Team Introduction

My name is Antonio Foster and I am an electrical Engineering major. Today we are here to present the Paintball Environment Tactical Engagement Recon System, otherwise known as PETERS.

Outline

Okay, to start off we will talk a little bit about the problem statement and the solution that we are proposing. We will take a look at the electrical schematics involved in the design of the system and the standards that PETERS must adhere to. We will go over the team member contributions, as well as the testing and validation results. Then we will finish with a brief discussion about the societal impact of the PETERS project, and take a quick look at the budget. Following the presentation will be a short video that will give a great overview of the project as a whole and includes a live demonstration of the system in use. Now Ken will get us started with the problem statement.

Testing & Validation – Unit Testing

For Testing and Validating the Pressure Sensor which will collect data on the amount of air available in the users compressed air tank we took complete sets of data from a full tank, all the way to an empty tank with the sensor mounted in multiple locations to see which set of data best fit our needs. In addition to this we compared certain key points of data to values on an analog gauge. Key points being a full tank, and data points around when the pressure in the tank drops below the operating pressure of the marker to make sure the data was consistent with what we know to be true. A battery drain test was also completed on the assembly which yielded a batter life above 35 hours. During testing we also found a small issue with the battery we were using, this particular battery had a feature that stops the battery output if the draw is below 50mA for a duration of about 5 seconds, we were able to avoid this problem by adding an LED to signify when power is on. The LED added enough draw to the circuit to avoid the battery shutting down.