AUTONOMOUS DRONE COMPETITION RULES

1. Introduction

This document outlines the rules for the “Autonomous Drone” competition.

2. Description of the Competition

One operator and four helpers can be registered for each robot (there can be a maximum of 5 team members in total). However, only one operator is allowed to guide the robot during the encounter. The area where the competition takes place is called the Track. The operator who is called to the Track for the competition accepts the competition rules, scoring and time conditions. Drones are placed at the starting point determined by the referee. After placement, competitors are given 30 seconds to become autonomous. The time kept by the referee starts from the moment the drone takes off from the ground. The device follows the line autonomously within 3 minutes and tries to complete the maximum number of laps it can without hitting obstacles or landing on the ground. When it hits any obstacle or lands on the ground, the number of laps is reset and it returns to the starting point. The maximum number of rounds scored at the end of the time is announced by the referees.

2.1. Fixture

The competition format is determined by the tournament organizers depending on the number of participants. Teams have 3 rounds of 3 minutes each to complete the competition. After all teams participating in the competition complete their 1st Round qualifications, the 2nd and 3rd rounds are held respectively.

2.2. Classification and Rating

Fibonacci International Robot Olympiad Autonomous Drone competitions take care to classify and grade by taking into account education level and age groups. It can be divided into 5 basic groups: kindergarten (0-6), primary school (6-10), secondary school (10-14), high school (14-18) and university (18+). The age group and education level of the team is determined by the age or education level of the oldest member of the team. **It is the responsibility of the team mentor to ensure that teams are registered in the correct age category.** If during the competition it is determined that the team is registered in the wrong age category, the robot of this team will be **disqualified from the competition** .

Note: Teams in the younger age group are allowed to compete in the older age group. The organizers reserve the right to check the age of contestants during the competition. In case of violation, the robot of the team that violated the rules will be **disqualified** .

3. Competition Field Description (Track)

The competitions will be held on a protected rectangular field of 4 x 2 meters, called "Runway". A route with a width of 5 cm and 50 cm inside from the edge of the track has been drawn on the field, as shown in Figure 1. There are gates on the field, the dimensions of which are shown in Figure 2.

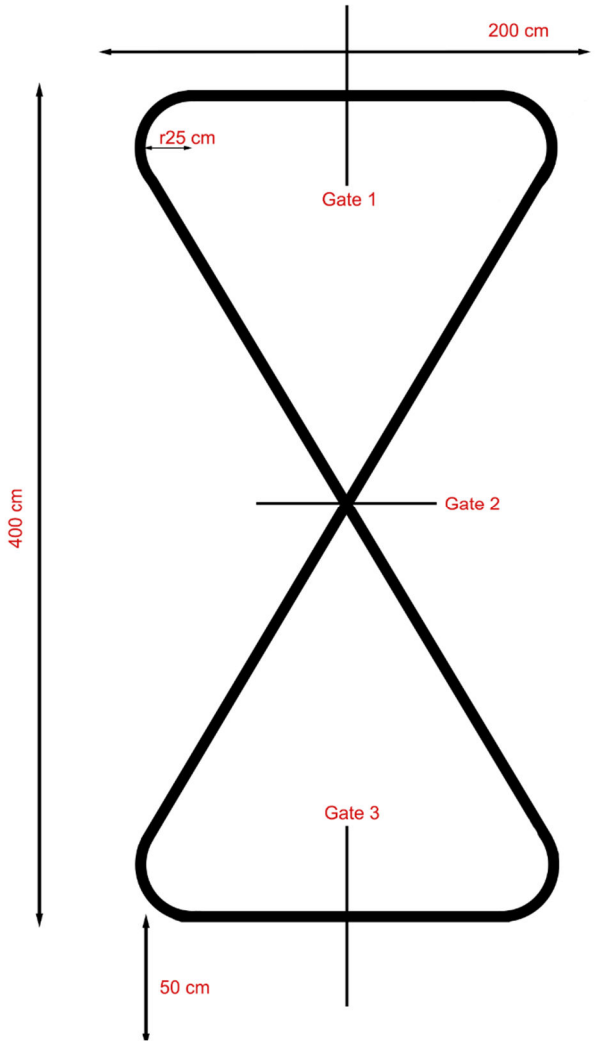
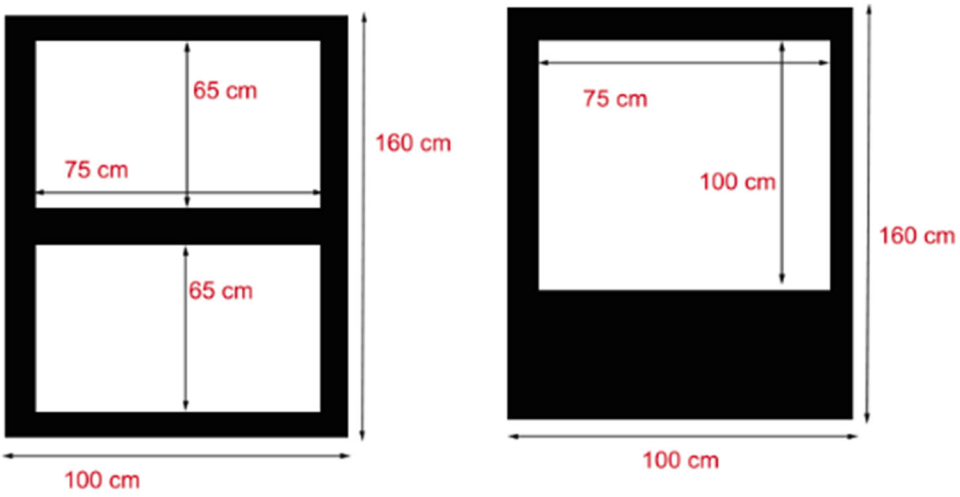


