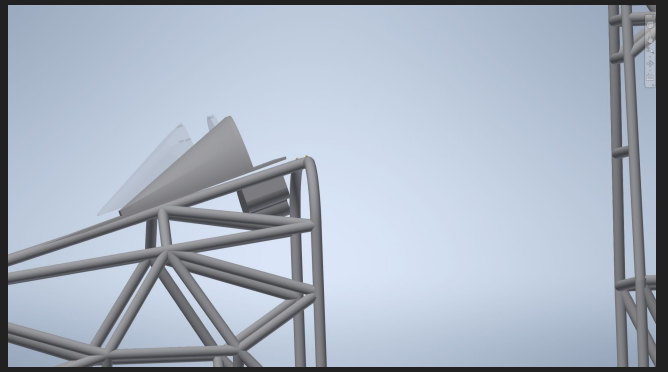
1. First and foremost, to streamline the data display systems
    a. Location of visual information - Front and Center
    b. Integration of audio information
2. Response Time
3. Ease of Use
    a. Size and Form Factor
    b. Computing Capability
    c. Communication Protocols

Physical Model

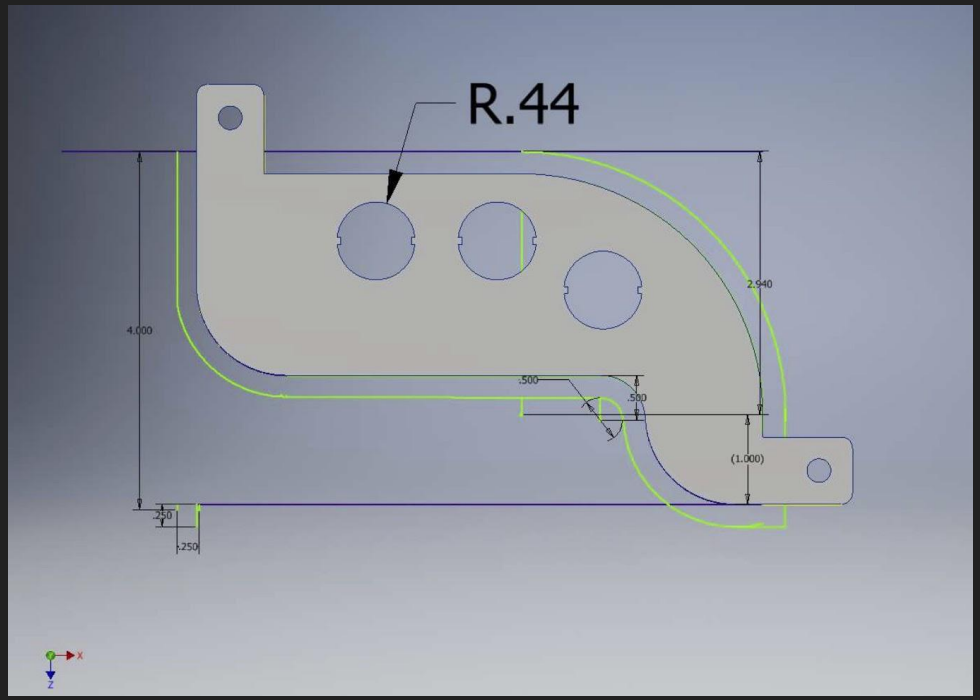






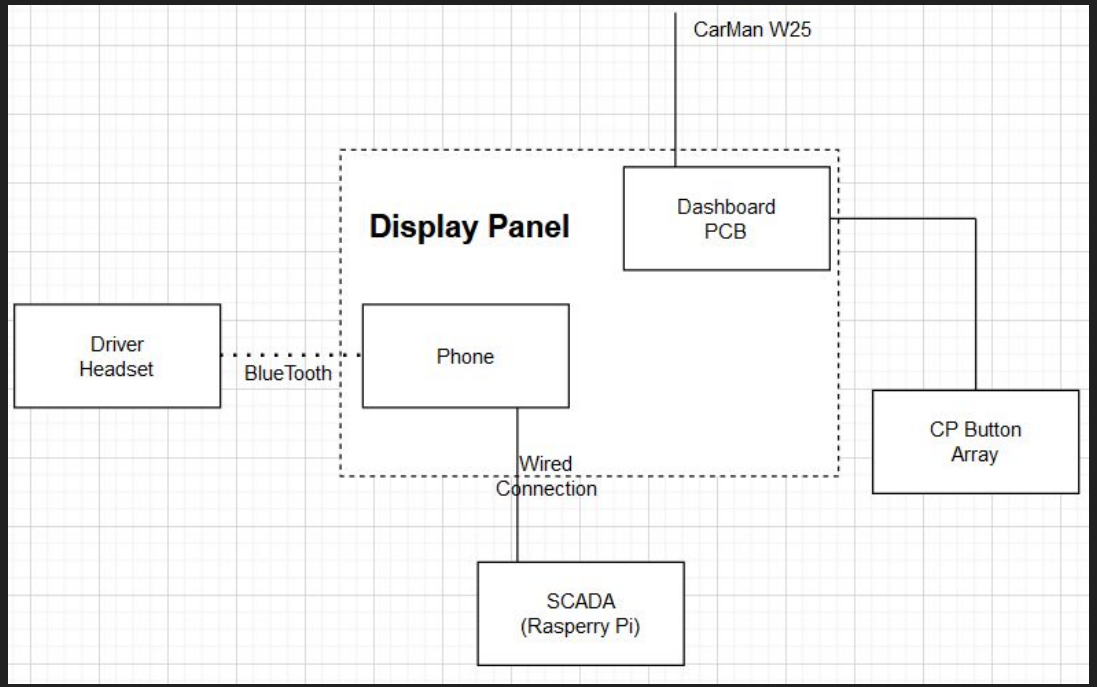


Button Array*



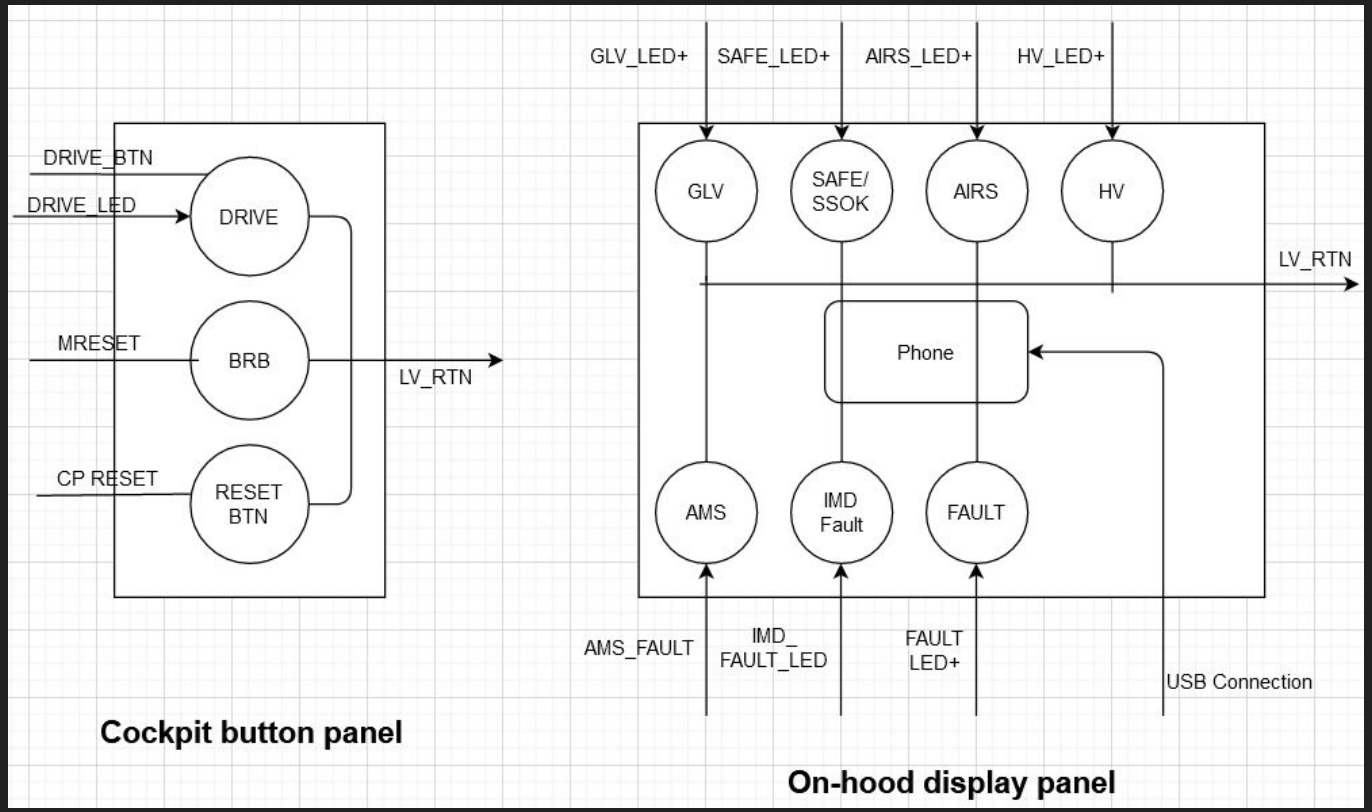
*Application to be reviewed by the rules committee

