RC Group Report

We were charged with acquiring a remote controller for the car and programming the Arduino on the car to work with that controller. We did not immediately purchase any of the candidate controllers we selected for two reasons. First, the card with funds would withdraw $5 per month after the first purchase, and no other group was ready to purchase components; we wanted to be sure that the $5-monthly charges would not prevent us from purchasing any other components for the project. Second, another team member had some old RC toys that we were planning on cannibalizing for their controllers and receivers.

In February, the other groups were finalizing their purchases, so we began the process of cannibalizing the RC toys—specifically, an RC boat and helicopter—for components. In the process, we learned that plastic is quite difficult to cut, plastic glues can be tricky to remove, and that RC toy manufacturers embed their receivers onto the controller boards of their products, thus rendering them useless for our purposes. So, we purchased a controller that shipped with a receiver.

When the controller arrived, we learned that it would function without needing to program the Arduino. Instead, we would hook up a steering servo, the two driving motors, and the power source to the receiver and it would send the necessary information to the motors and steering servo. Unfortunately, the receiver does not send information directly to the motors. Instead, it sends information to an Electric Speed Controller, which then sends information to the motors. The ESC, however, would not work with the motors we had; it required motors which used wires of a significantly higher gauge. Additionally, the ESC required a proprietary programming card—which was out of stock—in order to be set up, and a power source which used a proprietary connector.

Thus, we reached a dilemma. Either, we can purchase nearly $100 of components that *might* work, but would allow us to remotely control the car, as originally planned, or we could continue with the original plan involving the Arduino, but surrender the ability to control the car. After conferring with the entire team, we decided not to speculate on purchasing components that might work, and instead incorporate Android programming into the learning experience. That said, we are still contemplating using different technologies to remotely control the car. Unfortunately, since there is little time remaining until the presentation of the result, these may or may not be able to be implemented before we must present our work.