



## 1. Game description

Drone is an unmanned aircraft that is controlled by a computer or remote control. This drone category is divided into 2 groups, that is drone racing and drone auto. This match system is the fastest drone to the finish is the winner.

## 2. Conditions of competition:

### 2.1. Participant

The competition is open to participants from Indonesia and the Indonesian Foreign participants through the following categories :

2.1.1 **Drone RC Open Category** [less than 19 years old]

2.1.2. **Drone Auto Open Category** [less than 19 years old]

### 2.2. Each team consists of a maximum of six (6) participants including:

2.2.1. Competitors must have at least one (1) participant and a maximum of six (6) participants.

2.2.2. Each participant (except assistant teacher/team manager) is only allowed to registe/ join a team only.

2.3. Team registration must be done online at the website.

2.4. Eating & drinking are not provided.

2.1. The Robot Kit is not provided by the committee.

## 3. The Drone Competition at WIRC 2023 is divided into 2 categories:

### 3.1. FPV Drone Race / Drone Racing RC

#### FPV Drone Race / Drone Racing RC Open

FPV Drone Race is a drone race where drones are controlled by a pilot wearing FPV (First Person View) glasses. FPV glasses function to display images from the camera mounted on the drone so that the pilot can find out the situation around the drone. In this section, we will explain the competition rules for the FPV Drone Race category at WIRC 2023.

#### 3.1.1. Drone Specifications

Drones that can be used in the FPV Drone Race category must have the specifications

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listed in this section.

### 3.1.2. Size and Weight

Frame with the provisions of the distance M2M (Motor to Motor) maximum length of 100mm. The use of any type of motor is allowed, such as Brushed and Brushless. Maximum weight of Drone + Battery allowed is 50gr.



### 3.1.3. Remote Control

The drone must be able to be controlled via a remote control with a frequency of 2.4 Ghz. In general, the remote control on the market already meets the specifications, so it is not allowed to be modified. Remote control example.



### 3.1.4. FPV Device

Drones are required to have an FPV device with a frequency of 5.8 Ghz which includes:

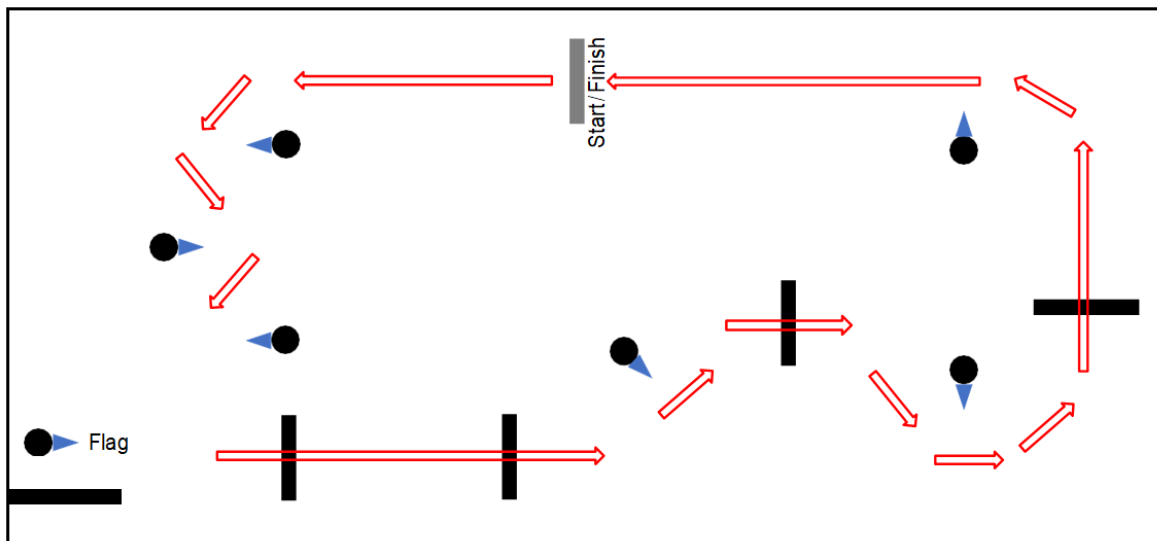
1. FPV Camera
2. FPV Glasses

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### 3.1.5. Track Competition

The following is the WIRC 2023 competition arena for the FPV Drone Racing category.



## 3.2. Autonomous Drone Racing

Autonomous Drone Race is a new division at WIRC 2023. Autonomous Drone Racing robots are determined by the committee. This is a branch of the drone competition that prioritizes automated systems on drones. There is no manual control like remote controller to control the drone. The following is an explanation of the Autonomous Drone Race division.

