Curtin Robotics Club – Laser Tanks

# Overview

The Laser tanks project is the creation of a laser tag game where you control a tank instead of running around an arena.

This project will develop skills of:

* Microcontroller programming
* Wireless communication
* Electrical circuit design
* Soldering and PCB design
* CAD and 3D printing

# Game design

WIP!!!

Four remote controlled miniature tanks will traverse a Mario Kart-esque arena. The tanks are equipped with lasers that if shot at another tank, will disable that tank for a short time. The aim is to shoot the other tanks with your laser as many times as possible.

There is opportunity for team based game modes, as well as free for all, capture the flag, ect

# Tank Design

The tanks use an ATMEGA2560 microcontroller as the main brains of the tank. This was chosen because of its relatively low cost per unit, $22 each, large number of pins including GPIO, ADC, and PWM pins. These can be found from <https://www.makerstore.com.au/product/elec-mega2560/>,

## Electrical

The motors used for powering the tank treads are the motor, gearbox and axle assembly left over from previous attempts to do laser tanks. They will be driven with a 5v supply pulsed by the PWM signal from the ATMEGA2560