Hybrid Start (Group 9)
ECEN 404 - 901

Update Log 5
Week of Feb 21, 2022 - Feb 27, 2022

- **Ryan Aultman** (Storage-to-Output):
    - I began soldering the switching circuit and will finish it by the end of this week. I began validation on the parts that I did have soldered, and all behaved as expected. As for the sensing circuit, unfortunately the PCB delivery date got delayed from the 21 to the 25, so I will be working this weekend and next week in order to catch up on this delay.
- **Thomas Bergeron** (Digital Interface):
    - I started integration with the microcontroller. We were able to validate the Emergency switch. The serial communication is still under goin troubleshooting but the emergency switch validation proves that sending I/O signals are doable so we will be able to trigger the error screens without a problem. Then, I worked on my PCB and had to resauter the entire board because the PCB was not constructed with metal in the drill holes, so there were zero valid connections after last time. After suffering everything again, the connections worked but were a little shaky and will be rincon rec later this week.
- **Janet Park** (Controls/Monitoring):
    - I was able to begin integration with the digital interface and grid input-to-storage subsystems. Regarding the former, we were able to establish communication between GPIO pins by sending a signal to the microcontroller to allow emergency deactivation when the emergency button is pressed. However, we were unable to successfully transmit and receive arbitrary integer values via SPI communication. We plan to catch up this week. Furthermore, while testing the voltage sensor values for the battery DC bus, I measured a large amount of noise at the output of the op amp. Therefore, Hunter and I decided to replace the op amp with a capacitor to filter out any noise. Ryan and I were also able to ensure that the microcontroller is able to provide 3.3V to the switches. I need to continue debugging and fine-tuning the timings of my interrupt service routines, but I should be ready for integration with the other subsystems by the end of this week.
- **Hunter Ruff** (Input-to-Storage):
    - So far I have all my circuits behaving as expected, minus the 3.3V output on the secondary of the linear regulator. I am able to eliminate the noise but the base voltage is steady at 3.8V. To fix this, I can apply voltage division, but will need to load test this as changing loads can affect the voltage. Otherwise I will need to apply another buck converter. As for integration, I am now ready to integrate with Thomas and Ryan. I have a polarity issue with the 5V USB, but this is an easy fix that I will correct this week. I am also ready to integrate with Janet's sensors, as my outputs and inputs are ready.