Flying SynDRONE

TECHNOVATE

Introduction:

Design a wireless remote controlled multi-rotor (Tri-copter, Quad-copter, Hex-copter, etc) to cross an obstacle course in minimum time without crashing.

Competition Design:

There will be only one round which will test the ability of pilot to handle the multirotor across the obstacles. If the multi-rotor successfully crosses the obstacle, point will be awarded according to each obstacle. Each team will be given two attempts.

Model Specifications:

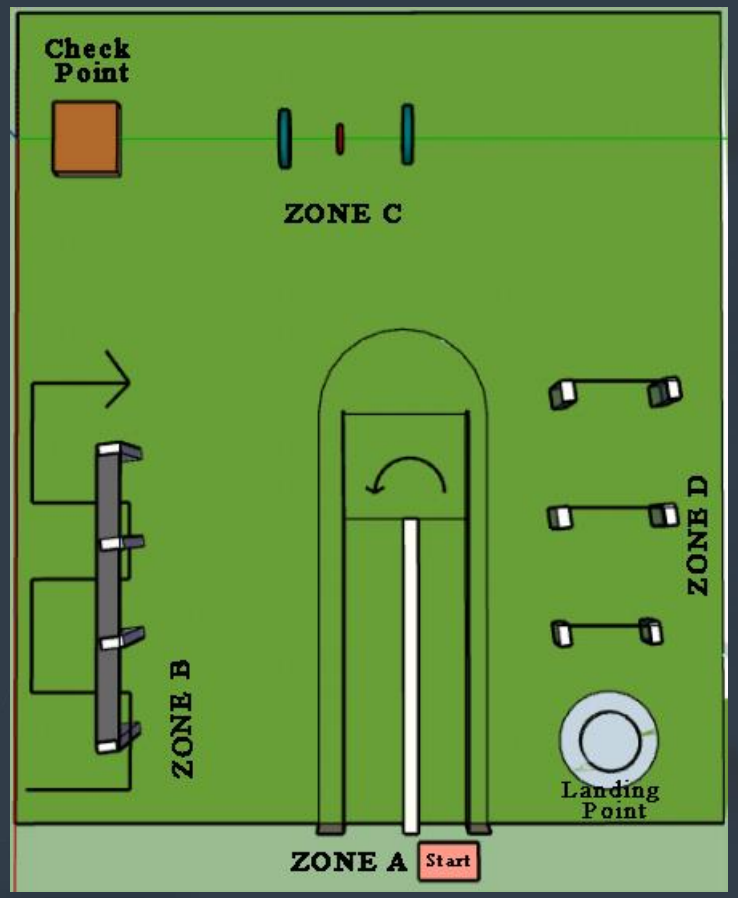
- Only Self-made multirotor is allowed.
- Use electrical motors only.
- Use of any Automated Features of flight control Board (such as Position Hold, Altitude Hold) is prohibited.
- Machine should fit into the dimension box of 400mm x 400mm x 300mm.

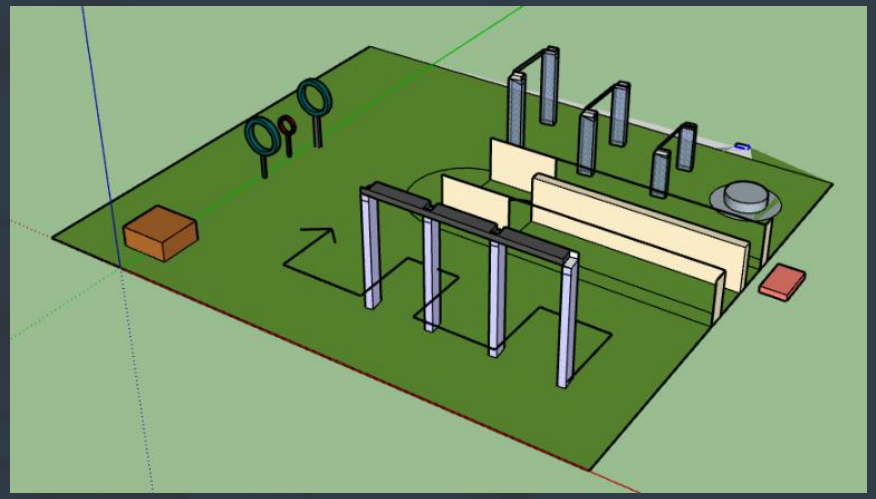
Arena Design:

