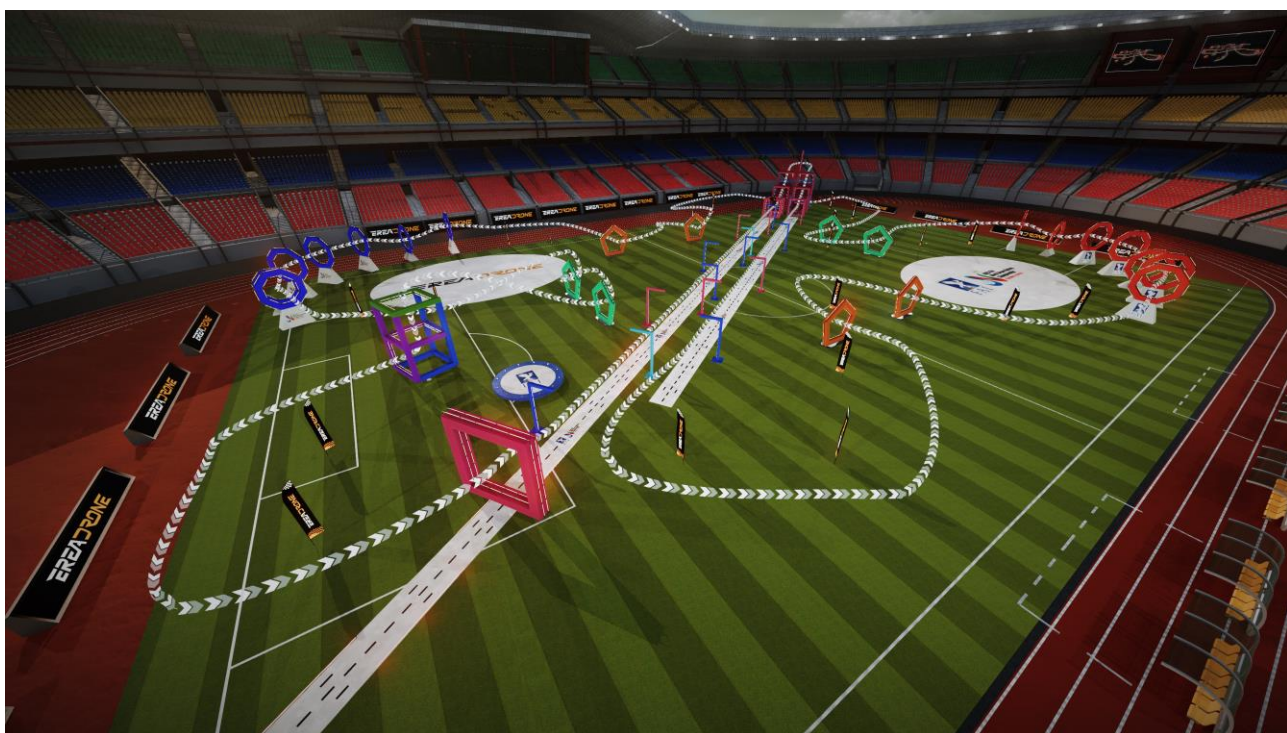




# FAI e-Drone Racing World Cup Rules

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*Maison du Sport International  
Avenue de Rhodanie 54  
CH-1007 Lausanne  
Switzerland  
Tel: +41(0)21/345.10.70  
Fax: +41(0)21/345.10.77  
Email: [info@fai.org](mailto:info@fai.org)  
Web: [www.fai.org](http://www.fai.org)*

