Sightline Capstone Project Meeting

2 January 2019

* Discussed quadcopter proposal and reviewed BOM. Parts will be ordered and can be expected mid-January
* Discussed constrained flight for indoor testing. Possible resources are: Andrew Greenberg for ideas, and Don Mueller who is the facilities manager at Maseeh who would be able to recommend spaces available on campus for testing.
* Ideas to research for constrained flight

PVC pipes and netting

Replacing rotors with a pully system

Research other ideas that may work

* Discussed creating UAV club for PSU, Andrew Greenberg would also be a good resource here
* Discussed current hardware configuration and the configuration of the new hardware to be designed
* The FCC connectors are being removed from the current design because they will not be needed
* Board manufacturing and assembly will be outsourced and paid for by Sightline
* Sightline will provide new crimp tools if needed for Molex connectors
* Discussed current software and ideas for new software
* Pixhawk is open source software, changes may have been made that will affect project
* The software for the OEM is ARM based and was developed in Hood River
* Sightline will schedule a walk through of the code with Michael Allen who created it
* The debugging of the quadcopter tuning software is a place for improvement. The desire is to make this more user friendly/plug and play.
* Can we create a way to dynamically tune the quadcopter by simply adding new features to Q-ground control?
* Discussed the type of inputs for tuning
* Text files
* Direct serial
* Q-ground control
* SQL
* A general Q & A document was created by Jeremy and will be posted on Github
* Discussed researching how a visual sensor (OEM) will compare to other types of sensors
* IR Lock-sensors
* Ultra sound sensors
* Discussed Q-ground control
* Land detector configuration
* Precision landing
* Failure analysis of the system should be done before finalizing the design
* Safety analysis of the system should be done before finalizing the design
* What happens if the drone can’t find the target?
* What happens if a cable comes loose or unplugged?
* Discussed researching FCC regulations and if we will need permits for outdoor testing
* Discussed weekly reports
* Weekly reports should be uploaded to Github then an email should be sent to Roy and Jeremy with the hyperlink
* If weekly progress reports are from multiple people combine into one report
* Is there a way to get automatic notifications from Github?
* Discussed monthly/biweekly meeting times with Roy and Jeremy
* Jeremy would prefer the same time/same day once a month but can meet as often as needed
* Roy is on campus Mon-Thurs would prefer to meet Tues-Thurs
* Discussed project scheduling
* Gannt chart creation
* Task oriented schedules should be created with 1-week resolutions
* Take into consideration lead time for board fabrication, and other delays
* We should plan for a second integration of the project this means we should have the first prototype by the end of March
* “Begin with the end in mind!”
* We need to create an SOW (Statement of work)/PDS (Product design specifications) that shows we understand the requirements and deliverables of the project