QUADCOPTER CHALLENGE

The event is based on finding the agilest and fastest drone. The problem statement is simple: Pass through given levels and the team with a maximum number of points wins.

Quadcopter Specifications:

1. The quadcopter should fit within the dimensions, 60cm x 60 cm x 30cm.
2. The vehicle needs to be controlled by a wireless remote control system at all times during the competition.
3. Organizers won't be responsible if the frequencies of two drones match and there is a frequency interference.
4. Participants must have a secondary remote in such a case.
5. Propellers cannot be made of metal.
6. Usage of Ready-to-fly kits is strictly prohibited.
7. Usage of autopilot is strictly prohibited.

Levels:

Level '0' (30 points)

1. Upload a video of your quad with given instructions on Facebook with two hashtags
   a. #teamName
   b. #quad_challenge@elanvision18_IITH
2. Submit the video through email to techy@elan.org.in with the subject of the mail as " **Video submission for Quadcopter challenge , ELAN and Nvision 2018**" on or before January 28, 2018 with your team members details(ELAN ID's and names). Only one video per team is accepted.
3. The length of the video should be between 1 and 2 minutes showing the quadcopter taking off and landing and taking a left and a right turn.
4. The video should also cover the pilot.

Level '1' (During ELAN&ηvision 2018)

Round 1:

- There will be hoops (at different angles), and different kinds of obstacles, along the path.
- Your drone needs to pass through all the obstacles along the given path at the best time. There is no time limit.
- The points are awarded depending on the position.

Round 2:

- This is a test for position and altitude holding accuracy. The quadcopter needs to hover mid-air in between four rods without getting out of the closure.
- The points will be dependent at what height you are able to hold it in between the rods. There is a minimum height limit of 1m and a maximum height limit of 5m.
- Total time is 1 minute per team.

  ### Points Scheme
  - +5 * height (rounded in meters) points for every ten seconds of hovering without touching the walls.
  - Points (5 * no. of times) will be deducted if it touches the walls and no points will be awarded in that interval of 10 seconds.

Round 3:

- This round is similar to round 2.
- Here, you will be instructed with a series of heights and the durations of the drone to hover on the spot.
- Total time span for a team will be of 1 minute.

  Example:
  1 sec - 10 sec: - 4 (3.5 - 4.5) meters
  15 sec - 35 sec: - 3 (2.5 - 3.5) meters
  45 sec - 60 sec: - 5 (4.5 - 5) meters

  ### Points Scheme
  - Will be announced on the spot

Level '2'

This is a surprise spot round wherein the problem statement will be disclosed at the venue. The finalists of the Level '1' are eligible to compete in this. You need not bring any additional inventory for competing in this.

Bonus round

1. This round is not compulsory. Any team may volunteer to enter this round.
2. In this round, one need to perform any kind of flips or rolls among these http://www.quadrocoptertricks.com/
3. Maximum of 5 trials will be given to a team.
4. +25 points for each successful flip or roll performed.

Bonus Points:
Level 1

Round 1

- Passing through obstacles continuously without the drone touching the obstacle will result in additional 20 pts

Round 2

- +20 points for not breaching the boundary at all, throughout the round.

Round 3

- Will be announced on the spot

Level 2

It will be announced at the venue itself.

Fouls and penalties:

1. Destruction of arena of each round of any type will result in huge penalty.
2. Obstruction of other participant's drone in any manner whatsoever may cause huge penalty in their points or immediate disqualification.
3. In any case of dispute, the decision of organizers will be final.
4. The drone should not go beyond 20m (except bonus round) of altitude. In such cases minor penalty will be given.
5. **Organizer decision is final and binding in all matters.**

Note:
- Make sure you make use of failsafe option in case it may go out of control
- The Organizers will not be responsible for any damage that occur to your quadcopter throughout the competition.