FPV DRIVE CHALLENGE COMPETITION RULES

1. Introduction

This document outlines the rules for the " FPV Drive Challenge" robot competition.

2. Description of the Competition

For each vehicle, one operator and four assistants can be registered (a maximum of 5 team members in total). However, during the competition, only one operator is allowed to control the vehicle. The goal of the competition is to achieve maximum performance on the designated track using vehicles controlled via FPV (First Person View) goggles and camera systems. The vehicles are manually controlled by remote control, and autonomous movement is prohibited.

The competition lasts for 3 minutes, and the vehicles are expected to complete the maximum number of laps on the designated track. Two, three, or four vehicles may be on the track at the same time. The racing order and starting positions on the grid are determined based on a fixture organized by the competition committee. Vehicles at the starting grid begin moving 5 seconds after the start signal.

The race consists of 3 rounds, and the final score is determined by the best performance across these rounds. In case of a tie in the scores of finalist vehicles, the lighter vehicle will take precedence. The winning vehicle will be 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 Car competitions take care to classify and grade by taking into account education level and age groups. It is divided into 4 basic groups: 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 Track Description

The walls along the edges of the track are 5 cm high and 5 mm thick, made of wood or similar materials. The width of the track ranges from 60 to 80 cm. A bridge may be present on the track. The location of the starting line and the starting direction are determined by the referees before the competition.

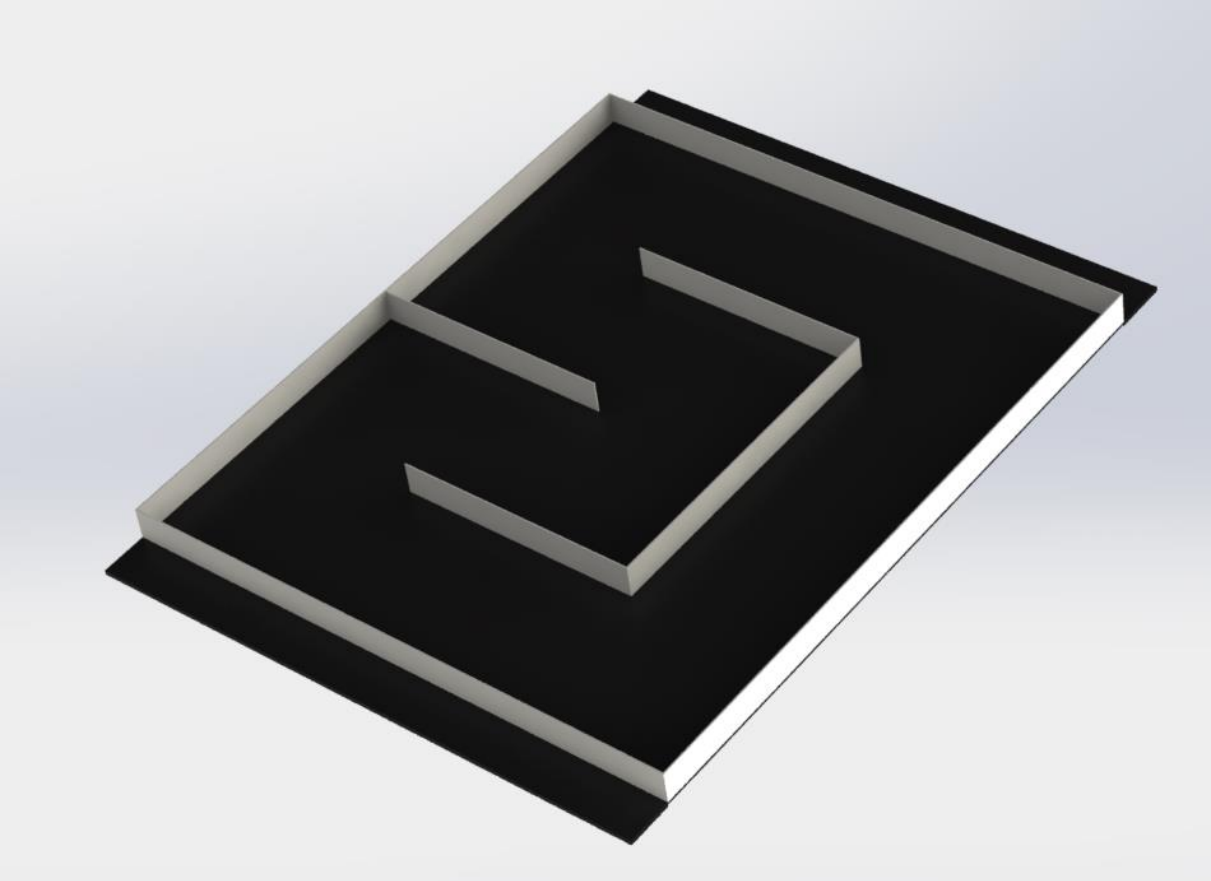

Figure 1. Sample Runway Image

3.1. Starting Line

Robots are lined up at the starting line in the order determined before the competition. The front end parts of the robots are aligned to the starting line. Robots wait 5 seconds to receive the start command and are then expected to take action. The robot that acts early – gets points.

