

Weekly Status Report 8

Quadcopter Cameraman

sdmay19-42

March 14 - March 26

Aamid Ahabab (Lead Engineer) & Client

Zhengdao Wang (Team Advisor)

Alex Nicklaus (Lead Test Engineer)

Isaac Holtkamp (Web Manager)

Nate Allen (Report Manager)

Luke Rohl (Meeting Facilitator)

This week's accomplishments

Summary

- Alex
 - Researched the possibility of changing output of Flight Controller to 50 Hz PWM
 - As far as I can tell Multiwii does not directly support this i.e. a configuration change in the conf.h file.
 - It may be possible through the Multiwii code but this will require modifying the sections of code which interface with the on board microcontroller's timers and registers. I suspect that this approach is doable as the board currently outputs at a higher frequency however what we'd gain from it would only save us about \$35 in ESCs. Also the time it would take could be better used somewhere else.
 - Dove into Flight Controller and Multiwii code
 - Confirmed that Flight Controller is physically capable of changing its output signal
 - Verified that the hardware is working
 - Confirmed that the output signal is 488 Hz utilizing PWM
 - The Mutliwii code is receiving the signal from the input pins and is capable of outputting signal it just has some portion of code that is currently setting the output to a minimum despite knowing what the incoming signal is.
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- Nate
 - Caught up with hardware team
 - Watched and read motor calibration tutorials
 - attempted calibration
 - Looked over data sheets
 - Found incompatibility issue
 - Debugged flight controller with Alex
 - Looked at configuration

- Looked at define statements
 - Played with code as part of debugging issues
- Luke
 - o None
- Isaac
- Aamid

Planned to accomplish next week

- Nate
 - o See if we can get flight controller to behave properly
 - o Determine angle of target from center of camera
 - o Establish mask change protocol for communication with Isaac
 - o Use android input over socket to change mask values
- Luke
 - o Complete the Software Flight Controller
 - Integrate with Communication Router
 - Create Methods for setting Roll, Pitch, Yaw, and Throttle.
 - Create instance variables for altitude?
- Alex
 - o To be decided contingent on group discussion
 - We have several possible routes to pursue
 - Continue with Multiwii code
 - o This path has all of the beneficial and possibly necessary features we need to safely fly
 - o Sunk cost fallacy
 - Attempt to write our own flight controller on the Pi (in python) or source one we can adapt
 - o No experience with this route; we'd be starting from scratch (risky going up to disastrous)
 - Attempt to use the KK2 flight controller
- Isaac
- Aamid

Roadblocks

- Flight Controller Issues - These two issues are independent. Both can be fixed separately
 - o Need compatible ESC
 - o Solve MultiWii issue.

Hours Spend

Team member	Hours This Week	Hours Total
Nate Allen	8	51

Alex Nicklaus	14	51
Luke Rohl	0	42
Mir Ahbab		
Isaac		22