Weekly Status Report 5

Dates: 2/25/2018 - 3/10/2018 Group Number: sddec18-02

Project Title: Steam Heat Controller Retrofit

Client/Advisor: Lee Harker

Team Members - Role

Sarah Coffey - Reporting Lead Ken Wendt - Webmaster Liz Wickham-Kolstad - Design Lead Jevay Aggarwal - Technical Lead Joe Filbert - Client Lead Thomas Devens - Planning Lead

Summary

We have identified several issues with our current design and are working to find fixes. This includes our choice of communication protocol for the thermostat and some limitations in the manufacturing of the motor mount. Our research has also included how to drive the motor with the Raspberry Pi. We began looking for alternatives and identifying the core requirements of the project that must be met with each part of the system through these redesign efforts.

Pending Issues

Determine the protocol for communication between the thermostat and valve controller.

Going Forward

Sarah, Liz, Jevay, and Thomas: Finish researching the thermostat microcontroller and give Joe the parts list for the thermostat. Continue temperature data collection.

Joe and Ken: Finalize the motor mount redesign with Lee and give Lee the design to be manufactured. Continue research on driving the motor with the Raspberry Pi.

Individual Contributions

Name	Contribution	Hours Worked	Total Hours
Sarah	Helped the hardware team research Raspberry Pi motor drivers. Identified alternatives for the thermostat microcontrollers.	7.5	37.5
Ken	Assisted in the redesign of the motor mount for manufacturing.	5	34.5

Liz	Selected the screen type for the thermostat and researched energy consumption on the microcontrollers.	8	40
Jevay	Determined the button type for the thermostat and created the circuitry for implementation with the microcontroller.	7	35
Joe	Redesigned the motor mount according to Lee's feedback on the manufacturing process. Validated the compatibility with H-bridges and the motor.	8	40
Thomas	Continued research on the Raspberry Pi as a server and authentication with ISU.	5.5	27.5

Meeting with Client/Advisor

Made us aware of the extra power consumption of an LED interface; we are now looking at ways to reduce the consumption of the display further.

Gantt Chart Status

