

sdmay18-17 MicroCART (Microprocessor Controlled Aerial Robotics Team)

Week 17 Report

Reporting Period: 2/11/18 - 2/18/18

Team Members

Blake Pries -- Communications Lead

Dane Larson -- Ground Station Lead

Matthew Kelly -- Documentation Lead and Webmaster

Tyler Imboden -- Quad Software Lead

Jakub Hladik -- Test Lead

Kyle Trost -- Team Lead

Peter Thedens -- Repository Lead

Austin Rohlfing -- Controls Lead

Summary of Progress this Report

Generals Tasks for entire team:

- PIRM presentation

Quad Software - Tyler and Kyle:

Summary for progress this report:

- Created print statement for printing over the usb port
- Created really basic tests for testing hardware components
- Tried testing vivado build but pwm wave seems not to be working

Pending Issues:

- Vivado build not working

Plans for upcoming reporting period:

- Further debug vivado build(aiming to get it done by the end of the week)

Controls - Austin and Blake:

Summary for progress this report:

- Finished reading BYU quad control doc
- Briefly looked into Simulink sim architecture
- Demoed quad to future computer engineers!
- Met with Matt K to discuss manual assisted mode

Pending Issues:

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Plans for upcoming reporting period:

- Move Matt Rich's LQR model to existing Simulink simulation
 - Modify coefficients with current parameter values
- Work with Matt K and Jakub to create manual assisted mode
- Help Tyler with soldering for some components

Testing - Peter and Jakub:

Summary for progress this report:

- Starting plugging in our current control graph into simulator (Jake)
- Completed markdown explaining Makefiles (Peter)

Pending Issues:

- Simulation visualization not finished (Jake)

Plans for upcoming reporting period:

- Figure out where to inject control inputs into our current control graph (Jake)
- Make merge request for new markdown (Peter)
- Examine Data Analysis Tool files (Peter)
- Help Jake on work on interfacing with control graph (Peter)

Ground Station - Matt and Dane:

Summary for progress this report:

- Adapter is communicating with the Microcart Groundstation (Dane)
- Cleaned up code and creating makefile (Dane)
- Demo'd quad to a group of High School Students (Dane)

- Almost complete with backend changes until second quad is finished (Matt)
- Figured out crazyflie issues (Matt)

Pending Issues:

- Crazyflies are not tuned very well don't know if we will be able to solve without help.
 - Crazyflie connects to backend as intended, but after take off the crazyflie flies right out of the vrpn system and we have to kill the motors.

Plans for upcoming reporting period:

- Get the adapter code to an easily extendable library and headers. (Dane)
- Allow for multi CFs on the CF adapter (Dane)
- Look back into the safety rules now that we are working on assisted manual mode (Dane)
- Get a merge request on issue 44 (backend changes) (Matt)
- Start backend clean up as I wait for second quad (Matt)
- Possible start on GUI changes for first approach at multiple quad support for multi-trackable (Matt)

Name	Role	Contribution	Hours worked	Total
Peter Thedens	Repository Lead	Completed makefile explanation	4	94
Austin Rohlfing	Controls Lead	Finished reading; worked XSDK; planned LQR next steps	8	114
Kyle Trost	Team Lead	Print statement function Hardware testing "scripts" Tried testing vivado port(didn't work)	6	151
Matt Kelly	Documentation Lead	Got crazyflie issues mostly	11	143

		figured out. Modified backend further and worked with Dane.		
Dane Larson	Ground Station Lead	Adapters almost done... last connection.	13	112
Jakub Hladik	Test Lead	Started plugging in controls graph into the simulator	6	104
Tyler Imboden	Quad Software Lead	work on quad	5	107
Blake Pries	Communications Lead	Read controls thesis. Talked with Matt K about manual assist mode	5	