Michael O’Connor

Team G: Bobs the Builders

Teammates: Christian Heaney-Secord, Eric Newhall, Guillermo Cirde

ILR 7 – System Demonstration

April 2, 2015

Individual Progress

System Demonstration:

For this week's system demonstration I worked to redesign the wire feeder and wire cutter systems. These systems did not function properly when originally fabricated last week. We had an issue with the wire becoming kinked as it was being cut because of the large displacement of the head of the bolt cutters when they were actuated. I resolved this issue by mounting the head of the bolt cutters onto our frame directly and changing the arrangement of our motor so it would pull both handles together rather than just pulling on one handle (Figure 1). I also remade parts of the wire feeder system to allow the wire to align properly (Figure 2). The other system I worked on this was the part re-orienter system. I created a rough mockup of a potential solution and used this to further develop my team's idea of how we can implement this.

Website:

I have made sure to update sections of the website as I have worked on different parts of the project.

Challenges and Issues

Our team was able to resolve several issues that we faced last week. We are currently having issues with ensuring repeatability with our wire cutter system. Although we are attempting to utilize the encoder information on our DC motor we were unable to get the motor to actuate and return to its initial position, a function that is crucial to our ability to consistently cut the wire. We also faced issues with the preliminary design of our part feeder system. While the rough mockup allowed us to actually see our ideas in action, it did show a few shortcoming to our design that need to be reconsidered.

Cross-Referencing with Teammates

Christian focused mainly on the integration of our revolver and wire placer system while I worked on the wire feeder and cutter system.

Eric and Guillermo wrote the program to allow all of our different subsystems to work together and also have cleaned up the wiring of our system considerably.

Figures

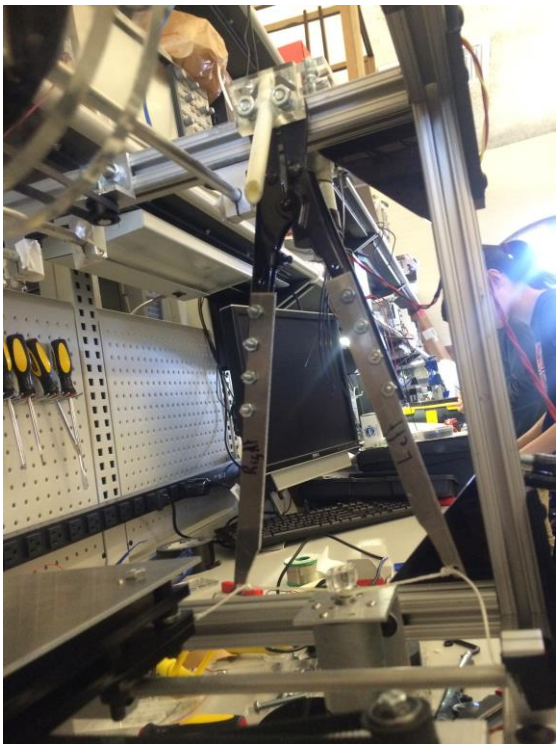

Figure 1: View of bolt cutters mounted directly to frame with extended arms

Figure 2: Top view of wire feeder and wire cutter

Plans for Following Week

My plan for next week is to develop our part sorter system as well as our part flipper system and integrate them with our camera. This will allow us to feed parts into our system and for all of their orientations to be identified and re-oriented.