EE/CprE/SE 491 Weekly Report *MAY1622 Week III*

Date (9/14/15-9/21/15)

Advisors: Daji Qiao
Client: Halil Ceylan
Co-Advisor: Christofer Sheafe ()
Members (roles):
Shen Fu (Team Leader)
Matt Rose (Team Communication Leader)
Qichen Yan (Team Webmaster)
Darnell Melvin (Team Key Concept Holder)

Project Title: Wireless Embedded Roadway Health Monitoring

Meeting notes

- If we could get the sensor node down to the size of a fitbit, that would be ideal
- The hub may also have a sensor on it, and we need to optimize the size of the hub as well
- We need to decide on a real number in regards to how much smaller the enclosure should be
- Battery should last at least a year
- Diameter should get as close to 1 or 2 inches as possible.
- Enclosure should be resistant to alkalinity/harsh conditions
- The duty cycle for taking data should be configurable and defaulted to 30 minutes (or whatever is best for battery life)
- As a group working on our project plan, we need to differentiate between functional requirements and design specifications.
- Need a draft of conceptual sketch (Microsoft Visual?)
- Start researching parts and order new parts as needed
- Allow for on-demand data transmission from any node to the hub, by command of the hub
- Only send data if sensor reading differs from the last one, discard otherwise
- Use MultiSim for initial board design
- Set up website on iastate server

9/18/2015 Group Meeting with Advisors

Duration: 1 Hour
Members Present: *All*
Purpose and Goals:

The team presented our rough draft of our functional requirements and design specifications to our advisors. Daji and Chris had much to say, stressing that our functional requirements and design specs should be separate from each other. Daji asked for a conceptual sketch.

Weekly Summary

This week, our team received valuable feedback from Daji and Chris on our rough draft of the project plan. Team members did research on their own to become even more familiar with the previous project.

Pending issues

None

Plans for next week

Next week the team plans on researching the required circuit elements (microcontroller, real-time clock, etc) to see if there is a smaller/more battery efficient option, in that order. We are going to start rearranging the circuit for optimal size in Multisim after we ask Chris for the digital design file. Qichen is drafting a sketch of the system decomposition. The team is polishing its functional requirements and design specifications.

Budget

N/A

Next Meeting

9/28/2015 4:00 PM, COOVER TLA