

## **Sprint #2 - Requirement 16**

In order to implement steering by wire control for our golf cart, we have decided to utilize a linear actuator over a DC motor. Through our research, we discovered that it would be difficult to obtain a motor with enough power capable of moving the whole steering column. Even if we did obtain such a motor, there would be the major issue of the motor not being able to be overpowered by the user of the system. This means there would be no manual override capability in regards to steering. In addition, we were unable to find a direct method of attaching the motor to the steering column. These issues led us to look further into the usage of a linear actuator for this implementation.

The biggest issue we originally found with linear actuators was that they are not capable of back driving. This means that the only way to reverse the motion of the actuator is through the device itself; it cannot be forcibly pushed back. As a result of this, there would be no manual override capability for steering. In order to address this, we will have to take out the steering column and have the linear actuator directly control the wheels. We will still have an option for the user to override the by-wire steering by having an electronic controller that the user can interact with.