

Weekly Status Report 7

Quadcopter Cameraman

sdmay19-42

March 6 - March 12

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
 - Flight Controller takes PWM and PPM signals in but outputs a different signal it looks serial and is much faster
 - <https://oscarliang.com/esc-firmware-protocols/>
 - We may need to configure multiwii to configure the ESCs
 - <https://youtu.be/BeY2CZioo8Y>
 - We can power the flight controller from the battery through the ESC
 - This is good because the Pi has trouble powering the Flight Controller when the ESCs are hooked up
 - The ESCs can run on a variety of different input signals we got ours to work with 1 to 2 ms PWM
 - We were able to spin up and control motors through the Pi using PWM
 - PWM settings were
 - Attempted to configure the ESCs using Multiwii's config however we were not able to get it to work
 - I'm worried that while we may have been able to get some of it to work we may have shot ourselves in the foot in the long run by configuring the ESCs to only work with PWM and nothing else. If this is the case and we cannot get the flight controller to output a PWM then we may have to control the quad purely from the Pi (not advisable) and all the work that went into the flight controller will be for not
 - <http://www.hobbywing.com/products/enpdf/SkywalkerV2.pdf>
- Nate
 - Socket comm with android app
 - Establish socket client
 - Send chunks of image over socket

- Write an image sending protocol to communicate with app
 - Wrote java to decode base64 string coming in as chunks of data
 - o Socket client
 - Write method to poll for data in socket
 - Non-blocking client receive
 - o Compiled data together of pixel width and analog width
 - o Derived equation for pixels to feet at varying distance
- Luke
 - o Research and create tutorial on pi-blaster
 - o Post Bluetooth tutorial
- Isaac
 - o Displayed image
 - o Receive and send messages and put them into a single string
- Aamid

Planned to accomplish next week

- Nate
 - 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
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- Alex
 - o Get flight controller to output 50Hz PWM
- Isaac
 - o Change image based on set parameters
- Aamid

Roadblocks

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Hours Spend

Team member	Hours This Week	Hours Total
Nate Allen	10	43
Alex Nicklaus	6	37
Luke Rohl	5	42
Mir Ahbab		
Isaac	4	32