## **FEDERATION AERONAUTIQUE INTERNATIONALE**

**Maison du Sport International, Avenue de Rhodanie 54, 1007 LAUSANNE, Switzerland**

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- 1 ..... FAI Statutes, ..... Chapter 1, ..... para. 1.6
  - 2 ..... FAI Sporting Code, Gen. Section, ..... Chapter 4, ..... para 4.1.2
  - 3 ..... FAI Statutes, ..... Chapter 1, ..... para 1.8.1
  - 4 ..... FAI Statutes, ..... Chapter 2, ..... para 2.1.1; 2.4.2; 2.5.2 and 2.7.2
  - 5 ..... FAI By-Laws, ..... Chapter 1, ..... para 1.2.1
  - 6 ..... FAI Statutes, ..... Chapter 2, ..... para 2.4.2.2.5
  - 7 ..... FAI By-Laws, ..... Chapter 1, ..... paras 1.2.2 to 1.2.5
  - 8 ..... FAI Statutes, ..... Chapter 5, ..... paras 5.1.1, 5.2, 5.2.3 and 5.2.3.3
  - 9 ..... FAI Sporting Code, Gen. Section, ..... Chapter 4, ..... para 4.1.5
  - 10 ..... FAI Sporting Code, Gen. Section, ..... Chapter 2, ..... para 2.2.
  - 11 ..... FAI Statutes, ..... Chapter 5, ..... para 5.2.3.3.7
  - 12 ..... FAI Statutes, ..... Chapter 6, ..... para 6.1.2.1.3

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E-Drone Racing is an eSport which consists of races with remotely piloted drones flying on a virtual circuit with obstacles to overcome.

The FAI Aeromodelling Air Sport Commission (CIAM) introduced in 2024 an annual e-Drone Racing World Cup based on a series of virtual international events run on different racing circuits

For 2025, the World Cup events may be run by using:

- the EreaDrone simulator (See <https://ereadrone.com>) with the event management system (EMS) developed by EreaStudio,
- or the Velocidrone simulator (See <https://velocidrone.com>) with the open-source RotorHazard race timing and event management system.

All pilots may fly from home ('Remote' piloting) with their own computer just taking care to be aware for the schedule of the time zone differences, and to have an internet connection stable enough.

## 1. PILOT EQUIPMENT

The equipment required to participate is as follows:

- Windows or MacOS computer with a video monitor and an internet connection.
- Game controller (e.g. Xbox), or radio transmitter (FrSky or RadioMaster,...) which may be identified as a controller by the computer.

The EreaDrone simulator is available on Windows operating system and the Velocidrone simulator on Windows or MacOS.

The minimum and recommended specifications for the computer are available on the following webpages:

- <https://ereadrone.com/en/play#specs> for the EreaDrone simulator.
- <https://velocidrone.com/shop> for the Velocidrone simulator.

The use of a FPV google headset is not required due to the difficulty of setting up properly such a device on a computer but it may be used if the pilot prefers it.

## 2. DRONE RACER

The characteristics of the drone racer that will be available in the simulator may depend on the racing circuit.

The characteristics concern, but not only, the mass, dimensions, motorisation (KV, latency), propeller (diameter, pitch), battery voltage, air drag, rotation inertia, and ground effect.

It will not be possible for the pilots to edit characteristics to better fit their style of flying.

The characteristics of the drone racer will be announced before the beginning of the event.

## 3. RACING CIRCUIT

The racing circuit is defined with a 3D flight path including a start line, obstacles to be crossed or avoided, and a Start-Finish line. It may be an open circuit to be flown once or a closed circuit with several laps to be completed.

The racing circuit can be set up in every environment: urban, mountain, woodland, park, stadium, carpark, harbour, castle, etc.

The recommended total distance to complete in a race is 2 to 3 km representing a flight time between 60 to 90 seconds for the fastest pilots. In case of a closed circuit, the number of laps to complete will be determined consequently.

The length of the circuit will be measured along the centerline of the optimum 3D flight path.

The pilots will not be informed before the event about the circuit used for the event.

## 4. REGISTRATION TO THE EVENT

A period of time before the beginning of the event will be defined for the registration to participate in the event. The registration will be done on the EreaDrone website.

All information regarding dates for the event (practice flight period, qualification stage period, days planned for the competition) will be published before the beginning of the registration period.

Data required for the registration to an event:

- First name (Given name) and last name (Family name).  
**Note:** *The Latin (Roman) alphabet must be used to write the names.*
- Nickname.
- Gender.
- Date of birth.
- Nationality country.
- Residence country.
- FAI ID number if the pilot holds a FAI Sporting Licence or a FAI Frone Permission.
- Velocidrone User ID for the events run with the Velocidrone simulator.