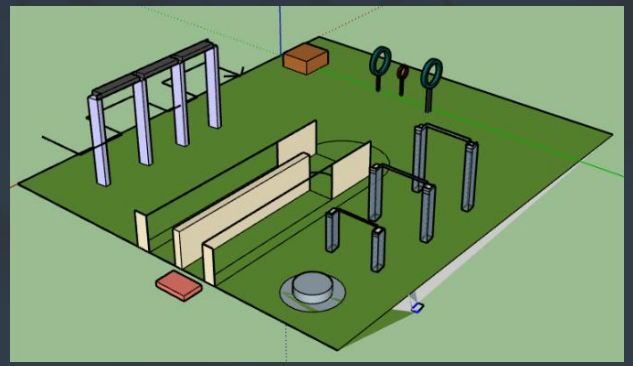
- It has 4 Zones – Zone A, Zone B, Zone C, Zone D in series.
- The multirotor should take off from the start point.
- After take off the multirotor should pass through Zone A. This zone consists of U-Shaped path.
- Zone B consists of 4 vertical poles placed parallel to each other.
- Zone C consists of 3 Circular rings placed in series. 1st and 3rd Rings are with Larger dimension and 2nd Ring with smaller dimension.
- A checkpoint is present in between Zone B and Zone C.
- Zone D is consists of a horizontal tunnel.
- Finally the multirotor should land in the landing area provided.
- Each of these Zones consists of specific points according to which the final winners are declared.

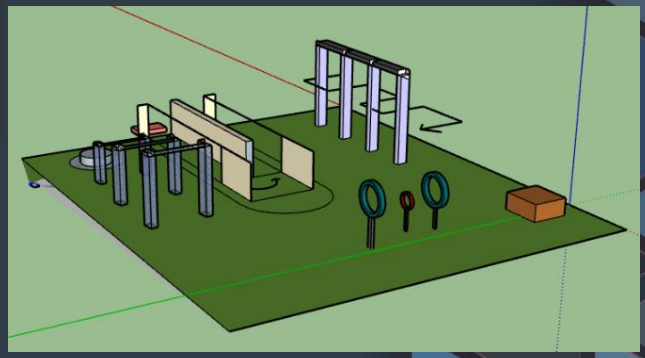
*All the dimensions of the Hurdles will be larger according to the given dimensions of the multirotor.

Arena









*Some parts of the Arena may not look exactly the same. Coordinators have the right to change the orientations or shapes and add new.

Task:

- Multirotor has to take-off from the start point.
- It has to pass through Zone – A, B, C, D in the same order.
- Zone A consists of U-Shaped path in which you have to take 180 degrees turn at the end and come back to pass to Zone B.
- In Zone B the multirotor should pass between the poles in a zigzag pattern.
- In Zone C 1st , 3rd rings are mandatory and 2nd ring is optional. 2nd ring contains more points as compared to 1st and 3rd rings.
- There is a Checkpoint position in between Zone B and Zone C.
- In Zone D the multirotor should pass through the set of tunnel and this will be the last hurdle.
- Points will be awarded for each zone alongside penalty is also imposed on violating the rules.
- Every Zone is not mandatory. If a player wants to skip a hurdle, the points related to that hurdle are not awarded along with some time penalty.
- It has to land safely and smoothly in the landing zone. Landing points will also be awarded.

Rules:

- Two attempts will be given to each team without any pre-condition and best of the two scores will be considered for evaluation.
- If multirotor remains within radius of 1m from the centre of the starting zone (zone A only) after the take-off and touches the ground, the team can opt for a re-attempt.
- In one chance, only one touchdown of the multirotor is permissible. The second touch will be considered as **final touchdown point and will lead to termination of that chance and the points scored till then will be considered.**
- If the multirotor touchdown is after passing the checkpoint, then it can again continue from the checkpoint.
- Teams can skip any hurdle/tunnel as per their convenience; however they will not be awarded any points for that hurdle/tunnel with addition to some penalties.
- If any part detaches in the air (except the cubical package) while performing the tasks, that position will be considered as final touchdown point.

*More Rules may be added by the time of Event.

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Certificate policy:

- Top 2 teams will be awarded with certificate of excellence and the other announced prizes.
- Certificate of participation will be given to each team.

Coordinators:

For any further details **Contact**
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*Event Heads Decision is Final in all scenarios.