Work Package Write-Up

Currently, the hardware that is being used is working, but still needs to be reviewed. This will list some of the tasks we will look over.  
  
 1) Testing the Magnetometer  
 a) The sensor is outputting a value, but after testing it by pulling a car back and forth, there was inconsistent value output (not a consistent value range, but a negative and positive spike with a return to the baseline value) that questioned our initial expectations. This is most likely a knowledge gap of what we should expect (ferrous [steel] chasis, non-ferrous [aluminum] body and engine, non metal parts, and possible EMF emitting parts [alternator?]) when a vehicle passes over.  
 2) Testing the Time of Flight sensor  
 a) The sensor works as expected, but this is without a cover. Currently, the cover is thicker than 1mm and that is currently causing a fidelity issue (not reaching 1.3 meters). There is a possibility of mitigating the cross-talk noise by creating a physical spacer to limit the noise due to the clear cover.  
 3) Analyzing energy consumption  
 a) We have not analyze this since the package isn’t working as expected. There is an observation of using 5V for the sensors to expand the resolution and sensitivity. This will definitely impact energy consumption, but are not sure what the extent is.  
 4) Downsizing Package  
 a) We are testing with no regard to package size right now. This will change once the first 3 tasks above are met and we can focus on choosing a proper housing to pack the electronics and battery. There is a chance of looking at solar panels, but will be based on the type of battery used (rechargeable or non- rechargeable).