**Note:** *For the events run with the EreaDrone simulator, the user ID is automatically filled when the pilots proceed their registration.*

The organiser may request payment of an entry fee to participate in the event.

A license for the simulator concerned is necessary to participate in an event.

## 5. WORLD CUP EVENT ORGANISATION

### 5.1. Practice flight session

Before the beginning of each event, a practice flight session will be planned.

Only the pilots registered to participate in the event may participate to the practice flight session.

The possibility for each pilot to practice will be limited to a predefined cumulative time (e.g. 30 minutes), or to a maximum number of laps of the circuit that can be completed (e.g. 10 or 20 depending on the circuit).

Information for the practice flight session will be available at the registration for the event.

### 5.2. Qualification stage

The event will begin with a qualification stage to select the pilots for the competition itself.

Flights for the qualification stage are called 'asynchronous' considering every pilot will fly alone without being impacted by the other pilots flying at the same moment.

A period of time (e.g. 7 days) will be defined for the qualification stage. During that period, each pilot will be authorised a maximum number of attempts (e.g. 12) to register times to complete a predefined number of consecutive laps. The pilots may do their attempts whenever during the allocated period, on different days, and at any time of each day.

The ranking for the qualification stage will be calculated by considering for each pilot their fastest registered time.

The qualification current ranking will be accessible once the qualification stage will start. The registered qualification times will be published when the qualification stage period of time will be finished. Every pilot will get possibility to access the qualification times registered for the other pilots after he/she will have proceeded with at least half of the maximum number of attempts defined.

### 5.3. Competition

In each race, the pilots will fly together at the same time with the possibility to see the other drones.

All races will be run on the number of laps corresponding to the predefined number of laps stated for the qualification stage.

In each race, first crossing the finish line will be first placed, and so on. Pilot(s) who did not finish (DNF) will be placed after those who finish, and considering if necessary, the distance completed (number of laps and part of the last lap completed). If applicable, disqualified pilot(s) will be placed at the end before pilot(s) who did not start (DNS).

#### 5.3.1 First part of the competition

The first part of the competition concerns the preliminary rounds for which all races will be run with 8 pilots per race.

Depending the number of pilots ranked in the qualification stage, two scenarios will be considered for this first part of the competition:

- a) **Scenario A** = 128 pilots selected from the qualification stage - First part with two rounds (24 races in total)
- b) **Scenario B** = 64 pilots selected from the qualification stage - First part with one round (8 races in total)

For both scenarios, the 4 best placed in each race will be qualified for the next round, and the other pilots will be eliminated.

The composition of the races for the first round is defined by considering the qualification stage ranking.

For each scenario, see the Annex for the composition of the races for the first round and the bracket for the first part of the competition.

#### 5.3.2 Second part of the competition

The second part of the competition concerns the 32 pilots qualified from the first part of the competition.

**Note:** *Second part of every e-Drone Racing World Cup competition will stand on a different day from the first part, and will be livestreamed with an English language commentator.*

All races will be run with 4 pilots per race. So, this part will include 1/8<sup>th</sup> finals, quarter-finals, semi-finals and finals (16 races in total).

The 2 best-placed pilots will be qualified for the next round, and the other pilots will be eliminated.

Regarding the finals, the 2 best-placed pilots in each of the two semi-final races are selected for the final race to determine their final ranking from 1<sup>st</sup> to 4<sup>th</sup> places. In addition, a small final race will be organised for the pilots placed 3<sup>rd</sup> and 4<sup>th</sup> in the two semi-finals to determine their final ranking from 5<sup>th</sup> to 8<sup>th</sup> places.

See the Annex for the bracket for the second part of the competition.

#### 5.4. Final classification

The final classification for the event will be calculated as follows:

- 1<sup>st</sup> to 4<sup>th</sup> places according to the final race results.
- 5<sup>th</sup> to 8<sup>th</sup> places according to the small final race results.
- After each round, the eliminated pilots will be placed according to the qualifying stage ranking. Nevertheless, the pilots who managed to get a scoring time will be placed in front of those who did not finish (DNF), those eventually disqualified (DISQ) being placed after, and those who did not start (DNS) placed at the end.
- The pilots not selected for the competition will be placed according to their ranking in the qualifying stage.

