

sdmay18-17 MicroCART (Microprocessor Controlled Aerial Robotics Team)

Week 20 Report

Reporting Period: 3/5/18 - 3/20/18

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:

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Quad Software - Tyler and Kyle:

Summary for progress this report:

- Finished up wiring quad
- Vivaldo is working
 - Added AXI timer component
 - Re-generated BSP sources
 - Haven't tested in autonomous mode yet
- Started documentation for Vivaldo project

Pending Issues:

- I don't think AXI timer is needed. I think we can use the global timer and remove the unnecessary component
- Vivaldo build is not documented

- Need a git ignore before we push the Vivado project

Plans for upcoming reporting period:

- Start testing new quad
- Test vivado build on autonomous mode
- Continue vivado documentation
- Get a working get ignore and push vivado build

Controls - Austin and Blake:

Summary for progress this report:

- Began work to implement state-feedback structure for LQR controller in Simulink model
- Continued to work on the manual assist mode

Pending Issues:

- Need to test manual assist with an actual controller

Plans for upcoming reporting period:

- Finish state-feedback structure
- Work with Jakub to incorporate existing controller into JSBSim

Testing - Peter and Jakub:

Summary for progress this report:

- Reviewed DataAnalysisTool files for dependencies (Peter)
- Hooked up the controls inside the simulator (Jake)

Pending Issues:

- Units and orientation issues in the simulator (Jake)

Plans for upcoming reporting period:

- Convert existing documentation to Markdown and add additional documentation for DataAnalysisTool (Peter)
- Look into launching DataAnalysisTool from ground station (Peter)
- Get remaining merge request completed (Peter)
- Correct units and orientations in the simulator controls (Jake)

Ground Station - Matt and Dane:

Summary for progress this report:

- Working on getting groundstation to be a access point (Dane)
 - Hostapd
- Working with esp chips on programming and updating documentation (Matt).
- Created issue 48 to work on esp chips (Matt).
- Created two programming setups, one using a circuit and the other uses an Arduino UNO (Matt).

Pending Issues:

- Waiting on communication for Eric to clear questions on current code base.

Plans for upcoming reporting period:

- Code review Wednesday, March 21st (Dane and Matt)
- Finish up code documentation for espes (Matt).
- Test both programming setups and create a more robust implementation for future team.

Name	Role	Contribution	Hours worked	Total
Peter Thedens	Repository Lead	Reviewed DataAnalysisTool files	3	104
Austin Rohlfing	Controls Lead	Studied controls and worked on Simulink model	6	135
Kyle Trost	Team Lead	vivado stuff	8	169
Matt Kelly	Documentation Lead	Worked with ESPs.	5	169
Dane Larson	Ground Station Lead	Worked on getting hostapd working	4	125
Jakub Hladik	Test Lead	Finished hooking up the controls in simulator.	8	118

Tyler Imboden	Quad Software Lead	finishing wiring for quad	14	132
Blake Pries	Communications Lead	Continued working on manual assist mode	3	89