EE/CprE/SE 492 – Bi-Weeky Status Report

Summer – 09/10/2021

Group sddec21-proj07

Beaglebone Green Gateway IoT Hub

Client: Texas Instruments

Faculty Advisor: Nathan Neihart

Members:

Parker Larsen – Hardware design, Communications Lead

Taylor Weil – Software design, Meetings Scribe

Sean Griffen – Software design, Documentations Lead

Sterling Hulling – Hardware design, Meetings Scribe

Period Summary:

Both sides of out project continued previous semester tasks, for hardware that was finishing the design of our main board and getting parts ordered, and for software that was continuing testing code and working through example projects using the demo devices we were provided. Specifically:

Hardware:

During the summer and the first couple weeks of the semester, the hardware team finished up the remainder of the schematic and worked through a couple revs of the layout. We have also ordered and received the parts for the first board, so we make sure that we don't run into any part shortage issues later in the semester. Our goal for this week is to review and hopefully order the first board and start working on the schematic of the second board while we are waiting for the first board to arrive.

Software:

During the summer, the software team continued working through example projects using the demo devices provided by Texas Instruments. During the first couple weeks of the semester, they created an overall communications diagram and flowchart detailing what each component of the project will do and how they communicate with each other.

Pending Issues:

Hardware:

First revision of the main board is still under review and hasn't been sent out for manufacturing. This is the priority from a hardware standpoint and has been an ongoing process from last semester.

Software:

Now that the overall software architecture has been defined, work can be done on the component software. UART communication between the Beaglebone and the cape "works" but needs revision, and basic Zigbee communication has been challenging. The goal for this week is to get these two communication standards working.

Goals:

Hardware:

Objective is to get the first revision of the main board done sent out for manufacturing and start work on another board while the first revision is being manufactured.

Software:

Goal is to get UART and Zigbee communication standards working between the Beaglebone, the cape, and the data devices.

Member Contributions:

Name	Contributions	Period Hours	Cumulative Hours (F21)
Parker Larsen	- Attended required meetings - Met with software to discuss hardware architecture - Met with advisor to get feedback on board layout design - Continued work on main project PCB	17	17
Taylor Weil	- Attended Meetings - Met with hardware to discuss software design and architecture - Updated Trello board with tasks to complete	10	10
Sean Griffen	- Attended required meetings - Met with hardware numerous times to discuss software design and philosophy - Updated Trello board with tasks to complete and project outline	10	10
Sterling Hulling	- Attended required meetings - Took notes for said meetings	4	4

Advisor Meeting Summary

Discussed progress over the summer and went over software design plans. Specifically, discussed how components would communicate between each other, how the Beaglebone would collect and store data if not on a WiFi network, and what the frontend application would look like for viewing live data.