EE 491 Weekly Report 7

Date: 10-18-16 -- 10-24-16

Group Number: May1735

Project Title: Cy-Mote

Advisor: Dr. Daniels

Team Members:

Kyle Fischer - Team Lead

Michael Linthicum - Communications Lead

Daniel Shauger - Concept Holder Lead

Sam Neff - Webmaster

Nick Juelsgaard - Schedule and Planning Lead

Summary of the Week:

We continued to work on our individual parts of the project. We set a time for all of us to meet on Monday and worked for three hours, and we decided to add a weekly work time to our schedules. Now we are meeting once a week for an hour to discuss planning and problems and three hours for work time. We are still having some trouble with BLE interfacing, but we are making progress with SPI communication, buttons, and the joystick.

Past Week Accomplishments

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| --- | --- | --- | --- |
| Name | Accomplishments | Time worked | Cumulative Time |
| Kyle Fischer | Continued BLE studies. | 5  4 - work meeting  1 - Team meeting | 23 |
| Michael Linthicum | I continued to work on SPI communication between the MCU and the 9 degrees of freedom sensor.  Began working on UART communication between MCU and PC to help with debugging and verification of program results.  Read up on ASF functions for SPI and UART. Implemented them on my own program. | 8 | 29 |
| Daniel Shauger | Worked on interfacing the buttons and joystick with the MCU.  Button code is fully functional and needs to be uploaded. New buttons were selected but may be unnecessary.  Joystick is proving more difficult since reading the data involves use of the onboard ADC. | 4 | 20 |
| Sam Neff | Website version 1 completed  Website version 1 uploaded  Research on voltage switching vs regulation | 5 | 21 |
| Nick Juelsgaard | Research BLE dongle, calendar refinement, research pwr management chip, research PCB CAD software | 3.5 | 22 |

Pending Issues:

* Kyle Fischer - Still working on BLE. There has to be a trick to it, I just don’t understand BLE well enough.
* Michael Linthicum - Need to verify that I can read registers from SPI. Also need to verify that data can be read from the MCU and displayed on the PC. This is where the UART interface comes in.
* Daniel Shauger - Still working on ADC
* Sam Neff - Determine website version 2 requirements
* Nick Juelsgaard - Need to source pwr management chip soon, need to figure out PCB software soon

Comments and extended discussion

We are making progress. There aren’t too many updates because we are all individually working on our own parts. Once we get the “Hello World” functionality figured out we will work on putting all the pieces together and writing the wrapper program.

Plan for coming week

* Kyle Fischer - Research BLE on Linux systems. Trying BLE on our MCU isn’t working but trying it on Linux might teach me something.
* Michael Linthicum - Get UART communication figured out to verify that my SPI program is working as intended. Debug and read accelerometer data from the chip to the PC.
* Daniel Shauger - Work on ADC code, help other out as needed one accomplished
* Sam Neff - Meet with Nick and 1) Determine power management solution, 2) Review materials from previous EE group (design files, PCB software etc.)
* Nick Juelsgaard - Meet with Sam and 1) Look into pwr mangement chips, 2) Review materials from previous EE group, 3) Start working with PCB software. Also order a BLE dongle

Summary of weekly advisor meeting:

Daniels met with us during our regular team meeting. Dr. D gave feedback on our project plan. Didn’t meet outside of the team meeting with him this week.