

## QUADCOPTER CHALLENGE

The event is based on finding the agilest and fastest drone. The problem statement is simple: Pass through three rounds 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](mailto:techy@elan.org.in) with your team name and its members on or before January 28, 2018. 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 35 seconds for the round.

#### Points scheme

- +10 points for every five seconds of hovering without touching the walls
- -4 points for breaching a boundary for 1 second.

### Round 3:

- This is same as round 1 but the quadcopter now has to go in opposite direction.

#### Points scheme

- Same points scheme as round 1.



## 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. Completing this round will result in multiplying your points.
2. You need to mount an action camera or any camera suitable and take video of the fest from above covering all the ongoing events.
3. The video must be clear, as the quality of the video is also a factor of decision
4. You need to make sure that the battery is full beforehand so that it doesn't fall on someone midway in air. And make best use of the fail-safe option of your flight control board
5. If you successfully complete the above task, the multiplier would be x2, if there is any casualty the multiplier would be x1.5 with some penalty based on the intensity of the casualty.
6. Additional points will be given for the quality of the video on the respective events.

## Points Scheme:

1. In all the three events, time will be considered while giving points. The average of all timings of each participant will be calculated and points will be allocated based on the comparison between participant's time and average. If the drone is faster than the average, you will get more points!!!
2. This point scheme will be applied for each event and separate points for each event will be calculated.

## Bonus Points:

### Level 1

Round 1:

Special flags will be set up offset of the path. Passing through those flags will result in awarding fixed number of points to that team.

Round 2:

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

Round 3:

Special hoops will be set up offset of the path. Passing through those hoops will result in awarding fixed number of points to that team.

### Level 2

It will be announced at the venue itself

### Level 3

Extra points will be awarded based on the quality of the video on respective events. It may range between 20 - 60 pts and will be decided by the organizers.

## 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.





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4. The drone should not go beyond 20m of altitude. In such cases minor penalty will be given.
5. Organizer decision is final and binding in all matters.

register at : [www.elan.org.in](http://www.elan.org.in)