Hybrid Start (Group 9)
ECEN 404 - 901

Update Log 12
Week of Apr 18, 2022 - Apr 24, 2022

- **Ryan Aultman** (Storage-to-Output):
    - This week, we did a full system test with my switching circuit controlled by the DC power source. The system ran as expected, and the motor was able to run off the grid energy after being started by the battery. Further, I attempted to solve the issue of too much current being transferred to the transformer input of the voltage sensing circuit. However, I was unsuccessful in finding an alternate solution.
- **Thomas Bergeron** (Digital Interface):
    - This week we did a full run minus the switches. Then, I was able to lay everything out in their spots within the housing. I also cut 3 holes. One for cables to run from the circuits to the battery and inverter, one for the wall plug, and one for the fan. The fan was then secured in place. I then found out my SPI code was missing and that I need to recode it.
- **Janet Park** (Controls/Monitoring):
    - This week, we were able to perform a start-up test using the battery and motor. The new relays arrived, but Ryan found that the switches were not broken from last week. However, we discovered bridging that rendered the MOSFET's functionality in the switching driver circuit, so we were not able to complete validation using the switches. I moved the disk mounted on the shaft of the motor closer such that the Hall sensor is able to more accurately detect the magnetic field, and validated that this function was fully operational.
- **Hunter Ruff** (Input-to-Storage):
    - I was able to connect the power plug and my supply circuit to run the Raspberry Pi and the grid switching circuit in a full start-up. We successfully started the motor and switched between battery and grid power. We found that there is a hardware issue between the mosfet drivers and the switching relays. Since the circuit was working properly last week, the issue needs to be investigated and resolved this week before we are able to do more startup tests.