

Team Name: sdmay21-40

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Report Period: Oct 19-Nov 1

Summary of Progress in this Period

During this period, we finished our 2nd version of our Design Document. Weekly meetings on October 20th and 27th were held as usual, discussing our Design Doc and project progress. The geometric modelling of the CyBot platform was completed and the collision model was verified. Primitive implementations of the servo motor and LiDAR distance sensor were made with updates to come in the next period. A potential issue was found with the dimensions of the LiDAR Mini distance sensor that we intend to use. The sensor has a 36mm spacing between the mounting screws, while the CyBot sensor head bracket has screw holes spaced 37mm apart. Additionally, the sensor head block on the LiDAR Mini appears to be shaped slightly differently from the hole in the sensor head bracket. This issue could potentially be resolved with some sort of drop-in bracket spacing adapter, but may require a new acrylic plate to be made in the final hardware implementation stage.

Individually, members completed the Signal Acquisition/Noise and Intellectual Property Protection Talk Awareness assignments. Additionally, the group met to co-op the collaborative portion of the Engineering Standards Reflection.

Pending Issues

WeBots does not seem to model sensors and motor components in the way we initially thought. Rather than modelling them similar to a memory map, they appear to abstract them to a simple lookup table for data readings and actuator settings. This will take some more investigation to integrate into the final simulation.

Plans for Upcoming Reporting Period

For the next period, the simulated model will continue to be developed. With geometric modelling finished, the platform controller code can be modified to incorporate the motion of the sensor head and distance readings being taken from the simulated LiDAR Mini. Additional research will be conducted into how the modelling of the robot platform components can be realized in the controller code. In the final simulated model, these two components will allow the follower robot to direct the distance sensor to specific areas of the test arena and perform distance measurements to detect and follow the lead robot.

Work on the final presentation for the faculty panel will begin, along with the development of the 3rd revision for the Design Document. Regular weekly meetings will be held on the 3rd and 10th of November to discuss progress on the model, Design Document, and final presentation. The team website will be finalized for release. Lastly, the Container and Cloud Talk Awareness assignment will be completed by all group members.
