**EE CprE SE 491 – MAY1732**

**MicroCART Senior Design Team**

**Weekly Report 6**

**10/10-10/16**

**Faculty Advisers**

Phillip Jones

Nicola Elia

|  |  |  |  |
| --- | --- | --- | --- |
| **Member** | **Position** | **Weekly Hours** | **Total Hours** |
| **Nick Robbins** | **Team Leader** | **9** | **43** |
| **Ben Nelson** | **Key Concept Holder** | **7** | **22.5** |
| **Jake Frazier-Flores** | **Webmaster** | **8** | **22.5** |
| **Grant Manley** | **Key Concept Holder** | **10** | **26** |
| **Chengrui Yang (Roy)** | **Key Concept Holder** | **4** | **15** |
| **Cole Beaulieu** | **Communicator** | **10.5** | **40.5** |
| **Tianxiang Shen (Jesse)** | **Key Concept Holder** | **4** | **14** |

**This Week’s Progress**

1. Quads/Camera System

* Installed and got clients working on computer, familiarized ourselves with them
* Flashed new firmware on a quad and was able to change its address
* Brainstormed ideas for a communication loop between quads and chatted with Elia on perhaps implementing CDMA or another form of division multiple access
* Narrowed down quad frame list to three frames and did payload calculations on them
* Tried to test motors and ESC on an older quad

1. Ground Station

* Documentation of groundstation code was uploaded to our groups google drive, has called and caller graphs for all the functions.
* Started implementing no ACK. Ran into problem with hangup.
* Started implementing addressing by changing setChannel to setAddress in eris\_vrpn for loop.

**Pending Issues**

1. Implementing No ACK
2. Deciding on a DMA protocol for communication with the quads
3. Learning to address the 6 different addresses of the quads
4. Testing old quads motors and ESC
5. Finalize Payload work and make decision

**Plan of Action**

1. Cole – Work with Jake on deciding on which DMA protocol we are going to implement in the comm stack. Find correct batteries to power motors and ESCs, and decide on a frame. Push Elia to order the expansion board so we can begin interfacing with that. Look through and finalize project plan.
2. Nick – Work on implementing addressing and removing ACK. Help Roy and Jesse with testing old quad. Finalize project plan
3. Jake – I plan to make and decision on which DMA we should implement for the project and begin it's implementation for a new communication stack
4. Grant – Continue work on documentations of design docs, work with Ben and Jake on new code design
5. Chengrui ­– Continue to test ESC’s and motors on older quad until we know if working or not
6. Tianxiang – Continue to test ESC’s and motors on older quad until we know if working or not
7. Ben – working on getting rid of ACK and making improvements to groundstation code

**Contributions**

Cole:

* Monday: 1 hour – meeting prep
* Tuesday: 3 hours - rtx rpx research , client interfacing, and emailed Elia about P.O. for expansion board, project plan
* Wednesday: 2 hours - Payload research, radio communication protocol research
* Thursday: 3.5 hours – discussed with Elia about CDMA radio communication, researched that, more payload document work
* Sunday 1 hr– weekly report

Nick:

* Monday 2 hrs - Meeting prep
* Tuesday: 3 hrs – Working on removing Ack
* Wednesday: 2 hrs – Working on removing Ack and Project Plan
* Thursday: 2 hrs – Working on changing Crazyflie to 1 channel (addressing).

Grant:

* Monday: 2 hours - I attended the team meeting and talked over different types of code
* Tuesday: 3 hours - worked on installing crazy fly software and installing firmware
* Wednesday: 4 hours - worked on project plan,worked on removing acknowledge bit, finished with crazy fly install
* Sundays 1 hour - inspected over project plan

Jake:

* Monday: 1 hour - I preped for the meeting. 4:15-5 I attended the team meeting.
* Tuesday: 2 hours - I worked on installing and running multi-crazyflie client
* Wednesday: 3 hours - I worked on running crazyflie multiclient and researched different division multiple access technics.
* Sunday: 2 hours - I worked on the project plan document and continued evaluating the different DMA options.

Ben:

* Monday: 2 hours- Group Meeting
* Tuesday: 3 hours - Removing ACK work
* Wednesday: 2 hours - libUSB research & looking into how python client handles comms.

Tianxiang Shen:

* Wednesday: 2 hours – tried to test the ESCs and motors on an older quad to see if we can use to test expansion board. Couldn’t figure out. Did research on it and will continue work until figured out with Roy.
* Thursday: 2 hours – tried to test the ESCs and motors on an older quad to see if we can use to test expansion board. Couldn’t figure out. Did research on it and will continue work until figured out with Roy.

Chengrui:

* Wednesday: 2 hours – tried to test the ESCs and motors on an older quad to see if we can use to test expansion board on. Couldn’t figure out. Did research on it and will continue work with Jesse
* Thursday: 2 hours – tried to test the ESCs and motors on an older quad to see if we can use to test expansion board. Couldn’t figure out. Did research on it and will continue work with Jesse.

**Meeting Minutes**

* Will be filled out on Monday and sent to the group via email.