**University of Pittsburgh**

**Department of Electrical and Computer Engineering**

**ECE 1896: Senior Design Project – Spring 2019**

**Milestone Checkoff Form**

**Project Title: Home Position-Based Automated Lighting System (PALS)**

**Overall team goals to be accomplished during the evaluation period**

* Improve functionality of backend Data Structures and commence integration with HTTP protocol and distance algorithm.
* Create a setup process for users to connect to the bridge and organize lights/rooms.
* Generate the required data needed for the distance algorithm.
* In general, complete basic functionality of all components delivered in the previous checkoff.

**Team Member #1**

**Jarod Vickers**

**Deliverable / Demonstration for this checkoff cycle**

* Design UI/method for simplified setup of house and room structure
* Add functionality for WIFI access point and light locations
* Create improved logic for IoT HTTP request sending (room proximity logic)
* Design circulation algorithm to convert 3 distances to a coordinate
* Perform integration testing for the above components

**Team Member #2**

**Jiacong(Peter) Liu**

**Deliverable / Demonstration for this checkoff cycle**

* Write script/software for Raspberry Pi zero to automatically generate file containing available Wi-Fi routers’ status and information
* Improve the server-client software written last time. Able to send the file over to the server.
* Add file processing code on server side to extract Wi-Fi router information

**Team Member #3**

**Buka Agbim**

**Deliverable / Demonstration for this checkoff cycle**

* Create a method using the distance algorithm to take in formatted wifi signal data and return distance between a single router and the Raspberry Pi
* Automate the entire distance calculation process outside of initial reference measurement.
* Demonstrate the distance algorithm can approximate the distance between the Raspberry Pi and a router in the room.

**Team Member #4**

**Andrew Tran**

**Deliverable / Demonstration for this checkoff cycle**

* Design a function that will establish a connection between the server and the Philips Hue Bridge. This includes generating a username to allow the user to control the bridge and load in any existing rooms/lights saved by the bridge.
* Show that light and group state can be set by using the Philips Hue Light API.
* If possible, will show the setup process in the lab (requires an ethernet connection to a router).
* If live setup is not possible, will show a video recording of the above functionality.