New Business:

New members were filled in on past work from summer semester. Drone flight practice days were discussed with Dr. Alberts and Dr. Mekky and are set to be on Mondays 1-5 (not every Monday).

Visual Odometry/RaspBerry Pi

Current Objective:

-Download and install OpenCV and ArUcu Libraries onto Pi

-Setup up PuTTy to run through Ethernet cord

-Get Trent up to speed with the Raspberry Pi and the sensors

Deadlines: 9/20

Problems/Issues:

-Issue with Project Pi with constant errors when trying to run openCV libraries

-Solution: Use Raspbian instead of NOOBS for Pi setup

Summary for this week:

We have installed the Aruco and Opencv libraries onto the raspberry pi as well as set up Putty so we can work on our laptops instead of using a monitor. We also got the pi to run using an Ethernet cable. Our future work will be to get everybody on the team on the same page for downloading the libraries and trying to run the code on the raspberry pi while using the pi camera. We will have to see how to get C++ on the raspberry pi and see how it will read the code.

PuTTy and VNC Viewer have been successfully installed onto one of the team member's laptops to operate the raspberry Pi without the need of an external display, keyboard and mouse.

Dead reckoning Team:

Current Tasks:

Research EKF implementation into IMU position code. Run tests on IMU to Figure out IMU Bias and drift.

Future Tasks:

Implement bias control on code as well as EKF

Deadlines:

Bias control Implemented by SEPT 30th (WORKING) EFK implemented by SEPT 30th, working by OCT 7th

Problems/Issues:

ERRORs trying to test IMU (EXTERNAL mode does not match the application you are trying to run on your target. Checksum test failed.)

Pi Integration/GPS:

Current Tasks: Connect GPS to Raspberry Pi

Accomplished Tasks:

Possible GPS control methods were discussed and a method involving routing through the Raspberry Pi was selected. Previous work on connecting a GPS module to the raspberry pi were reviewed and an implementation plan was outlined. A list of supplies and software was made for later acquisition and installation on the raspberry pi. It was discovered that the failsafes do not need to be disabled to turn off the GPS and maintain flight.

Deadlines:

Oct. 20th

Problems/Issues:

GPS failsafe can be disabled but requires manual control afterwards. Now we need to code the Raspberry Pi to have autonomous control. (SOLVED)

Questions:

How do we make the GPS signal readable to the Pi?

Setting up GPS on Raspberry Pi 3 B+
https://www.youtube.com/watch?v=A1zmhxcUOxw