#### 5.5. Other topics

##### 5.5.1 Start of the race

After all drones are placed in the start area, a countdown 5, 4, 3, 2, 1 will be done before the start signal.

The drone cannot be armed before the start signal. At the start signal, the drone is automatically armed once the pilot sets the throttle to zero.

**Note** - *Setting the throttle at its maximum before the start signal does not permit getting the maximum power right after the start signal.*

##### 5.5.2 Safety zone

Around and above the circuit a safety zone is defined in the simulator. Flying outside this zone is not allowed. It is a non-flying zone. When a drone gets out of this flying zone, a popup window shows up informing the pilot concerned he/she has seven (7) seconds to go back inside. If the drone is still outside the safety zone after this period, the pilot concerned will be disqualified from the race.

##### 5.5.3 Case of an obstacle not crossed correctly

Each obstacle to be crossed is marked and each pilot may see an indicator marking the next obstacle to be crossed.

As long as an obstacle is not validated as being crossed, the following obstacles cannot be validated for the pilot concerned.

A lap is valid only when the obstacles have been crossed in the right order.

##### 5.5.4 Crash - Collision between drones

In case a pilot crashes his/her drone, he/she can take-off again immediately.

It is not possible to have a crash due to a collision with another drone because the pilots can see the other drones but cannot be in touch with them.

#### 5.5.5 Reflight

Reflights are not allowed because video issues and collisions between two drones cannot occur with a simulator.

**Note** - An insufficient performance or stability of the internet connection may generate a problem during a race for the pilot concerned. Each pilot will be considered responsible for the quality of his/her internet connection. Complaints based on a disconnection during the race will not be accepted.

#### 5.5.6 Colours

A colour will be allocated to each drone to better identify it during the race.

## 6. E-DRONE RACING WORLD CUP

### 6.1. Events

The events recognised for the World Cup must be published on the FAI Calendar and run according to the following rules.

### 6.2. Points allocation

Points allocated to each pilot depend on the placing in the event of the concerned pilot.

In the situation of a tie for any placing in an event, the pilots with that placing will share the points that would have been awarded to the places covered had the tie been resolved (round up the score to the nearest whole number of points).

The points allocated to pilots will depend on the number (N) of pilots who have effectively flown in the qualification stage.

#### a) $N > 80$

Placing	1	2	3	4	5	6	.....	80 and after
Points	80	79	78	77	76	75	.....	1

#### b) $N \leq 80$

Placing	1	2	3	4	5	6	.....	N-1	N
Points	N	N-1	N-2	N-3	N-4	N-5	.....	2	1

In addition, a bonus in points will be awarded as follows to the eight (8) best-placed pilots in the event:

- 1<sup>st</sup> place =  $N/2,5$  rounded up to the nearest whole number with a maximum of 32 points.
- 2<sup>nd</sup> place =  $N/3$  rounded up to the nearest whole number with a maximum of 27 points.
- 3<sup>rd</sup> place =  $N/3,5$  rounded up to the nearest whole number with a maximum of 23 points.
- 4<sup>th</sup> place =  $N/4$  rounded up to the nearest whole number with a maximum of 20 points.
- 5<sup>th</sup> place =  $N/5$  rounded up to the nearest whole number with a maximum of 16 points.
- 6<sup>th</sup> place =  $N/7$  rounded up to the nearest whole number with a maximum of 12 points.
- 7<sup>th</sup> place =  $N/10$  rounded up to the nearest whole number with a maximum of 8 points.
- 8<sup>th</sup> place =  $N/20$  rounded up to the nearest whole number with a maximum of 4 points.

### 6.3. Classification

The World Cup ranking will be determined by considering the points obtained by each pilot in the World Cup events in which he/she participated.

The total World Cup score of the pilot is the sum of its best three event results (numbers of points).

The winner of the World Cup is the pilot with the greatest total score for the concerned year, and so on for the ranking.

In the situation of a tie for first, second or third place of the World Cup ranking, placing will be determined by taking into account for the pilots in question, their best fourth result. If this does not break the tied pilots, then the placing will be determined by considering the sum of the points that they obtained in each of the three events considered for their World Cup score multiplied by the number of pilots who have flown in the event concerned; the winner is the one with the greatest total thus calculated.



