EE 491 WEEKLY REPORT 5 2/20/16

Group number: DEC1620
Project title: Miniature Tracking FOB
Client & Advisor: Flagger Pros USA, Advisor Nathan Neihart
Team Members/Role: Tristan Walters – Team Leader
David (DC) Carlson – Team Communication Leader
Brandon Trent – Secondary Team Lead
David Dalo – Key Concept Holder
Alex (Sunny) Sundholm – Secondary Communication Lead
Tyler Dahle – Team Webmaster

Weekly Summary

We had no meetings with the client, due to his being away. We had our regularly scheduled advisor meeting this Friday, February 19. We worked individually for most of the week to narrow down candidate components for our prototype build. Alex, Tristan, and Tyler met on Wednesday the 17th to work on the project plan. The advisor meeting was very productive this week, and our next goal should be to start to compile all of our findings and see how they fit together.

Past week accomplishments

- Project Plan completed
- Found candidate parts
  - Microcontroller
  - GPS Module
  - Cell connection header
  - Battery type

Pending issues

- SIM Cards
  - Client side, contact Verizon
- Microcontrollers
  - "Waking it up" from low power mode to conserve power
- Cell network connection
- Power draw from all components
  - 175 mA for cell chipset
  - 20 mA for GPS module
  - Microcontroller clock

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Individual contributions

Name	Individual Contributions	Hours this week	Cumulative hours
Tristan Walters	Attended group and advisor meetings, helped complete Project Plan first draft	5	15
David Carlson	Attended advisor meeting, researched GPS chipsets, found candidate	7	13
Alex Sundholm	Attended group and advisor meetings, did research on microcontroller low power libraries	6	17
Brandon Trent	Attended advisor meeting, researched cellular chips and integration, contacted Verizon (took a long time), completed project timeline	11	22
Tyler Dahle	Attended group and advisor meetings, helped complete project plan first draft, began identifying needs of mobile app and database	8	17
David Dalo	Attended advisor meeting, found candidate microcontroller	2	11

Comments and extended discussion

On track from last week we came to our meeting with Nathan with candidate components. Our next task is to see how the specs of each fit together so we can have some standardization when it comes to input and output. The fewer the voltage regulators the better. The project plan was our main concern when we met on Saturday the 20th. We needed to make sure it was done moving forward.

It should be noted that of the four times we met this week, David Dalo has been present for only one. He has been aware that we have met but has not shown up.

Plan for coming week

- Finalize parts to get ready to order
- Get information from Verizon
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Summary of weekly advisor meeting

Email client and see if they can get us a sim card from Verizon for testing. Might be able to use the GPS to wake up the microcontroller. Once we narrow things down, figure out if it is necessary to shut it completely down or keep it in sleep mode. Do we actually save power if we keep it in a sleep mode with very low constant power use or is it better to turn it off and deal with startup power draw levels. Make sure everything uses the same voltage levels; 3.3V is probably the best option. Assume that David's microcontroller is the one.

Tristan/Tyler - Look into what Linkers are to store variables on different parts of the microcontroller. Need to have a good set of documentation.

Tristan/Tyler - Have device ID written into nonvolatile memory on the microcontroller. That will ping the server and the server sends it the next available device ID, if it is the first time the device pings the server.

David - look for a breakout board for the microcontroller.