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

11/08/2021 – 11/19/2021

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:

- Ordered switchboard, relay board and the second revision of the Zigbee Cape. Boards should come in during Thanksgiving Break

Software:

- Got communication between zigbee end-devices and beaglebone working
- Started substantial work on final demo and documentation

Pending Issues:

Hardware:

- None

Software:

- Communication from the beaglebone to the cape is not yet working
- Data packets sent from end-devices to the cape are not standardized

Goals:

Hardware:

- Assemble boards

- Work with the Software group to bring up boards

- Complete documentation

Software:

- Standardize communication format/data packets being sent from all connected devices (beaglebone, cape, and zigbee end-devices)
- Get a final demo prepared
- Work on software/firmware documentation
- Prepare work to be open sourced

Member Contributions:

Name	Contributions	Period Hours	Cumulative Hours (F21)
Parker Larsen	• Attended required meetings • Completed and ordered switchboard and second rev of the ZigBee Cape	15	100
Taylor Weil	• Attended required meetings • Worked on collecting sensor information from sensor tags and sending that over the zigbee network to the cape • Started work on a common communication format between beaglebone, cape, and end-devices	15	75
Sean Griffen	• Attended required meetings • Completed cape firmware to get data from a zigbee end-device and communicate with the beaglebone • Completed beaglebone firmware to communicate to the cape • Got a local web server running, preparing for the final project demo • Worked on round-trip communication format between beaglebone, cape, and end-devices	20	65
Sterling Hulling	• Attended required meetings • Completed and ordered relay board rev 1 • Completed documentation for relay board	12	41

Advisor Meeting Summaries

Meeting 1:

N/A

Meeting 2:

Demoed working communication between zigbee end-devices and beaglebone.