EE 491 Weekly Report 11

Date: 3-27-17 -- 4-3-17

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:

Continued work on the board, wrapper, and BLE. Software team was able to pass accelerometer data to a computer through BLE from the ATSAMB11 and calculate meaningful values from it. Hardware team worked on the third iteration of the PCB. Some errors were found and fixed, we are confident in this iteration. It will probably be our last iteration regardless.

Past Week Accomplishments

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| --- | --- | --- | --- |
| Name | Accomplishments | Time worked | Cumulative Time |
| Kyle Fischer | Ran out of memory because I was still creating everything to initialize BLE in both ways. Deleted old way and now it works. | 8 | 55 |
| Michael Linthicum | Implemented bit banged arduino code for accelerometer and gyroscope. Verified calculations worked for these pieces of code. Tested accelerometer calculation on the ATSAMB11 through bluetooth. | 5 | 50 |
| Daniel Shauger | Implemented Michael’s calculation into wrapper, research on whether BLE was a good choice for polling - internet says no; research on connection intervals | 6 | 38 |
| Sam Neff | Sick :( Missed the major work night. Nick is a champ. Looked over end of the year requirements to make sure we were on track. Not much to do after the work night. | 1 | 50 |
| Nick Juelsgaard | Assembled the new boards. Getting much better at soldering and reflowing. The power rail was working like a charm, and the battery charge circuit was great. We could download code to the ATSAMB. However, I missed the clock when i designed the board, so it won’t work even a little.  Spent most of one night this week redesigning the board once again. Also added more lights and a breakout pin header for all the extra I/O. | 16 | 82.5 |

Pending Issues:

* Kyle Fischer - can pass dummy data but it is slow. Gotta speed it up.
* Michael Linthicum - None.
* Daniel Shauger - A lot of data is pointing towards BLE not being fast enough for our needs
* Sam Neff - 3rd iteration coming soon
* Nick Juelsgaard - No clock on the board

Comments and extended discussion

Plan for coming week

* Kyle Fischer - Try getting notify to work. Pack data into as few characteristics as possible. Use 2 bytes instead of 5 chars for a number.
* Michael Linthicum - Extend arduino code to cover the magnetometer as well. Port this code to the ATSAMB11.
* Daniel Shauger - Work on trying to find how to set connection intervals on either client or server side
* Sam Neff - Start work on poster/presentation
* Nick Juelsgaard - Start working on the final report document

Summary of weekly advisor meeting:

No meeting