

EE 492 Progress Report **MAY15-23** **Period 6 (4/6/15-4/19/15)**

Advisors: Daji Qiao

Client: Halil Ceylan

Members (roles): Brandon Wachtel, Tyler Fish (Team Communicators)

Mitch Balke (Team Leader)

Brandon Maier, Johnnie Weaver (Web Masters)

Trieu Nguyen, Christofer Sheafe (Key Concept Holders)

Project Title: Wireless Embedded Roadway Health Monitoring

Period Summary

During this period, we have finished designing the PCBs that include the charging circuitry. We are waiting for the PCBs and the components to come in. We have begun testing with concrete and parts have been ordered to create our final prototypes. As a group, we created and finalized the poster design and submitted it for review. Work has started on updating and finalizing the documentation for the project.

4/6 Group Meeting with Advisors

Duration: 1 Hour

Members Present: All

Purpose and Goals:

The purpose of this meeting was to show the printed enclosure to our advisers so that they have a better idea of what we will be implementing as our final design. We discussed different ways to expose the sensor to concrete. There are still some bugs in the communication software that need to be fixed. Discussed the state of the charging testing and the efficiencies that we are seeing. We need to have a detailed testing procedure finished for the following week for the Civil engineering group.

Meeting Notes:

Showed enclosure to advisers
Discussed exposure methods
Might delay communications testing
Still need to work on bugs within the communications software
Charging efficiencies are low
Test oscilloscope charging using a 10x or 100x probe
Talked about current charging efficiencies and measurements
Detailed testing procedure for next week

3/30 Group Meeting with Advisors

Duration: 45 Minutes

Members Present: All

Purpose and Goals:

The purpose of this meeting was to show our current design of our poster to our advisers and receive some feedback on what they think we should add/remove from the current design. We told our advisers the date and time of our final presentation as well as the time when we will be demonstrating our project in Coover. Finally, we told our advisers that the sensor that was given to us stopped working and that we have ordered new sensors with better communications protocols that should be coming in relatively soon.

Meeting Notes:

Include power output in packets being sent
Concrete testing Thursday at 2pm
Need more sensors
PCBs and components will be in next week
Enclosures will be here Wednesday
We present Wednesday, April 29 from 11:20 – 11:50am
Demo Wednesday, April 29 from 3 – 5pm
Make changes to Poster design
Meeting this week to finish poster and work on documentation
Rent a camera as well as macro lens from communication services

Finalize concrete testing plan before Thursday
Net Monday, meet in Senior Design Lab

Pending Issues

Still having troubles with receiving packets during communications
We still need to finish the design document
Solder PCBs when they come in
Acquire last of our testing results
Touch up our presentation

Plans for Seventh Period

Mitch Balke – Solder PCBs when we receive the parts, work on communications as well
Tyler Fish – Build enclosures when they are finished being printed, work on enclosure documentation
Brandon Wachtel – Documentation for the charging circuitry, testing the charging chip
Brandon Maier – Work on base station, base station communication
Johnnie Weaver – Work on charging circuitry and finalize testing results for charging coils
Trieu Nguyen – Work on charging circuitry and finalize testing results for charging coils
Chris Sheafe – Work on base station design
Everyone – Work on updating and finalizing documentation for the project

Individual Contributions (This Period)

Johnnie Weaver: Attended advisor meetings (1.75hr),
attended group meetings (5hr), worked on
wireless power transmission (2hr), worked on poster
draft (3hr), helped with initial concrete testing
(1.75hr), worked on documentation (9hr)

Brandon Wachtel: Attended advisor meetings (1.75hr),
attended group meetings (4.25hr), worked on
documentation (7hr), worked on block diagrams
and design for charging circuitry (2hr), wrote
progress report (0.5hr)

Tyler Fish: Attended advisor meetings (1.75hr), attended
group meetings (5hr), helped with initial concrete
testing (1.75hr), worked on documentation (6.25hr),
worked on poster design (1.5hr), 3-D printing and
design of enclosures (2.5hr), wrote progress report
(1hr)

Mitch Balke: Attended advisor meetings (1.75hr), attended
group meetings (3hr), helped with initial concrete
testing (1.75hr), worked on documentation (4hr),
worked on concrete software (3hr), worked on
multi-hop communication (4hr)

Brandon Maier: Attended advisor meetings (1.75hr),
attended group meetings (2hr), helped with initial
concrete testing (1.75hr), worked on documentation
(5hr)

Trieu Nguyen: Attended advisor meetings (1.75hr), attended
group meetings (5hr), worked on wireless power
transmission (2hr), worked on design documentation
(7hr)

Christofer Sheafe: Attended advisor meetings (1.75hr),
attended group meetings (2.25hr), worked on poster
and block diagrams (2hr), worked on final
documentation (6hr)

Total Contributions (This Period)

Johnnie Weaver: 22.5 Hours
Brandon Wachtel: 15.5 Hours
Tyler Fish: 19.75 Hours
Mitch Balke: 17.5 Hours
Brandon Maier: 10.5 Hours
Trieu Nguyen: 15.75 Hours
Christofer Sheafe: 12 Hours

Total Contributions to Project

Johnnie Weaver: 137.25 Hours
Brandon Wachtel: 124.25 Hours
Tyler Fish: 129.75 Hours
Mitch Balke: 128.5 Hours
Brandon Maier: 106.25 Hours
Trieu Nguyen: 110 Hours
Christofer Sheafe: 83.5 Hours