

EE 491 Weekly Report MAY15-23 Week 5 (9/29/14-10/5/14)

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

Weekly Summary

Drafted and reviewed our Design Plan. Worked in our small groups on our assigned parts of the project. Planned to wear suits to take photos for our website during the next advisor meeting. During our advisor meeting, our advisors reviewed our timeline/design plan and made small changes to it but overall were satisfied. Ordered and received microcontroller samples from TI.

Meeting notes:

Changes to Design Plan Document:

1. Page 2, degrees C to degrees F
2. Page 4, Measurement Equipment; add power consumption
Implement rerouting and power save when a node is almost dead
3. Page 5, change physical danger to burn from soldering iron
4. Software design on Gant chart should be longer

1 time a month we should transmit how much battery life is left in each node

Look into transceiver board schematics for components to purchase for transceiver testing

Check out Linear Tech for RF charging

9/19/14 Group Meeting with Advisors

Duration: 45 minutes

Members Present: All

Purpose and Goals:

Draft our first version of our Design Plan and have it reviewed by our advisors. Give an update to our advisors about how the project is going. Gave tentative goals for what we are going to accomplish individually and in our small groups. Notified our advisors that we will be taking photos for the website and invited them to join us.

Pending issues

The preferred frequencies are within occupied band ranges and we need to find a new band range to use. We cannot find antennas for the open band ranges that are closest to our preferred range.

Plans for next week

Mitch: order parts for transceivers and continue tinkering with chips

Brandon M: continue working on networking algorithms

Brandon W, Trieu, Johnny: continue looking into batteries and begin designing power systems

Chris and Tyler: Begin working on antenna design and RLC circuit conceptualization

Individual Contributions (this week)

Johnnie Weaver: Attended group meeting (1.5hr), Attended advisor meeting (0.75hr), researched batteries, transceivers, and made battery excel doc (2hr), worked on typing up our design document before group meeting (1hr)

Brandon Wachtel: Attended group meeting (1.5hr), attended advisor meeting (0.75hr), watching videos and

researching lithium ion charging circuits (1hr),
wrote weekly summary (0.5hr)

Tyler Fish: Attended group meeting (1.5hr), attended
advisor meeting (0.75hr), researched RF charging
circuits and antenna design (2hr), wrote weekly
summary (0.5hr)

Mitch Balke: Attended group meeting (1.5hr), attended
advisor meeting (0.75hr), tested sampled
components to become familiar with MSP430
platform and its low power modes (3hr)

Brandon Maier: Attended group meeting (1.5hr), attended
advisor meeting (0.75hr), researched WSN (4hr),
worked on WSN design (1hr)

Trieu Nguyen: Attended group meeting (1.5hr), attended
advisor meeting (0.75hr), researched RF energy
harvesting receiver and batteries and worked on
acquiring sample RF receiver for testing (4hr),
worked on Design Plan document before group
meeting (1hr)

Christofer Sheafe: Attended group meeting (1hr), attended
advisor meeting (0.75hr), researched and began
designing RLC circuits (1hr)

Total weekly contributions (this week) for the project

Johnnie Weaver: 5.25 Hours

Brandon Wachtel: 3.75 Hours

Tyler Fish: 4.75 Hours

Mitch Balke: 5.25 Hour

Brandon Maier: 7.25 Hour

Trieu Nguyen: 7.25 Hour

Christofer Sheafe: 2.5 Hour

Total contributions for the project

Johnnie Weaver: 15.75 Hours

Brandon Wachtel: 15.75 Hours

Tyler Fish: 15.75 Hours

Mitch Balke: 20.25 Hours

Brandon Maier: 15 Hours

Trieu Nguyen: 13.75 Hours

Christofer Sheafe: 11 Hours

Added 2 hours each to Brandon Wachtel and Tyler Fish for
writing weekly reports for the past 4 weeks.