Figure 1: Runway Dimensions



Gate 2 **Gate 1 and Gate 3**

Figure 2: Dimensions and shapes of gates

3.1. starting area

Since the drones will fly autonomously following the line as required, the starting point will be determined by the referee on the day of the competition.

4. Drone

4.1 Autonomous Drones must have a maximum width, length and height of 30 x 30 x 40 cm and a maximum weight of 2000g.

Class	Weight	Length*	Width*	Height*
Autonomous Drone	2000gr	30cm	30cm	40

Table 1: Size and Weight Limitations

4.2 Drones cannot be divided, cannot leave or throw away a piece of themselves during the competition. Competitors must fix the parts of their robots in a way that does not fall, such as batteries falling, screws coming out, propellers breaking, etc. In such cases, the tour is terminated and recorded in the tour number field.

4.3 If the referee determines that the autonomous flying drone poses a danger, flight permission will not be given.

4.4 The drone can move within the field at a maximum speed of 5mt/sec.

4.5 Drone flight height should be between 30 cm and 200 cm.

5. Competition Rules

5.1 Competitors must be in the competition area, ready to fly, within 3 minutes after the names of their robots are announced. Otherwise, it is considered to have completed its tour.

5.2 After the round starts, teams are given 1 minute of preparation time. At the end of the preparation period, one of the team members must be present with the drone next to the track where the competition will be held. The team that is not in the competition area at the end of the preparation period is deemed to have used its right to tour.

5.3 Teams are entitled to one three-minute technical break for each round. The right to a technical break can be taken before the drone takes flight and the time starts. The party taking a technical timeout may intervene in the structure of their robot. During the technical break, an assistant of the contestant can enter the competition area with their belongings. The contestant who is in the competition area cannot leave the competition area or give the drone to an assistant outside the competition area. During the match, the competing drone cannot leave the competition area for any reason.

5.4 After the team member places their Drone on the Runway, they are given 30 seconds to adjust the device's transition to autonomous state.

5.5 The 3-minute tour begins for the drone that receives the autonomous transition command and takes off from the ground.

5.6 The drone, which takes action autonomously, must follow the 5 cm wide line in the field.

5.7 If the drone hits an obstacle or touches the ground, it is returned to the starting point by the team member. The number of laps is recorded and restarted from zero for the number of laps again.

