Hybrid Start (Group 9)
ECEN 404 - 901

Update Log 7
Week of Mar 7, 2022 - Mar 13, 2022

- **Ryan Aultman** (Storage-to-Output):
    - I finished soldering the switching circuit, the current sensing circuits, and one of the voltage sensors. I integrated with Janet for the switching circuit and the current sensors, and those are all behaving as expected. I was planning on testing the voltage sensing circuit during the lab this week, but Janet got sick and we were unable to integrate. We will do so at some point in the week, and at that point I will be fully integrated.
- **Thomas Bergeron** (Digital Interface):
    - Over blitz, the code for the GPIO pins outputting signals for emergencies and Start as well as inputting signals for the battery, over current error, and over voltage error. I validated these with LEDs to make sure they went to the correct pins. This week during my lab, I strengthened my PCB's connections and tested it for several minutes with no errors. I took measurements for each component and started creating a general build
- **Janet Park** (Controls/Monitoring):
    - During Capstone Blitz, I was able to further validate the sensor readings for Hunter's and Ryan's subsystems, and also ensured that the MCU sets the voltage/current limits for the ADC PPB function for fault detection. Furthermore, I completed setup and debugging the SPI protocol, and will need to integrate with Thomas by sending the sensor readings. Unfortunately, I was not able to successfully implement emulation mode, and at this point, full system integration has higher priority over this optional feature, so I will be running the code from the IDE on my laptop. Because I was ill, I was limited to integrating with my other teammates, but I was able to validate that the correct signals were output when power source switching conditions were fed into the MCU. This week, I plan on validating the voltage sensors with Ryan once we find a 230V source, and I will continue to integrate the switches with Hunter once his components arrive.
- **Hunter Ruff** (Input-to-Storage):
    - Since last week, while trying to debug my buck converter under load, I fried my buck converter. I've ordered replacements that are on the way so I will be resoldering and debugging the buck circuit as soon as they arrive. I'm also designing a small board used to deliver power to the various switches in out project. The GPIO pins on the Delfino cannot provide the necessary current, so I am designing a solution using NMOS transistors and 3.3V from my power supply to drive the relay coils.