

Team sddec20-06
EE 492
14 September 2020
Batteryless, Encapsulated Hydrometer

Bi-weekly Status Report #1 [B1]

Individual Contributions:

Name	Contributions to the team	Hours Worked for the Week	Total Cumulative Hours
Tilden Chen	Orientation Detection	8	18
Josh Hall	Base Station Software	10	20
Jensen Mayes	Mechanical Prototype Work	8	18
Chris McGrory	Mechanical Simulation Model	10	20
Griffin Orr	Schematic Design/PCB Layout	12	22
Chris Pedersen	Orientation and Code Development	10	20

Summary:

In the past week we have started to make some progress on the major tasks that need to be done. We have all been working on various things with some of the main highlights being that we were able to get started on the PCB layout and were able to receive BLE Beacon signals from the Thunderboard Sense 2 which has a chipset the same as what our custom board will use.

Individual Contributions

- Griffin Orr
 - Over the past few weeks I have ordered the parts to begin testing in the lab and started the PCB layout. I am still working out the dimensions of the board with the team in charge of designing the capsule and will likely need to make modifications to the initial layout.
- Chris McGrory
 - In the past week I have been looking into the web develop portion of our design. This will be used to display the information that we output from our device for the user to analyze from any mobile device. This is still in the early stages of development and still requires further research.
- Josh Hall

- I have got the base station receiving beacons from a beacon generator on my phone. I will be adding more implementation to that as well as coordinating with Chris about creating the web server.
- Christopher Pedersen
 - I have been working on the code for orientation and looking at the Thunderboard Sense 2.0 as well as the necessary calculations. Tilden and I will be working together to get the board ready for testing.
- Jensen Mayes
 - I This past week I was testing the bluetooth example code and some orientation code on the development board I have to get a working orientation output that I can read from my phone.
- Tilden Chen
 - I have been looking through the Thunderboard Sense 2's programs to try to figure out where the IMU values are calculated and outputted. I have also been looking into beacon transmission.

Pending Issues:

- Getting access to the needed lab equipment (Reflow oven)
- Determining how to continue project process with limited in person contact

Plans for Next Week:

- Verify Kinematic Equations for finding tilt angle.
- Figure out Equipment Access abilities
- Test the PVC Mock-Up Platform in a container of some sort to determine how it reacts
- Begin adding symbols for the energy harvesting module to the schematic