#### **6.4. Awards**

The winner is awarded the title of e-Drone Racing World Cup winner for the concerned calendar year. CIAM medals and diplomas will be awarded to the three best placed. Other prizes may also be awarded as available.

**- ANNEX -**

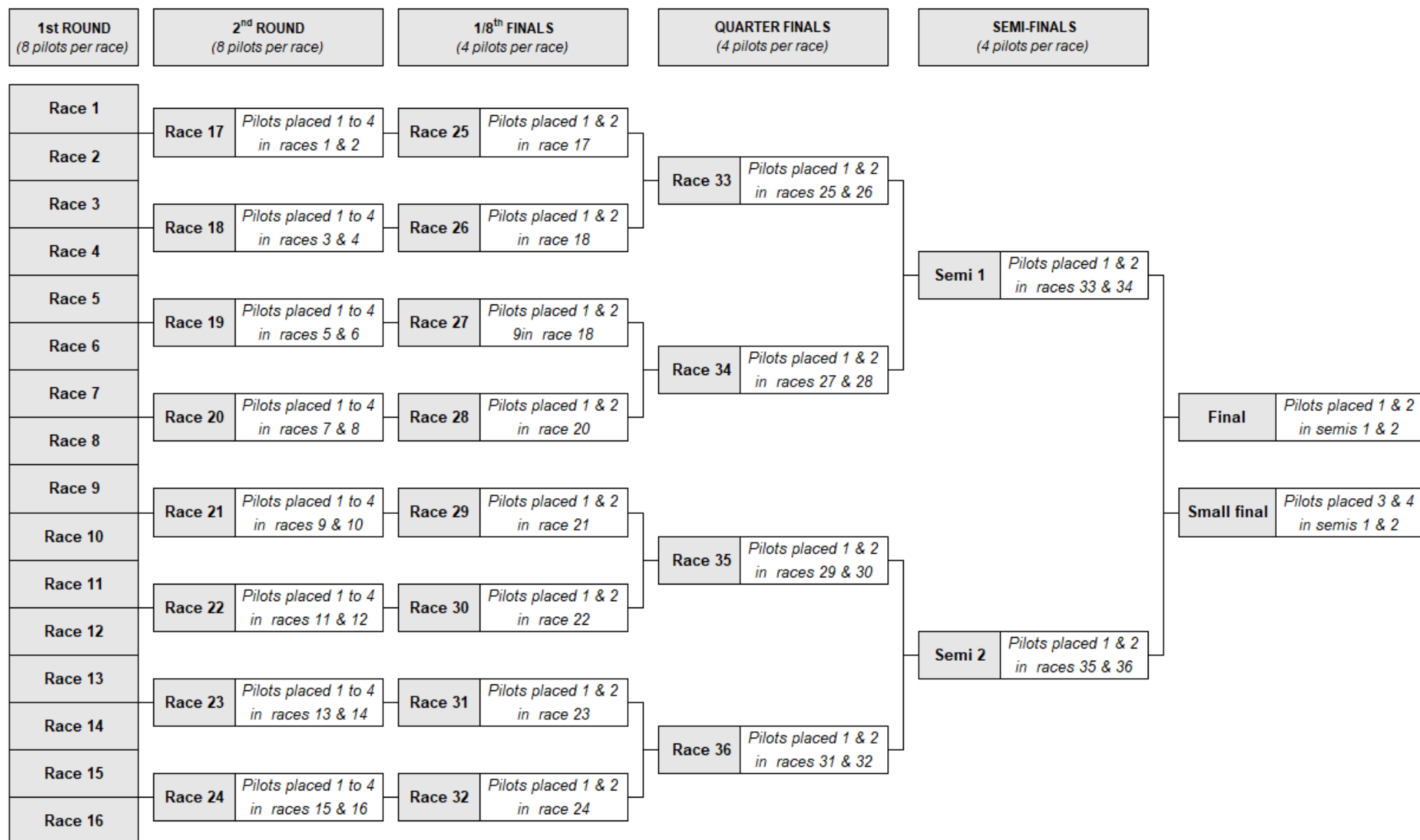
**SCENARIO A** (128 pilots selected from the elimination stage)

