

Overview

Teams are to construct a mechanism that will control traffic signals at an intersection. This construction is to be done prior to the competition and the finished product will be displayed at the event.

Rules

The entire construction should fit into a space that is no larger than 0.6 m to a side. Only two sets of traffic lights need be built, but they must be positioned so that they control traffic that would approach the intersection at 90 degrees (like an ordinary intersection). Evidently, this means that when one set of traffic lights is showing green, the other set must show red. Signals will be timed as per the Scoring parameters laid out below.

The power source for the device as a whole will not exceed 12 V, and should consist of batteries and operate independently of any external electrical source (i.e. wall outlet). The distribution of power to the lights and the timing mechanisms are to be mechanical or electro-mechanical in nature, essentially excluding any electronics or IC timing chips.

It is not required to use coloured lights to achieve green/yellow/red colours. Teams may place coloured cellophane in front of light bulbs to indicate colour, or may provide a simple key to indicate which colour is intended when a particular bulb lights up. If teams do cover bulbs with cellophane or any other plastic or glass material, care must be taken to provide adequate venting so that the traffic light will not become too hot with sustained use.

It is intended that teams will select small incandescent bulbs for use in the mechanism. Teams may choose to use LEDs but this is not required. If LED circuits are opted for, then diodes may also be used in the circuitry. Diodes will not be considered as 'electronics' and are therefore not excluded.

In general, the entire operating mechanism should be laid bare and be visible. There should be no attempt to create any 'black boxes' to shield or hide any part of the mechanism from the view of the judges. Such attempts may lead to the disqualification of the entry.

A logbook must be kept that documents the design and construction process. The logbook itself must take the form of a bound book as opposed to a loose-leaf binder. The intent is to see the original entries as they were made at the time of writing, and no attempt should be made to rewrite or type the contents. Each entry