April7, 2013

Team 19 Enhanced Prototype Document

**Laboratory # 7 : Enhanced Prototype**

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***Work Product***

**This document describes the goals and schedule for the enhanced prototype. This prototype will be focused on implementing keyboard functionality and the sensors.**

***Document Revision Information***

**April 12, 2013 – Document created, includes initial tests**

**Approval Sheet**

**All group members whose names are listed below approve of the document and contributed fairly.**

**Morgan, Laura**

**Miaw, Jireh**

**Hauser, Steven**

**Dworak, Catherine**

**Bertoglio, David**

**Pledge**

**On my honor, as a student, I have neither given nor received unauthorized aid on this assignment.**

**Morgan, Laura**

**Miaw, Jireh**

**Hauser, Steven**

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# Prototype Goals

The purpose of this prototype is to enhance the basic functionality of the end-to-end prototype. This prototype is focused on movement using the keyboards, using sensors, and sending and receiving ACKs.

Our part of the prototype is to control the movement of the robot and creating a basic GUI for the debugger, while group 20 is responsible for the GUI and sending the movement commands to the robot.

Goals:

Achieve keyboard functionality for controlling movement

Implement sensors

Display sensor data

Send ACKs

Receive ACKs

# Integration Test

## Preparation

Team 19 prepared code to make sure that the robot responds to the commands given to it by the GUI in the correct way. This included setting up the robot so that it would take in messages and respond to it as it should. We were also responsible for developing the debugger and showing the user what the robot is capable of doing.

### Milestones

Move robot while key is pressed until key is released

Display light sensor

Display ultrasonic sensor

Display sound sensor

Display touch sensor

Send ACK

Receive ACK

### Test Schedule

Individual teams write required code: Monday April 1 – Sunday, March 14

Group meetings:

Sunday, April 7 at 4:00 pm

Friday, April 12 at 1:00 pm

Sunday, April 9 at 1:30 pm

Meet with partner team: Sunday, April 7 at 4:00 pm

Perform Integration test (Teams 19 and 20): Sunday, April 7 at 4:00 pm

Document test results: Friday, April 12

Initially, the test was scheduled to be performed on Sunday, March 24, but our partner team was not yet prepared for the test, so the schedule was updated to a give both teams more time to finish their code for the tests. All dates and times in the updates schedule were met.

### What we expect from group 20

We expect team 20 to a GUI that implements keyboard functionality. There should be 4 buttons simulating the w-a-s-d keys on the keyboard. When these keys are pressed the robot should move until the key is released.

## Realization

Date and Time:

We met with our partner group on Sunday, April 7 at 4 p.m.

Participants:

Team 19: Laura, David, Jireh, Catherine, Steven

Team 20: Tyler, Archit

### Results

The robot can now successfully send an acknowledgement.

Instead of having buttons on the interface, team 20 implemented key presses on the keyboard for initiating movement. When “w” was pressed the robot moved forward until “c” was pressed. When “s” was pressed, the robot moved backward until “c” was pressed. When “a” and “d” were pressed, the robot turned left/right 90%.

The only sensor that was implemented was the touch sensor.