**8 pilots per race for the 1<sup>st</sup> and 2<sup>nd</sup> rounds - 4 pilots per race from 1/8<sup>th</sup> finals to finals**

**Composition of the races for the 1<sup>st</sup> round**

<b>Race 1</b>	Placed 1	Placed 32	Placed 48	Placed 64	Placed 80	Placed 96	Placed 112	Placed 128
<b>Race 2</b>	Placed 16	Placed 17	Placed 33	Placed 49	Placed 65	Placed 81	Placed 97	Placed 113
<b>Race 3</b>	Placed 8	Placed 25	Placed 41	Placed 57	Placed 73	Placed 89	Placed 105	Placed 121
<b>Race 4</b>	Placed 14	Placed 19	Placed 35	Placed 51	Placed 67	Placed 83	Placed 99	Placed 115
<b>Race 5</b>	Placed 4	Placed 29	Placed 45	Placed 61	Placed 77	Placed 93	Placed 109	Placed 125
<b>Race 6</b>	Placed 12	Placed 21	Placed 37	Placed 53	Placed 69	Placed 85	Placed 101	Placed 117
<b>Race 7</b>	Placed 6	Placed 27	Placed 43	Placed 59	Placed 75	Placed 91	Placed 107	Placed 123
<b>Race 8</b>	Placed 10	Placed 23	Placed 39	Placed 55	Placed 71	Placed 87	Placed 103	Placed 119
<b>Race 9</b>	Placed 9	Placed 24	Placed 40	Placed 56	Placed 72	Placed 88	Placed 104	Placed 120
<b>Race 10</b>	Placed 5	Placed 28	Placed 44	Placed 60	Placed 76	Placed 92	Placed 108	Placed 124
<b>Race 11</b>	Placed 11	Placed 22	Placed 38	Placed 54	Placed 70	Placed 86	Placed 102	Placed 118
<b>Race 12</b>	Placed 3	Placed 30	Placed 46	Placed 62	Placed 78	Placed 94	Placed 110	Placed 126
<b>Race 13</b>	Placed 13	Placed 20	Placed 36	Placed 52	Placed 68	Placed 84	Placed 100	Placed 116
<b>Race 14</b>	Placed 7	Placed 26	Placed 42	Placed 58	Placed 74	Placed 90	Placed 106	Placed 122
<b>Race 15</b>	Placed 15	Placed 18	Placed 34	Placed 50	Placed 66	Placed 82	Placed 98	Placed 114
<b>Race 16</b>	Placed 2	Placed 31	Placed 47	Placed 63	Placed 79	Placed 95	Placed 111	Placed 127

## Bracket for the competition



## **SCENARIO B** (64 pilots selected from the qualification stage)

**8 pilots per race for the 1<sup>st</sup> round - 4 pilots per race from 1/8<sup>th</sup> finals to finals**

### **Composition of the races for the 1<sup>st</sup> round**

<b>Race 1</b>	Placed 1	Placed 16	Placed 24	Placed 32	Placed 40	Placed 48	Placed 56	Placed 64
<b>Race 2</b>	Placed 8	Placed 9	Placed 17	Placed 25	Placed 33	Placed 41	Placed 49	Placed 57
<b>Race 3</b>	Placed 6	Placed 11	Placed 19	Placed 27	Placed 35	Placed 43	Placed 51	Placed 59
<b>Race 4</b>	Placed 4	Placed 13	Placed 21	Placed 29	Placed 37	Placed 45	Placed 53	Placed 61
<b>Race 5</b>	Placed 3	Placed 14	Placed 22	Placed 30	Placed 38	Placed 46	Placed 54	Placed 62
<b>Race 6</b>	Placed 5	Placed 12	Placed 20	Placed 28	Placed 36	Placed 44	Placed 52	Placed 60
<b>Race 7</b>	Placed 7	Placed 10	Placed 18	Placed 26	Placed 34	Placed 42	Placed 50	Placed 58
<b>Race 8</b>	Placed 2	Placed 15	Placed 23	Placed 31	Placed 39	Placed 47	Placed 55	Placed 63

### **Bracket for the competition**