### 3.2.1. Drone Specifications

The drone used is the DJI Tello or another type of micro brushed drone. Drones can only be obtained by ordering from the committee. The maximum M2M (motor

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to motor) drone size is 100mm. The drone can be programmed so that it can fly according to the program that has been embedded into the drone. The program that can be implanted can be through a computer/laptop or android/iphone/ipad device. Here is the DJI Tello drone.

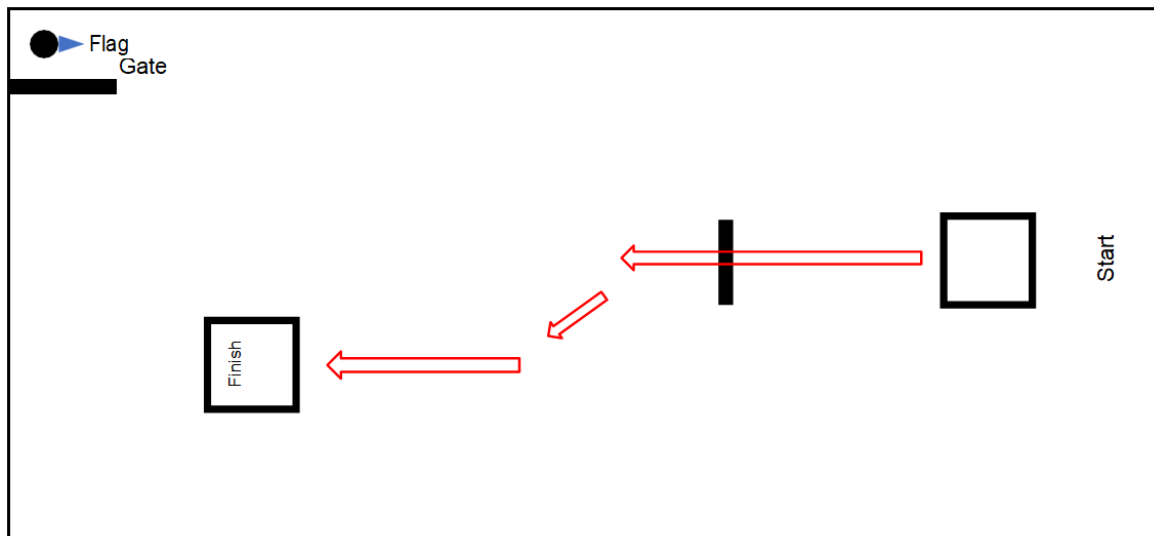


### 3.2.2. Size and Weight

Frame with the provisions of the distance M2M (Motor to Motor) maximum length of 100mm. The use of any type of motor is allowed, such as Brushed and Brushless. Maximum weight of Drone + Battery allowed is 50gr.

### 3.2.3. Track Competition

The following is the WIRC 2023 competition arena for the FPV Drone Racing category.



## 4. Mechanism of the Race

Each team will be given 2x trials to complete the mission according to the match arena. Sorted

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time is the fastest time to complete the mission. The winner of this race is the team with the fastest drone that can complete the mission. Maximum time for 1 game is 3 minutes

## 5. Race Arena

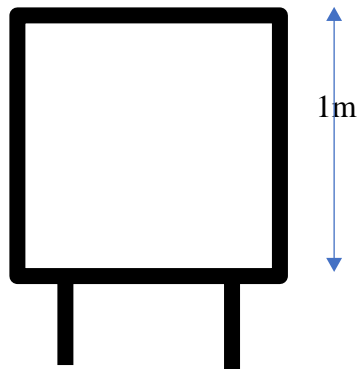
There are several rules in the competition that must be obeyed by the contestants.

### 5.1. Start & Finish

This is the place where the drones are placed before the match is held. This is also the place where the drone should stop at the end of the game. The start and finish lines are gates/wickets whose details are in part 5.2 below.

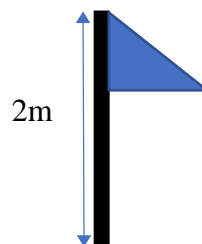
### 5.2. Gate

A challenge / obstacle in the arena of competition that must be passed by the drone on the inside. When the drone does not enter the gate, it is prohibited from continuing to the next challenge. Here is the size of the gate / wicket used. 1m



### 5.3. Flag

The flag is an obstacle / challenge that exists in the arena of competition in the form of a pole above the head of a flag as a marker. This flag must be passed on the right / left side depending on the shape of the drone racing or drone auto competition arena. The following is the size of the flag / flag used.



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#### 5.4. Missions and Game Score

There are 4 missions in this match according to the table below.

No	Misi	Poin	Waktu (detik)
1	Take Off	1	
2	Flag	2	
3	Gate	3	
4	Landing	2	
Total Poin & time		8	