



Progress Report

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1 Introduction

At TechAuto, we aim to integrate automation into human daily activities. By introducing the Cart-Follow-X1, we will provide users with a hands free experience while transporting cargo. Cart-Follow-X1 is powered by two 150 watt DC motors and utilizes four ultrasonic sensors to track user position. With the two operation modes, "Follow" and "Assist", the user can choose between having the cart automatically following behind or take full manual control with motor power assistance. This document will outline the current stage of the development of the project, and also the remaining tasks to be completed.

2 Schedule

According to our Gantt chart that was constructed in our proposal, the development of the Cart-Follow-X1 is right on schedule. Currently, TechAuto is in the progress of the final testing and debugging of the cart's "Follow" mode. We expect to have a working prototype by the first week of April. As highlighted in green, Figure 1 shows the current schedule in relation to the original development schedule of Cart-Follow-X1.

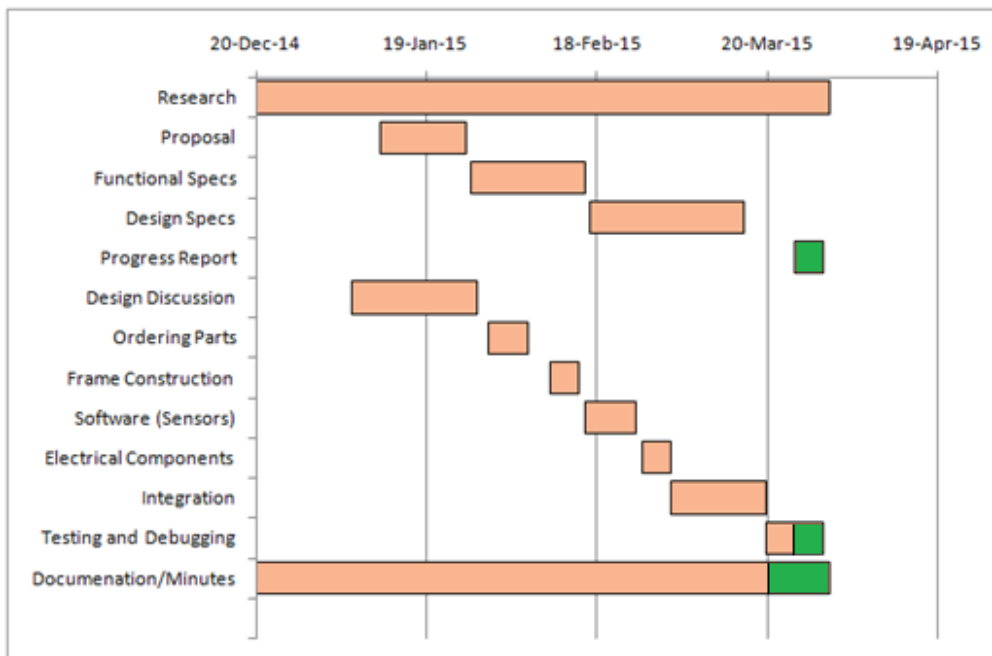


Figure 1. Proposed Schedule (Beige) vs Current Schedule (Green)

3 Finances

The source of funding for our Cart-Follow-X1 project is through the ESSEF and its sponsors, which they have generously provided \$750.00 for our project. The current expenses as of today is \$906.23, which is still within our budget of \$915.00. However, we expect to exceed this amount by around \$50.00 when we finish our prototype in the following week. The remaining expenses of the project will be split evenly among the team members of TechAuto Inc.

4 Progress

The control system is currently going through various tests to achieve the desired results. The “Assist” mode is fully operational and works as intended. The “Follow” mode still requires further testing and fine tuning. The module is able to follow the user; however, adjustments need to be made to improve the accuracy of the tracking system as well as the rotational speed of the motors to achieve acceptable moving speeds.

The mechanical system integration have just been completed. All circuits have been soldered onto perfboards and all components have been mounted onto the cart. However, wiring still needs further modification to give the cart a cleaner look before the demo.

5 Conclusion

The Cart-Follow-X1 is currently under final testing and debugging. Although we are right on schedule and our system is nearly complete, we believe there is still a lot to be done before the prototype is ready for demo. Our project is funded through ESSEF as well as contribution from each team member. We expect to be able to complete our project to meet the remaining deadlines as well as be ready to demonstrate our product on April 9, 2015.