5.8 In case of more than one flight, the flight with the highest number of tours is taken as the tour point.

5.9 The drone, which takes off from the starting point, completes 1 tour when it follows the line and passes the same point again.

5.10 The starting point and tour direction are announced by the referee at the meeting with the teams before the competition.

5.11 Gate 2, located in the middle of the field, has two sections for drones to pass through. The drone must make its first pass through this gate from the lower part, and its second pass from the upper part .

5.12 Referee decisions are taken as basis for all points and problems on the field.

5.13 Teams will be given the right to a 2-minute test flight before starting the official tours. If the team for which the test is announced by the referee is not present, it is deemed to have lost its right.

5.14 Organization reserves the right to make changes in field dimensions and gate designs. Any changes made are notified to the teams by the referee beforehand or during the competition test flights.

5.15 It is essential for the drones to follow the line, but the autonomously flying drones of the teams that cannot do this will be competed by the referees under the same rules, but will be scored differently. Drones that can follow lines will be given higher priority in the rating.

6. Objections

The juries' decisions are final and not subject to subsequent review. If a solution cannot be reached with the juries, objections must be submitted immediately to the Fibonacci International Robot Olympiad Chief Referee. Complaints made after this point will not be accepted. In case of disagreement or disagreement, the final decision will be made by the Juries and/or organizers.

Note: Rude behavior will not be tolerated. A team that does not respect the decisions of the judges, referees or referees may be disqualified by the referee and/or event organizers.

6.1 Competitors cannot raise objections due to field factors after the round has started. These factors are eliminated by the referees with warnings made before the round.

6.2 The competitor may make a verbal objection to the referee for the result of a round after that round. When the next round begins, the contestant loses his right to verbal objection.

6.2.1 The contestant may present the evidence he/she has to the referee within the scope of the objection. The referee can decide according to his own logic when there is a situation outside the rules.

6.2.2 After the rounds are over, the contestant may submit a written objection to the verbal objection decision until the next round begins. This objection must be written and submitted to the chief referee in the form of a petition.

6.2.3 The chief referee makes final decisions on the objections made. Decisions cannot be appealed again.

6.3 Competitors who do not comply with the referees' warnings or disrupt the course of the competition will be disqualified.

6.4 Fibonacci robot competition reserves the right to make any changes it deems necessary in the rules.

7. Marking Robots

Drones must be checked by referees before the tournament and labeled with number tags (Robot Number / Team IDs). These stickers are provided by the competition organizers. The sticker cannot be placed on any other components that may interfere with the operation of the drone's sensors. Before each new tour, robots must undergo technical control again.

8. Changes and Cancellations to the Rules

Changes and cancellations in the specifications are made by the main organizer of the competition in accordance with the regulations of the competition organizing committee.

9. Security Measures of the Competition

Class	Propeller Guard	Glasses
Autonomous Drone	Necessary	Necessary

Table 2: Security Requirements

9.1 The runway will be surrounded by protection equipment to prevent drones from harming people or other equipment. No one other than the pilot will be allowed to enter this area after the tour starts.

9.2 It is extremely dangerous to intervene while the drone is flying in the air. Competitors who intervene despite this will be disqualified.

9.3 Drones with swollen batteries or leaked fluids cannot be raced. If dangerous situations such as short-circuiting or smoke are detected in a drone during the tour, the competition will be stopped and the drone will be disqualified.

9.4 According to International Civil Aviation regulations, drones are prohibited from flying in closed areas, within 50 meters of people and structures, regardless of their weight. Drone racers are strictly prohibited from flying without permission. If unauthorized flying is detected, the relevant team will be disqualified. It is the responsibility of the mentors to ensure that the teams comply with these rules and ensure the security of the event. Please follow these rules fully and help make the event enjoyable and safe.

10. Disclaimer

Drone Category races are more dangerous than other categories due to the speeds the robots reach and the cutting elements (propellers) they may contain, and competitors must work carefully and take the necessary precautions at every stage of the competition. Despite this, Fibonacci International Robot Olympiad Organizers disclaim all liability for any material damage or injury that may occur.