

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

Bi-weekly Status Report #3 [B3]

Individual Contributions:

Name	Contributions to the team	Hours Worked for the Week	Total Cumulative Hours
Tilden Chen	Orientation Detection	8	26
Josh Hall	Base Station Software	6	26
Jensen Mayes	Mechanical Prototype Work	10	28
Chris McGrory	Web Server Development	8	28
Griffin Orr	Schematic Design/PCB Layout	8	30
Chris Pedersen	Orientation and Code Development	10	30

Summary:

In the past week we have been working on our different subtasks. In the mechanical aspect, we were able to get an initial 3D printed case printed off for further improvements and prototyping. The PCB is also nearing completion so that we will be able to get it printed. Additionally, we have started making progress on the web server and data receiving setup. Lastly, the test code on the Thunderbird is making good progress for being able to test in the coming weeks so that it is ready for once the PCB is assembled.

Individual Contributions

- Griffin Orr
 - Over the past few weeks I have finished the initial layout and intend to order the PCBs early this week. Ideally, this could be assembled and testing could begin in as early as 3 weeks from now. In the meantime, I have a development board I would like to assemble and begin testing prior to receiving an actual board.
- Chris McGrory
 - In the past week I have been looking into building a python web server with flask on a Rasbery Pi. This web server will be able to react to dynamic content so that we can output the sensor data from the device. This week I will walk through a couple of tutorials using my personal Rasbery Pi and report my findings to the team in our weekly meeting.

- Josh Hall
 - I added some extra implementations to the Beacon code. I need to coordinate with Chris on the web server implementation so the Beacon RX code can communicate with 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 still. I have identified where the orientation is stored and packaged for transmission but I am not sure where in the code it is actually transmitted.
- Jensen Mayes
 - I was able to get access to a 3D printer, so I tested a couple prints on it and printed off an initial test housing for putting in the feather module I've been using for prototyping. This will allow me to modify the design to accommodate our final PCB once it is finished. I am learning how to properly design in CAD for making them able to effectively be printed.
- Tilden Chen
 - This past week I worked with Chris and looked at the board code some more. Next step is building and testing the code on the controller to verify that it does what we think it does.

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
- 3D print a new version of the CAD housing
 - Parametrize the model for given board dimensions
- Begin adding symbols for the energy harvesting module to the schematic