EE/CprE/SE/CybE 492 Period Report 3/12/2020 - 4/2/2020

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 Laracuente

Period Summary

Note the 3 week period; this is a result of Spring Break falling within this period. Sub-teams continued to work on the different project components. All together, the team discussed the changes due to COVID-19's impact on the rest of the spring semester and began making a plan for how to proceed with the current deliverables. The team spoke with the client and submitted a list outlining the current status of the program as well as foreseen issues coming up. The client will review this document and adjust the deliverables as needed.

Past Period Accomplishments

Over the last period, the team has been working hard to get a prototype of the backpack sprayer put together. The clients have sent the sprayer bag that they would like used, the PCB has been ordered, and the hardware team is continuing to put the elements together. The API team has continued to work on the Mapbox API setup to produce better graphs for the end user. Similarly, the iOS team has been continuing on with the profile page changes and has created a beta app that can be downloaded to the client's or team member's phones. This has allowed for better testing and will hopefully make the transition online easier for the team.

Pending Issues

With the change to online instruction, there are currently several different components the team is working through changing. Without being able to meet as a group, testing the different sections of the project has become difficult and field testing is no longer an option. Additionally, the uncertainty of when the PCB will come in has caused some challenges in wiring and the adapters need to connect with the backpack. Finally, the Arduino that is currently being used is too large for the backpack, and a smaller one may need to be purchased instead.

Individual Contributions

Name	Individual Contributions	Hours this period	Hours cumulative
Madison Kriege	Implemented the Stay Logged In functionality on the profile page, continued testing different data stored in User Defaults	23	82
Sean Doran	Worked on better data processing for Mapbox and Firebase. Looked into more efficient mapping from Mapbox.	25	81
David Hayes	Received the backpack to start working on a prototype. Trying to figure out how to test because we are trying to avoid being in physical groups.	26	83
Kevin Davis	Finalized PCB design and double checked design - to ensure dimensions, pin routing, etc. Worked with ETG to properly export all files and get the board ordered.	25	81
Shuangquan Li	Worked on implementing local data storage, data model, implemented test/beta version of the app, and distributed it to Testflight.	25	87
Donald Laracuente	Updated the possible deliverables that will be delivered at the end of this semester after the changes due to COVID-19. Will be updating documentation to reflect these changes.	25	81

Plans for Upcoming Period

The goal for the upcoming period for this team is to communicate with our clients and advisor in an attempt to outline the rest of the semester. This will include potentially changing deliverables, timelines, and other components of the project. The team will work on figuring out a testing solution for the project (hardware with software). Further, the team will discuss and make decisions regarding the hardware during these tests, and if any changes are necessary (wiring, battery, Arduino, PCB, etc.), they will be evaluated as they arise. In general, the team will be flexible and adapting as the structure of the semester shifts and changes are flowed down from the course.

Summary of Advisor Meeting

Due to the circumstances, the team was not able to meet at the normal time. The team will continue to communicate with the advisor to ensure deliverables are adapted accordingly.