**EE CprE SE 491 – MAY1732**

**Crazyflie Swarm Senior Design Team**

**Weekly Report 10**

**11/06-11/13**

**Faculty Advisers**

Phillip Jones

Nicola Elia

|  |  |  |  |
| --- | --- | --- | --- |
| **Member** | **Position** | **Weekly Hours** | **Total Hours** |
| **Nick Robbins** | **Team Leader** | **9** | **79.5** |
| **Ben Nelson** | **Key Concept Holder** | **8** | **54.25** |
| **Jake Frazier-Flores** | **Webmaster** | **4** | **50.75** |
| **Grant Manley** | **Key Concept Holder** | **6.5** | **57** |
| **Chengrui Yang (Roy)** | **Key Concept Holder** | **8** | **34.5** |
| **Cole Beaulieu** | **Communicator** | **8.5** | **76** |
| **Tianxiang Shen (Jesse)** | **Key Concept Holder** | **6** | **28.5** |

**This Week’s Progress**

1. Quads/Camera System

* Successfully connected to the big quad expansion deck and with that the wifi module, turned on, need to step down the voltage from the expansion board and mount it better

1. Ground Station/Radio Systems

* Working on making a version of the groundstation code that can send CRTP packets over our wifi modules
* Changed local groundstation code on Ben’s computer to be able to send out packets that are readable by wifi-module
* Deliverables of guides for future students, to be put into the wiki for, flashing firmware onto crazyflie and using the crazyflie client.

**Pending Issues**

1. Figure out how to step down, the voltage from the expansion board to the ESP module (5 to 3.3 V) voltage regulator.
2. Keep implementing the protocol of sending CRTP packets into the ground station so they can be transmitted
3. Figure out how to learn to fly the crazyflie client reliably so that we can fly the big quad. Otherwise we are going to need trackables to fly it

**Plan of Action**

1. Cole – continue working with the big quad expansion deck, by making it be recognized by ground station, and fix how wifi mod will be attached to crazyflie
2. Nick – Work on attaching orbs to big quad expansion deck to get a stable flight. Once stable, test the kp, kd, and ki values from provided thesis.
3. Jake – Edit firmware to be able to read in packet data that is received from the ground station via ESP
4. Grant – Continue to integrate code into groundstation into that can send CRTP packets
5. Chengrui ­– Continue on the camera setup and wireless charging setup
6. Tianxiang – learn how mesh network works and find a solution to camera set up
7. Ben – Continue to integrate code into groundstation into that can send CRTP packets

**Individual Contributions**

Cole:

* Monday: 2 hr – meeting prep and meeting
* Wednesday: 3.5 hours – fixed up big quad connections and go it so that the esc’s were more firmly connected with the big quad expansion board
* Sunday: 3 hours – got esp8266 hooked up to crazyflie and powered on, flashed new firmware on to big quad with updated coefficients for the PID

Nick:

* Monday 2 hours - Meeting prep
* Wednesday: 4 hours – Implementing new PID values relating to bigquad
* Thursday: 3 hours – Connected wifi module to crazyflie big quad expansion. Flashed new firmware from PID.

Grant:

* Monday: 30 min- group meeting
* Tuesday: 1 hour - website
* Wednesday: 2 hours - website
* Thursday: 1.5 hours – website
* Frieday: 1 hour - website
* Sunday: 30 min – talking with Ben on the wifi dongle and starting to research how to integrate radio communication over the mesh network

Jake:

* Monday: 2 hours - meeting prep and meeting
* Thursday: 2 hours – researched crazyflie firmware and how it interacts with radio dongle

Ben:

* Monday: 1 hour – Group meeting
* Saturday: 3.5 hours – Worked on creating guides and finished them. Started working on a making a version of the ground station that could send CRTP packets over the wifi module.
* Sunday: 3.5 hr – Modified the ground station to continuously send out packets every .1 seconds. Worked on getting the ground station to write packets to a serial port.

Tianxiang Shen:

* Monday: 1 hr - group meeting.
* Wednesday: 3 hr - research on the potential electronic system on quads, like camera system, Wireless charging, GPS
* Thursday: 1.5 hour - work on the website, fixed some bugs. And Grant also fixed them in his newest website version except the Weekly Report links still don't work. We fixed it on Saturday
* Sunday: 0.5 hour - get prepared for the presentation on wireless charging expansion board

Chengrui:

* Monday: 1 hour – group meeting

Tuesday: 2 hours – Camera setup for crazyflie

Wednesday: 2 hours – wireless charging expansion for Crazyflie

* Sunday: 3 hours – modify my plan for the camera and charging issue

**Meeting Minutes**

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