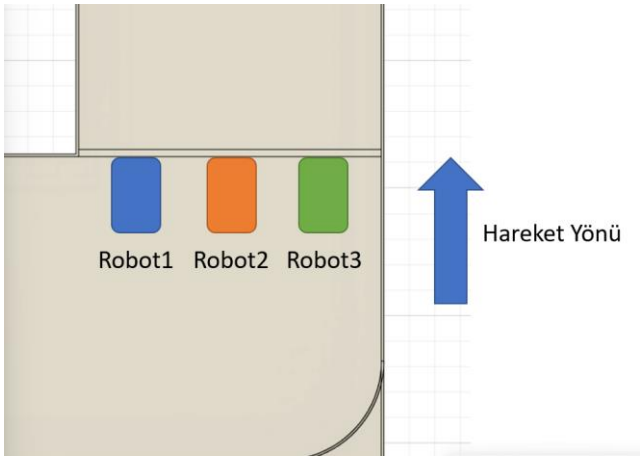

Figure 2. Alignment to the starting line

Robots are standing next to each other , they cannot be aligned to hit their opponents when starting.

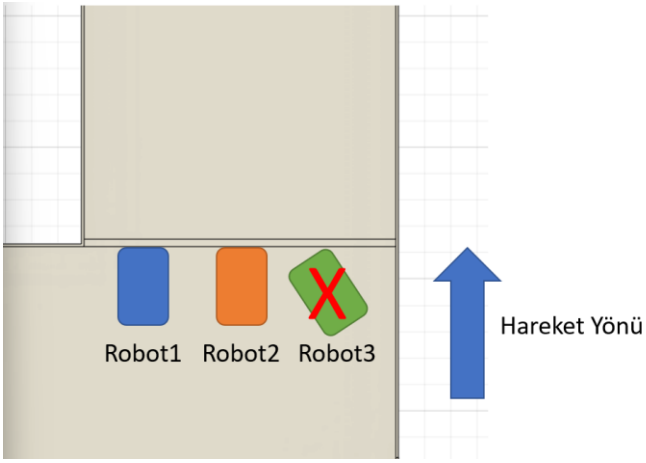

Figure 3. False start

4. Robot

4.1 In the FPV Drive Challenge, the robots must have a maximum width, length, and height of 25x25x25 cm, and a maximum weight of 1500 g. The width and length of the robots must comply with this rule at all heights. Any type of FPV camera and goggles system can be used..

Class	Weight	Length*	Width*	Height*
FPV Drive Challenge	1000gr	25cm	25cm	25cm

Table 2: Size and Weight Limitations

4.2 Vehicles can be made from ready-made kits (such as Lego, mBot, Arduino, etc.) or custom designs. The vehicles must be four-wheel drive (4WD) and capable of steering. Autonomous movement using sensors is prohibited. The vehicles must operate entirely under manual control.

4.3 After the competition begins, it is prohibited for the robot to alter its size, damage the area, pose a danger to spectators, release gas, liquid, or dust, actively collide with other robots, or use other robots for movement.

4.4 The robot must have a start/stop button or a remote control for start/stop (recommended). After starting, the robot must wait for 5 seconds.

4.6 The use of an FPV camera and goggles is mandatory in the vehicles. The operator controls the vehicle from outside the track solely using the FPV system. It is prohibited for the vehicles to cause any damage to elements of the track or actively obstruct other vehicles during the competition.

5. Match Rules

5.1 After the names of the robots are announced, the participants must be in the competition area, ready for the competition, within 3 minutes. Otherwise, the competition will begin, and the absent party will lose their turn.

5.2 After the competition announcement, all participants will hand over their robots to the referee desk. When it is their turn, they will take their robot, place it on the track, and start the competition. Robots handed over to the referee desk cannot be touched by the participants during the competition round. It is prohibited to physically modify the robots that have been handed over. Once the competition round is finished, participants can collect their robots and make updates for the next round.

5.3 The arrangement of each competition round will be determined according to the fixture set by the organization committee before the competition.

5.4 Participants are given 30 seconds to place their robots on the track.

5.5 The competition lasts 3 minutes.

5.6 Robots start at the starting line and earn +1 point each time they complete a lap and cross the starting line.

5.7 Robots that leave the starting line, turn back, and cross the starting point again will receive -1 point.

5.8 The competition begins with the start signal, and robots must move 5 seconds after the start signal. Robots that begin moving before the 5-second delay will receive -1 point.

5.9 If a robot gets stuck or is not moving on the track, it will be waited for 10 seconds. The robot can be placed at the starting line by an assistant participant and restarted. The decision to do this lies with the assistant participant. Robots that are restarted in this way will receive -1 point.

6. 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

Robots must be checked by the referees before the tournament and their number labels (Robot Number / Team Their IDs should be labeled with). These stickers are provided by the competition organizers. The sticker cannot be placed on the robot or any other component that could interfere with the operation of the opponent'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	gloves	Glasses
FPV Drive Challenge	Not Required	Not Required

Table 3: Security Requirements

9.1 During the competitions, competitors are required to wear protective gloves and protective glasses. The mentioned protective equipment will be loaned to the competition if the competitor does not have it, but it is recommended to bring your own equipment for hygienic reasons.

9.2 Competitors will not be allowed into the competition area with any electronic device (e.g. phone, tablet).

9.3 It is extremely dangerous to interfere with robots during the competition, unless directed by the referee. Competitors who intervene despite this will be disqualified.

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

10. Disclaimer

FPV Drive Challenge Category is dangerous due to the speeds reached by robots, 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 .