ECE Senior Design Weekly Report

Engineer’s Name: Jake Jabbora Date: 4/20/17

Team Name: The Globetrotters Lab Section: 4

Week’s Task: Find a good way to set up the hall effect sensors so they will not move at all. This will allow our values to remain consistent. Test the new set-up to ensure it is working as expected. In addition, I began to finalize the budget report since the project is coming to a close. Find soft iron core.

Results: This past week we decided to implement our hall effect sensors onto a PCB board so the hall effect sensors won’t move. The hall effect sensors are very sensitive so any slight movement will skew the results by a huge factor. Keeping them in the same location will ensure the PIC24 gets the correct information to process and send back to the H-bridge with the required current to keep the globe in the air. We mapped out the expected values and displacements in order to find the appropriate transfer function to implement into our code.

Additionally, I looked up better cores to use for our coils. Going with soft iron core will increase our magnetic field while keeping the power consumption the same. This way we can maximize the efficiency of the coils we have. <https://www.xump.com/science/Soft-Iron-Rod.cfm?SID=12&gclid=CKqU3Ny8sdMCFRBEfgodOiEKUA>

Since we only have about two weeks left I decided to finalize the budget for our project. We started with $1500. As of right now we have a little less than $100 dollars. This price includes extra parts and research for our project. The final model will cost around $500 with the parts we ordered.