Progress Report

for Automatic Window Controller

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Introduction

This document will outline our progress, expenditure, remediation, and future plan for the Automatic window controller (AWC). The proof of concept model is currently in the final stages of construction and software integration. Our project consists of three parts: gliding window, awning window, and curtains. Each part has its own hardware and software components. We have been testing and modifying our proof of concept model and we expect it to be completed on schedule.

Schedule

We realised that our original schedule shown in our proposal was unrealistic so we created a new one which is shown in the Gantt chart below:
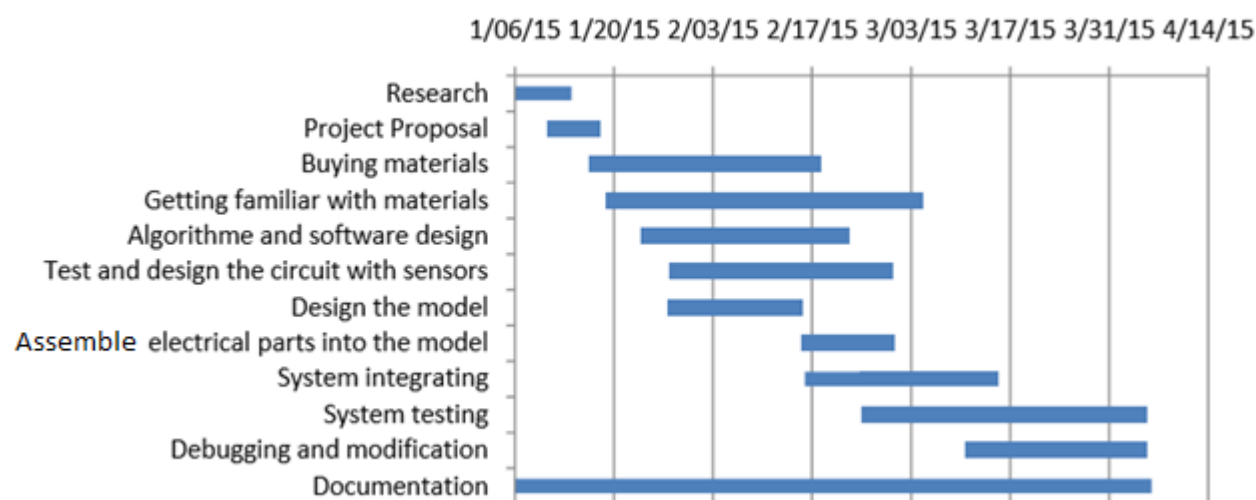

Figure 1: Gantt Chart of Schedule.

As we made progress we made some rearrangements to the schedule, however the time given to complete each part hasn't changed. The "Algorithm and software design" portion was moved below "Assemble electrical parts into the model". We are currently on schedule.

Finances

So far, we have spent 90% of our funding to purchase all the software and hardware parts. We are funded by IEEE for $600. The model cost is expected to be around $150 to build the prototype house that contains our project. During the procedure, we have burned out a driver and a temperature sensor. We will minimize the mistakes we have done to ensure the remaining $58.22 is enough to cover for the unforeseen expenses in the future.

Circuit Cost	$ 394.52
Model Cost	$ 147.26
Total Cost	$ 541.78
Funding	$ 600.00
% Spent	90.2%
Left	$ 58.22

Hardware Progress

Components	Completed	Incomplete
Gears	• Mechanism has been designed and constructed successfully. • Dimensions for gear and rack calculated to work with dimensions of windows and model house.	• None
Circuit	• Schematic of system designed to fit the prototype. • Power requirements for motors, microcontroller, and sensors are determined. • Connections for motors, motor drivers, sensors, and microcontroller. • LCD interface • Switch to set temperature	• None
Model House with Window and Curtains (The motors and circuit are not yet placed into the model because we need them for testing our code)	• Bought materials, made calculations of dimensions, and constructed the model. • Designed and constructed windows and curtains. • Integrated both windows into the house.	• Integrate curtains

Software Progress

Components	Completed	Incomplete
Sensors	• Code for all sensors to detect environmental changes	• None
Gliding Window	• Code for window to operate with all sensors	• None
Awning Window	• Code of window to operate with gas and rain sensor	• Code for window to operate with temperature sensor
Curtains	• Code for curtain to operate with gas and rain sensor	• Code for curtain to operate with temperature and photo sensor
LCD Screen and Temperature switch	• None	• Code to display current temperature on LCD and set temperature limit

Conclusion

We have already completed 80% of the all project currently. Also, all the members of Smart Windows have made a lot of effort and progress to this project. We were behind the schedule since the problems of gear on March. Now, we are almost on the schedule because we figured out the problems. Therefore, we expect to finish this project and prototype before April 22, 2015. Also, we will be prepared to present our product.