**EE CprE SE 491 – MAY1732**

**Crazyflie Swarm Senior Design Team**

**Weekly Report 7**

**10/17-10/24**

**Faculty Advisers**

Phillip Jones

Nicola Elia

|  |  |  |  |
| --- | --- | --- | --- |
| **Member** | **Position** | **Weekly Hours** | **Total Hours** |
| **Nick Robbins** | **Team Leader** | **9** | **52** |
| **Ben Nelson** | **Key Concept Holder** | **10** | **32.5** |
| **Jake Frazier-Flores** | **Webmaster** | **8.5** | **31** |
| **Grant Manley** | **Key Concept Holder** | **8** | **34** |
| **Chengrui Yang (Roy)** | **Key Concept Holder** | **5.5** | **20.5** |
| **Cole Beaulieu** | **Communicator** | **10.5** | **51** |
| **Tianxiang Shen (Jesse)** | **Key Concept Holder** | **4.5** | **18.5** |

**This Week’s Progress**

1. Quads/Camera System

* Met with microcart to inquire about their wifi module
* Built a fixture to test wifi module
* Was able to flash firmware onto module and we are beginning to interface with it
* Implemented SoftAps on our personal laptops, to interface with the wifi module
* Tested motors and ESCs of old quad and they work

1. Ground Station

* Learned that crazyflie’s cannot perform tasks without ACK
* Made changes to the Cflib library to remove logging and allow for sending packets constantly
* Did experiments to determine the round trip time for packets (~18ms)

**Pending Issues**

1. What to do with the ACK problem?
2. How to integrate wifi module into our groundstation code
3. Waiting on expansion board, and bigger crazyflie components

**Plan of Action**

1. Cole – Work with Jake and Nick on communicating with the Wifi module, hopefully be able to start talking with the crazyflie by the end of the week. If parts for new big quad are in, start to assemble and work with them
2. Nick – Look into how socket programming works and how it can be implemented in the current Crazyflie code base.
3. Jake – Continue work on the Wifi module
4. Grant – help Cole, Jake, and Nick with implementing wifi mesh network
5. Chengrui ­– As long as the quads new parts are in, work with them
6. Tianxiang – As long as the quads new parts are in, work with them
7. Ben – help Cole, Jake, and Nick with implementing wifi mesh network

**Contributions**

Cole:

* Monday: 2 hour – meeting prep and meeting
* Tuesday: 1 hours - meet with microcart about wifi module
* Wednesday: 3 hours - Put together payload purchase order doc, researched wifi module and put together a testing fixture
* Thursday: 3.5 hours – began the process of trying to talk to the wifi mod, was able to start flashing capabilities and ran into errors with comm port on school comp, but didn’t have access to clean up comm ports. Started implementing on personal laptop but handed off to Jake and nick to complete.
* Sunday 1 hr– weekly report

Nick:

* Monday 2 hrs - Meeting prep
* Tuesday: 3 hrs – Microcart meeting
* Thursday: 4 hrs – Tested UDP on wifi module by sending packets through it to another computer

Grant:

* Monday: 1 hours - I attended the team meeting
* Tuesday: 2 hours - worked on removing ack
* Wednesday: 2 hours - worked on removing ack
* Thursday: 2 hours – worked on removing ack
* Sunday: 1 hour – research and realizing that ack cannot be removed

Jake:

* Monday: 2 hours - meeting prep and meeting
* Tuesday: 1 hours – met with microcart about wifi-module
* Wednesday: 2 hours – Researched wifi module
* Thursday: 3.5 hours – Implemented basic messaging between wifi-module and laptop

Ben:

* Monday: 2.5 hours- Group Meeting and making function call graphs
* Wednesday: 4 hours – removing ack (getting cflielib to run)
* Thursday: 2.5 hours - Removing ACK from cflielib
* Sunday: 1 hour – doing ACK experiments

Tianxiang Shen:

* Monday: 1 hour – group meeting
* Tuesday: 1 hour – review the testing instructions provided by Ian
* Wednesday: tested old quad motors and ESCs
* Thursday: 1.5 hours – read through example code for socket programming method

Chengrui:

* Monday: 1 hour – group meeting
* Tuesday: 2 hours - tested old quad and read documentation provided by Ian
* Wednesday: 2.5 hours – got all the motors and ESC’s to work

**Meeting Minutes**

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