Hardware Block Diagram

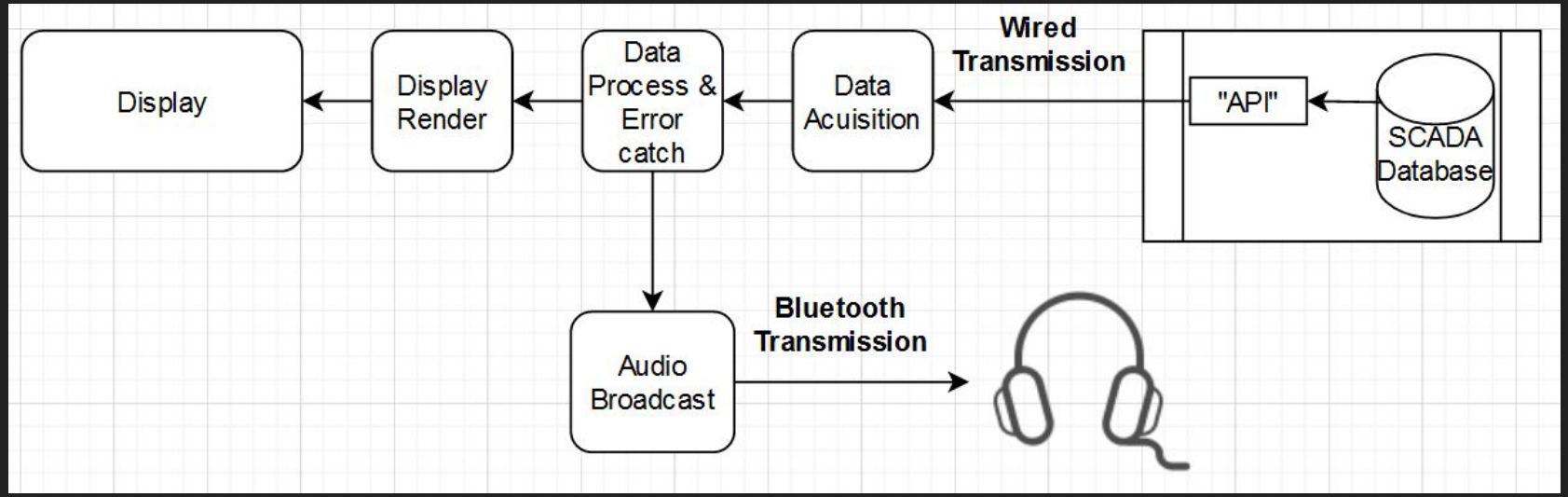


- Phone
  - Driver Headset
  - SCADA (Rasperry Pi)
- Front Dashboard PCB
  - Receives Wiring from CarMan
  - Power to Phone
  - Contains GLV LEDs
  - Redirects Buttons to Array
- Cockpit Button Array
  - Safety Loop Drive, Reset, BRB

Electrical Schematic



Software Block Diagram



1. DataAcuisition
2. DataProcess & Error Catch
3. DisplayRender
4. AudioBroadcast

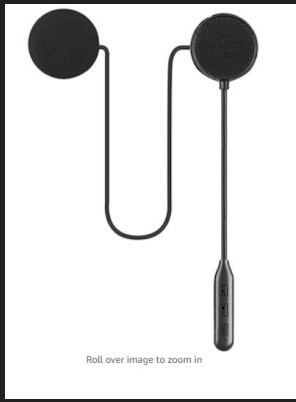
Parts List

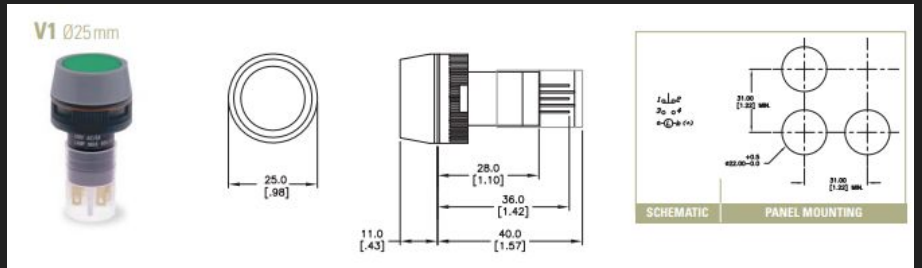
Previously Acquired:

- Assorted LEDS
- Cabling/Wiring Materials

To be Acquired:

- Smartphone
- LED-Buttons
- Bluetooth Helmet Speakers
- Wired Connection
- Testing Raspberry Pi
- USB to Ethernet





Possible Improvements

- Different Phone Model
  - Micro USB vs USB C
- Further shrinking the Dashboard button array
  - Dependent on the button sizes and LED regulations
- Second Raspberry Pi in the dashboard?
- Include a software module to take pictures of the driver
  - Important moments and regular intervals