

# EE CprE 492 – May 21 - 27

## MicroCART Senior Design Team

### Week 7 Report

March 1 - March 14

Faculty Advisors: Phillip Jones

#### Team Members:

Alex Bjerke — *Project Manager*

Amith Kopparapu Venkata Boja — *Embedded Software Lead*

Theodore Davis — *Embedded Hardware Lead | System integration*

Grayson Goss — *Technical Lead | CAD Design Lead*

Hannah Mohamad — *Team Webmaster*

Russ Paulsen — *Test Station Lead*

Alfonso Raymundo — *PCB Design Lead*

Trent Woodhouse — *High-Level Software Lead*

#### Summary

Each subteam is working on their parts as shown in the individual contributions. Our major milestone is to be able to start PID tuning.

#### Past Week Accomplishments

- Finished prototype 1 ~80% done but stopped due to no Mosfets & ESP. Next plan is to unsolder M4 to make it flatter.
- Ground Control GUI integration progress; ready for first ground control demo
- Testing Wifi airlift module
  - Cannot push custom code to device
  - Must use the spi interface to communicate with device
  - Recommend purchasing a esp feather rather than a wing
- Progress on Ground Control
- Fix the Breadboard drone Motors. & Layout Image v5.0 to show new Motor setup.

#### Pending Issues

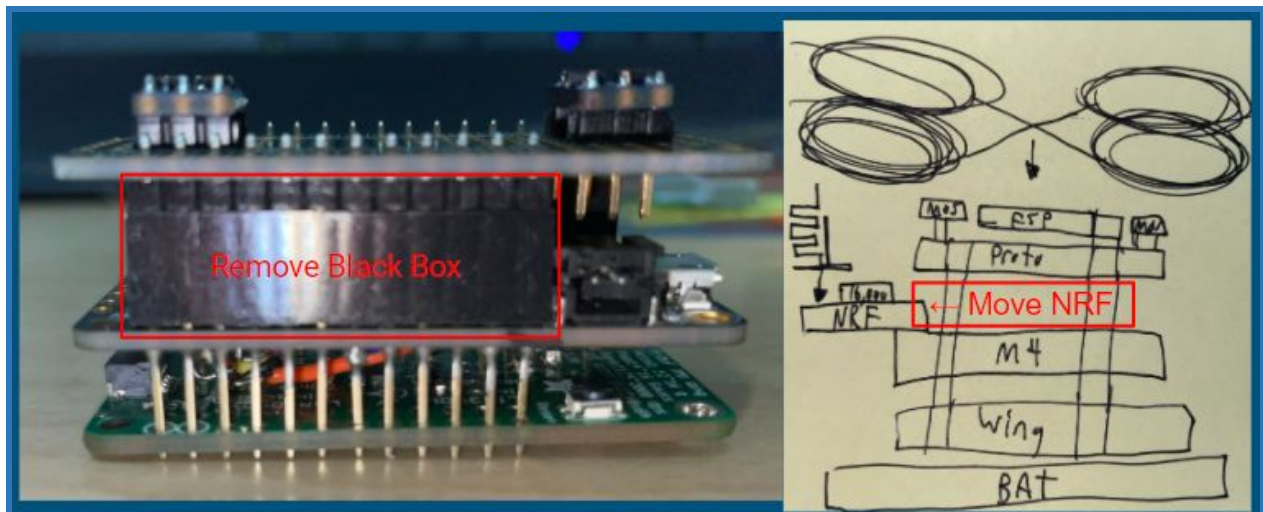
- Fonzy - Need 2nd ESP8266 ESP-01 Serial Wifi Module

## Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Alex	Worked with Trent on ground control GUI integration. Got C portion to a point of being "ready" for a first demo	4	96
Alfonso	Finished prototype 1 ~80% of the way but stopped to do no Mosfets & ESP.	7	109.0
Amith	Finished reading all the sensor data from the IMU. Started understanding PID with Theo.	6	118
Grayson	Modeled Base station. Investigated USB and Wireless protocols for data transmission. Began coding nano for tx/rx tests (not compatible with test station just yet)	11	111
Hannah	Continue working on building th prototype 1. Fixed the Pin layout version 5.2	5	65
Russ	Assisted with needed test station information	4	76
Theodore Davis	Talked about how to implement PID algo. With Amtih. Figured out how to program ESP 8266.	6	102
Trent	Worked with Alex on ground control GUI integration and discussed plans moving foward	1.5	66

## Plans for Coming Week

- Fonzy - Plan is to unsolder M4 to make it flatter. Rewire M4 with NRF24L01+, Add long male pins to Drone like this image, & be done by Wednesday (3/17/21).



- Amith - Continue to work on the PID with Theo. Finish up the last bits of formatting in the I2C code, and then combine it with UART code.
- Alex - Depends on discussion with Dr. Jones

- Grayson - Continue modelling test station stands. Print base station to test tolerances. Code nano for full packet transmission.