

EE/CprE/SE/CybE 492 Period Report

2/11/20 - 2/25/20

Group number: sdmay20-53

Project title: Smart Backpack Sprayer for Small-scale Agriculture Applications

Client &/Advisor: Tim Andersen, Taylor Greiner, and Daji Qiao

Team Members/Role: Madison Kriege, Sean Doran, Kevin Davis, David Hayes, Shuangquan Li, Donald Laracuenta

Period Summary

During the past two weeks, the group has successfully completed the first implementation of our prototype. The group has been able to successfully connect the different hardware components to each other and the hardware is now able to successfully send and receive data to the application. As of now the group will be going forward with the current implementation and iterate on it for the march demo date.

Past Period Accomplishments

During the past period the group has accomplished 2 major things:

- The group was able to successfully send data between the hardware and the software components. More work needs to be able to use data in a more desirable way (goal for the next 2 weeks).
- Completed PCB design to supplement Arduino. Finalized design to allow individual components to be connected in an efficient manner. More work is needed to design if we want to include circuitry to take power from the backpack battery to the Arduino (in which case we could include this to the same PCB). So, holding off on ordering PCB until that decision has been made. This will likely be completed in the next 2 weeks.

Pending Issues

- Parsing of data in iOS app/sending data in a proper way - to make data more useful.

Individual Contributions

Name	Individual Contributions	Hours this period	Hours cumulative

Madison Kriege	Rebuilt the profile page after debugging, working to add sync and stay logged in functionality	18	42
Sean Doran	Worked on the continued implementation of Mapping Features.	16	40
David Hayes	Working on the PCB board. Also working on getting the Bluetooth to work properly with the iOS device. I have been working with the iOS team to properly get the data from Arduino.	15	39
Kevin Davis	Assisted with Bluetooth debugging and integrating hw/sw. Also worked more on finalizing PCB (considered what may need to be added to the PCB, thus hasn't been ordered yet)	15	39
Shuangquan Li	Worked on the BLE integration, implemented communication functions between mobile app and hardware; implemented data sending and receiving functions; implemented data presentation layer; bug fixes for git repo.	18	42
Donald Laracuenta	Worked on design documentation to complete missing sections and get it ready for submitting at the end of the semester. I also worked on some of the coding for the backend.	15	39

Plans for Upcoming Period

The group's plan for the upcoming two week period is to work on and improve how to app parses the data it is receiving. The group also plans to finalize and make a decision on the PCB that will be used to

help organize the hardware. Some members will also be working on updating and filling out the design document. The group as a whole will be presenting a demo to our advisor on 2/27.

Summary of Advisor Meeting

The groups initially had a demo meeting scheduled for 2/20. The advisor canceled and rescheduled to 2/27.