EE / CprE / SE 491

Project title: Small-Form-Factor Solar-Powered Self-Sustainable IoT Sensors with

Long-Range Wireless Communication

November 17 - December 8

Group number: 7

Client &/Advisor: Dr. Cheng Huang and Dr. Meng Lu

Team Members and roles:

Calvin Condo - LoRa Module

Qin Xia - Sensors

Chuxin Chen - Arduino / Sensors

Lun Zhang - LoRa Wireless module/Arduino

Yuchen Zhao - LoRa Wireless module/Arduino

Luke Healy- Arduino/Sensors

Previous Week

During the last week, we found out that we needed to implement a different light sensor than what we were testing with, so we had to order different light sensors. We also updated the schematic of our prototype to match the new specifications of the project such as smaller scale and with four of the new light sensors.

Weekly Summary

Design Document:

As the semester is coming to a close, we realized that we still had a lot to add to our design document. We spent some time filling out all of the sections and creating Gantt charts and diagrams for the document. We met with one of the TAs who reviewed the work that we have done on the Design Document and she suggested that we add more details in certain sections and work on the formatting. The formatting errors turned out to be present because we were working on google docs and when the TA downloaded it to Word, the formatting was not the same. We still have more details to add and proofreading to do on the document though.

Presentation Preparation:

Since the presentation is what determines most of our grade for the class, we have been adding more to our presentation. The template given to us has helped in streamlining what to include and what not to include in the presentation. We are practicing the presentation in front of Dr. Huang to make sure we are meeting all of the criteria.

End of Semester Prototype:

We really want to have a prototype to show during our presentation, so we are working on building a prototype that will successfully transmit data from sensors and send it wirelessly to a receiver. This is the main functionality of our project, so we think that if we can show that we have this feature complete, it will show the amount of work that we put in during the semester and hopefully surprise our graders.

Pending Issues:

We have not been working too much on the technical issues on our project, as we have been focusing on completing the end of semester assignments assigned to us, therefore most of the same pending issues from the previous week are still present. This includes increasing the range of our LoRa module and testing to see if our light sensors can pick up the bioluminescence of the bacteria we are trying to measure. These issues will have to be addressed in the next semester.

Team Contributions

Team Member	Contribution	Hours this Period
Calvin Condo	Design document & prototype	17
Chuxin Chen	Presentation prep	14
Qin Xia	Presentation prep,weekly report	14
Yuchen Zhao	Presentation prep	14
Lun Zhang	Presentation prep	14

| Luke Healy | Design document, Weekly reports, Presentation prep | 14 |