

EE/CprE/SE 491 - WEEKLY REPORT 10

November 15th- November 21st

Group number: may25-32

Project title: MicroCART mini: Microprocessor Controlled Aerial Robotics Team

Client &/Advisor: Dr. Phillip Jones

Team Members/Role:

- Daniel Zaucha: Client interaction, Communications Lead
- Jonah Upah: Hardware Lead, Team Secretary
- Ryan Lowe: Technical Advisor
- Yi Hang Ang: Software Lead

Weekly Summary

This past week, we have gotten together on our chosen work days and have begun debugging the different parts of the code. One of the issues that came up over the course of this is difficulty making sure about what we are actually supposed to be working on versus what is deprecated code that is no longer being worked on. The git wiki has only been moderately helpful in regard to this, so the creation & implementation of the legacy cold folder has become more important on the priority list between then and now.

Past week accomplishments

- Daniel Zaucha
 - Went to Lab on Thursday, Sunday, Monday, Tuesday
 - Going through Drones & radio dongles - Checking health & fixing them
 - Have emailed past year's team about fixing Blue Light issues while also documenting the issues and how attempting to fix them goes
 - Took advisory meeting notes

- Jonah Upah
 - Went to Lab on Thursday, Sunday
 - Guided advisory meeting
 - Mapping out back end (See Jonah's Doc)
 - Looking on how to add test stand sensor data
 - Figuring out the multi threading.
 - Comparing the C backend to the python backend
 - I can understand in C then implement in python
 - Test stand Arduino, existing code.
 - Tried to connect to the Arduino Nano but it wouldn't connect to my computer via USB. Not recognized by Arduino IDE.
 - Might try to change the code to fit my Arduino as a next step.

- Ryan Lowe
 - Went to Lab on Thursday, Sunday
 - Working on mastering the backend, as was suggested by last year's team.
 - Figuring out how the packets are currently set up so that I can implement changes that last year's team proposed to us.
 - Need to rework how packets are being updated on the frontend side.
 - Currently the frontend reads and writes to a file for every logging variable
 - Making changes so that the frontend only updates the variables that are being checked in the GUI to improve the logging plots speed.

- Yi Hang Ang
 - Went to Lab on Thursday, Sunday, Monday Tuesday
 - Worked on in class assignments on Thursday
 - CrazyFlie health status document updating
 - Understood how the overall system works
 - After going through GitLab documentation and Makefiles
 - GUI debugging
 - Pushed a fix for time-traveling packets

- May have found a reason on why setpoints drop to 0 randomly
 - Listed in Observed Issues document
 - Need to look into it further

Pending Issues/tasks

- Fix issues on git board
- ETG room fixes for equipment

Individual contributions

NAME	Individual Contributions	Hours this week	HOURS cumulative
Daniel Zaucha	<ul style="list-style-type: none"> ● Crazyflie health updating ● Frontend debugging ● Documenting bugs and solutions found 	R: 2.5 + Sun:3.5 + M:2 + T:.75	64
Jonah Upah	<ul style="list-style-type: none"> ● Backend 	10	43
Ryan Lowe	<ul style="list-style-type: none"> ● Getting started on implementing the proposed packet structure. 	R: 2.5 + Sun:3 + M:1.5	44
Yi Hang Ang	<ul style="list-style-type: none"> ● Implemented fix for time-traveling packets ● CrazyFlie health status updating ● Debugging GUI for setpoints randomly dropping to 0 	R: 2.5 + Sun:3.5 + T:2	52

Comments and extended discussion

- Some physical hardware needs some fixings from either soldering connections replacements (potentially) or new components that may have to be ordered from the internet.

Plans for the upcoming week

- Daniel
 - Crazyflie health logistics
 - Ongoing Documentation:
 - MP4 Document that shows where students can find what is needed.
 - Frontend with Yi
 - Gitlab issues from issues board / Debugging issues where can see
 - Checking out Groundstation
- Yi
 - GUI debugging and testing with Daniel
 - Testing all CrazyFlies' health status
 - Testing the remaining few
 - Debugging why setpoints randomly get set to 0
 - Have observations but do not know the reason
- Ryan
 - Hopefully will get an email back from last years team that will help us move forward with the new packet structure they wanted to implement last year but never got to.
- Jonah
 - Backend
 - GUI
- Group Plan:
 - Complete Tasks/issues that we are assigning and claiming on the git
 - Observed issues & solutions document sheet

- PCB Needs document - Part Number replacement specifically as well as other logistics

Summary of weekly advisor meeting

Our group has begun to make progress on what we need to be working on, successfully beginning to switch gears, although we will mostly be unavailable during the course of the Thanksgiving break. We will be continuing to work on the project in our sub-teams and working together as this helps the group make the most progress, some physical repairs may have to be made by the ETG on a few of the hardware parts, and for some items such as the CrazyFlie on/off switches we will need to find the online part number and order it ourselves. Aside from that we have been told to look at some of the past year's videos for the hardware since some of our questions had answers that may be inside.