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

10/25/2021 – 11/05/2021

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:

Hardware:

- Completed testing the ZigBee cape

- Completed the second revision of the ZigBee Cape. Board and parts will be ordered tomorrow

- Completed the switchboard schematic and layout. Board and parts will be ordered tomorrow morning

- Completed the Relayboard schematic and layout. Board and parts will be ordered.

Software:

- We were able to program our new cape board with a zigbee sample project and connect another device to its network. (took lots of debugging)
- Able to read light sensor data from the sensor tag using a sample project
- Begun a final project to build off of

Pending Issues:

Hardware:

- No pending issues

Software:

- Need to combine sensor data into a zigbee project
- Need to resolve UART issue on rev 1
- Need to complete communication loop between Beaglebone, Cape, and end-device

Goals:

Hardware:

- Order, assemble, test and complete the documentation for the switchboard and the second revision of the ZigBee cape

- Order, assemble, test and complete the documentation for the relayboard.

Software:

- Complete communication loop between Beaglebone, cape, and end-devices
- Configure end-devices to collect sensor data and send at a constant rate configurable by the beaglebone
- Get demo server and frontend setup

Member Contributions:

Name	Contributions	Period Hours	Cumulative Hours (F21)
Parker Larsen	- Attended required meetings - Assembled the Zigbee Cape - Met with team to program and debug board - Corrected errors on the Zigbee Cape - Completed switch board - Helped review the relay board	15	85
Taylor Weil	- Attended required meetings - Met with team to program and debug cape	15	60
Sean Griffen	- Attended required meetings - Worked on integrating beaglebone uart with Zigbee project - Worked with hardware to debug issues with zigbee network on cape	15	45
Sterling Hulling	- Attended required meetings - Completed relay board	10	29

Advisor Meeting Summaries

Meeting 1:

N/A

Meeting 2:

We spent time with our advisor discussing our issues involving Zigbee and how we are going move forward with our project. We explained our problem using block diagrams and got an idea of how to move forward.