

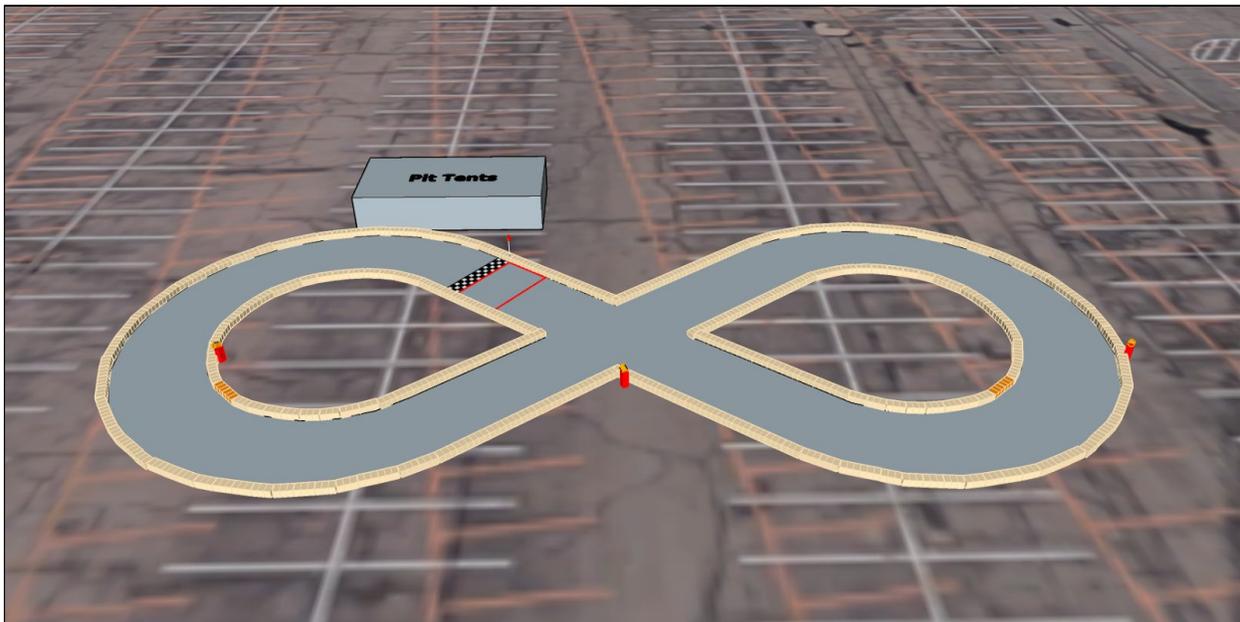
## SparkFun Autonomous Vehicle Competition 2017

### Autonomous Car Wars – Rules v1.0

#### 1. Overview (aka The Autonomous San Jose Commuters Challenge)

- 1.1. It's the new age of transportation, and you don't drive so much anymore; you're just a leaf in the wind. Your job is to create a vehicle that will transport you safely to your working destination without accident and without any input from you. Armed only with a Nerf gun and a Grande Latte, can you get there in time? You've got a big presentation this morning...

#### 2. Track Information



- 2.1. The track is a figure-eight layout with a major axis length of approximately 178 feet and a minor axis of approximately 78 feet.
- 2.2. Track width is 16 feet.
- 2.3. Track extents are defined by hay bales.
- 2.4. The starting signal, from which all vehicles must autonomously begin, will be a 2-foot circle painted green, the opposite side being painter red. placed 1 foot above the hay bales and just to the left of the track. Starting will be indicated

upon turning the circle around to show the green side. The actual paint identifications are thus:



- 2.5. The finish line is a box outlined in red tape that spans the width of the track and extends beyond the starting line by 10 feet.
- 2.6. There will be three Nerf targets placed around the track: one at each far lobe of the figure eight, and one at the intersection. The targets will be 5-gallon buckets with baffles installed so as to keep your darts from bouncing out.

### 3. Vehicles and Riders

- 3.1. Vehicles must be less than or equal to 36" wide and 62" long, but can be any configuration (three wheels, four wheels, etc.). There is no weight restriction.
- 3.2. Helmet and gloves are required for riders. We must protect your tender hands and brains!

- 3.3. Padded/protected gear is encouraged (basically, football or hockey gear), but not required.
- 3.4. Your vehicle must have a working kill switch, to be demonstrated at check-in.
- 3.5. Beyond that, weirdness in your garb or design is highly encouraged.

#### **4. Rules**

- 4.1. Two laps, two heats, best score of two runs counts.
- 4.2. Automated start and stop is required. Stop in a predetermined boxed area just past the finish line after two laps. Stopping in the box gets you 25 points added to your score.
- 4.3. Five minutes to get as far as you can (subject to change depending on number of entrants).
- 4.4. Teams have 300 points to start, one point deducted per second.
- 4.5. Riders will carry a Nerf gun and darts to score additional points. Each hit garners the team 10 points. Darts have to be in the buckets to be counted.
- 4.6. Participants will carry a "cup of coffee" that has to retain at least half a cup by the end of the race. The cup will have a line indicating minimum allowed; 25 points will be awarded for having over the minimum. No cup holders!
- 4.7. Participants must have enough batteries to make consecutive runs. Charging batteries between heats will cause the event to run too long.
- 4.8. 130 points could potentially be awarded in addition to time points (80 for darts, 25 for stop-in-the-box, 25 for full cup of coffee).
- 4.9. The rider may not do anything but sit, shoot, hold coffee and operate the kill switch.
- 4.10. Not finishing in the allotted time gets you zero time points, but you keep target-shoot points.

- 4.11. Throwing the passenger out of the vehicle gets disqualification.
- 4.12. Deviating from the course (unless vehicle can self-correct) results in disqualification.
- 4.13. One vehicle races at a time.



