**Beta Demo Review Document**

**Project:** ECSE211 Design Project – Capture the Flag

**Task:** Construct an autonomous robot that can play one-on-one version of the game Capture the Flag

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1. **Purpose**

The Beta Demo was put in place so that both the clients and the team could see the concrete progress made to-date under conditions similar to what will be used during the final competition. The clients will then be able to see if the claims regarding the work done so far by the team can be validated. The team will receive feedback and understand what to improve prior to the final competition.

1. **Requirements**

The robot is expected to be able to do the following when placed in any of the corners of the 8 by 8 floor:

1. Localize
2. Navigate to the zip line
3. Connect to the zip line
4. Cross the zip line and dismount
5. Navigate to a specified location
6. Stop when it arrives at the location

In addition, the provided wi-fi class must be integrated into the design as the input parameters are transmitted via wi-fi.

1. **Qualitative Results**

The robot did not perform ultrasonic localization correctly and thus, was unable to complete any of the other tasks. It beeped to signify that it had detected the presence of walls but proceeded to turn to the wrong angle and ended up running into a wall immediately. In addition, the following behaviour should be noted:

* There were several “jerks” during the course of the run (one wheel would stop or start before the other)
* There was interesting behaviour that could likely be attributed to a thread crash

1. **Actions to be Taken**

* Check for bugs in the Ultrasonic Localization class (based on previous tests in the *Localization Testing Document*, the failure was likely due to a missed detection of the wall); In addition, lower the placement of the ultrasonic sensor
* Review and refine the light localization logic
* Look for what is causing the spontaneous lack of synchronization of the motors
* Remove unnecessary threads