

1 Goals for the Past Week

The following is a list of our goals for the past week, as well as descriptions of their completion and/or progress:

1. **Finalize and ratify the Opportunity Development artifacts**

The project contract v1.0 has been completed, and is ready to submit to our Capstone instructor for initial review. The rest of the Opportunity Development artifacts are to be completed within the next couple of days.

2. **Investigate a Ubiquiti data link upgrade**

We have tested the new Ubiquiti rocket left for us from last year's team, and have determined that it provides adequate performance.

3. **Have the entire team focusing on implementing a mock competition with last year's system**

With the exception of a couple of team members fine-tuning the Opportunity Development artifacts, all team members are working towards getting last year's system up in the air.

4. **Investigate better options for a camera lens**

As it turns out, the camera had a lens filter attached to it, which didn't allow it to focus on far-off objects. Appendix A illustrates a comparison of pixels per square inch (PPSI) for cameras of last year's teams. As the graphic shows, our camera setup falls on the low end of this spectrum. This is cause for looking into the matter more.

5. **Establish a wireless connection with the odroid computer**

We successfully completed this step, and even established a ROS network with the odroid communicating inertial data to a ground station on another machine.

6. **Modify the ground station to subscribe to raw images instead of compressed images**

After a little bit of research, we learned how to do this, but there are some minor hiccups which are currently being worked through. This will probably be completed by next week, but it's also not a super high priority at the moment.

2 Goals for the Coming Week

The following is a list of our goals for the coming week, as well as details about how we plan to accomplish them:

1. Finalize and ratify the Opportunity Development artifacts

This will be done in correspondence with our Capstone instructor.

2. Be ready to fly a mock competition (minus the camera) on Thursday of next week

Based on the progress we've made, we are confident that, through consolidation of what each team member has learned through tinkering, we will be able to get a fully functional system by next week.

3. Continue testing pixel resolution of our camera at large target distances

Please send us any feedback with regards to the progress we've made, as well as our plans for the coming week.

Appendices

A Camera Resolution Comparisons

Team	Aircraft	Camera	Resolution (MP)	Normalized PPSI @ 200 ft	PPSI @ Height	Lens	Gimbal				
1 Sherbrooke	Hexacopter	Sony Alpha A5100 mirrorless	24	1.5	2.0 @ 170 ft		Custom 2-axis		Listed auto classification techniques		
2 Flint Hill	Octocopter	Samsung NX500	28.2	4.6	1.5 @ 350 ft		Arria Zhaoyun 2-Axis Brushless Gimbal		Also list auto classification techniques		
3 Virginia Tech	Octocopter	Hawkeye Firefly 8s Wide Angle	12	1.1	2.0 @ 150 ft		Walkera G-2D Camera Gimbal				
4 Cornell	Fixed-Wing	IDS UL-3590LE (uEye)	18	7.6	7.6 @ 200 ft	8mm TAMRON M118FM08	2-Axis (custom?)				
5 Mukesh Patel	Hexacopter	Sony Alpha A5100	24.3		11.9 @ 77				Describe auto techniques		
6 UAV Austin	Plane	Sony Alpha a6000	24	6.5	2.7 @ 310 ft		Custom 1-axis		Onboard processing with TX2		
7 ITU/Non UAV	Hexacopter	Sony Alpha a6000	24				3-axis		Onboard processing with TX2		
8 Lagari	Plane	Sony FCB-IX 11 AP	2.3				2-axis		streamed as hd video, used a a6000 last year, only 0.4 hz with it		
9 BYU	Fixed-Wing	Basler Ace acA2500-60uc	5	1.1	1.1 @ 200 ft	Ricoh 12.5 mm C mount	None				
10 Ramaiah	Fixed-Wing	Nikon D3300	24	13.3	3.5 @ 390 ft	35mm Wide Angle Prime Lens	None				
11 Maryland	Fixed-Wing	Z-Cam E1	16	1.4	2.5 @ 150 ft	17mm focal length fixed					
12 Toronto	Fixed-Wing						None				