



# LEIRIA DRONE RACE WORLD CUP 2018

## PORTUGAL

### REGULATION

v1.1

9<sup>th</sup>, 10<sup>th</sup> of June 2018

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## LEIRIA DRONE RACE

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Leiria Drone Race World Cup is going to take place in Leiria's municipal stadium : "*Dr. Magalhães Pessoa*", Leiria, Portugal, on the 9<sup>th</sup> and 10<sup>th</sup> of June 2018. It is an event scheduled in the "Fédération Aéronautique Internationale" (FAI) calendar.

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## F3U FPV RC MULTI-ROTOR

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Leiria Drone Race is a multicopter competition event that follows the main rules provided by FAI Sporting Code, Section 4 – Aeromodelling, Volume F3 - Radio Control Drone Racing, 2018 Edition, Effective 15 March 2018.

The present document do not replace the complete regulation which can be found in:

[https://www.fai.org/sites/default/files/documents/sc4\\_vol\\_f3\\_droneracing\\_15-3-2018.pdf](https://www.fai.org/sites/default/files/documents/sc4_vol_f3_droneracing_15-3-2018.pdf)

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## LICENSES

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Each competitor must have a valid and signed (by the holder) Sporting Licence of the FAI or FAI Drone Permission.

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## REGISTER

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Competitors must register in the official event website: <http://www.leiriadronerace.com/>

Registrations will be accepted until 1<sup>st</sup> June 2018 or until the limit of 48 competitors is reached.

The register fee is 40.00€ (forty euros). Payment must be done following the procedures indicated subsequently to the registration in the website.

**The registration is confirmed only after payment.**

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## 1.AIRCRAFT MODEL REQUIREMENTS

### MULTIROTOR WEIGHT & SIZE

Each multicopter must have all the equipment necessary to flight and must not exceed 1kg with battery included.

Maximum size must not pass over 330 mm distance between axes.

### MOTORS

Only electric motors are allowed with a maximum voltage of 17.0 volts (4S).  
The voltage must be checked before every flight.

### PROPELLERS

Maximum diameter: 6 inch (15.2 cm).

Metal propellers are forbidden.

Any propeller protection device is forbidden.

A tolerance of 1% is going to be given either for weight, measures and battery voltage.

### RADIO CONTROL EQUIPMENT

2.4GHz spread spectrum.

TBS Crossfire.

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## VIDEO SYSTEM

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### **Allowed 5.8 GHz Video Transmitters:**

TBS Unify; ImmersionRC Tramp;

AKK nano2; FT48X; Eachine vtx03;

**Max. power limited to 25mW.**

Antennas must be easily swapped between Right-Hand (RH) and Left-Hand (LH) Cross Polarization;

The video frequencies and antenna polarization will be indicated by the organization before the beginning of the event and/or at the begin of a race.

Competitors must bring their own video receiver (googles) and matching RHCP/LHCP antennas.

**Note:** Any competitor who does not respect the maximum emission power or other restriction for use of the video transmitters defined by the organiser may be disqualified from the contest.

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## LED RGB

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Switchable RGB LEDs are required.

**Recommend:** 4x RBG LED units per rear arm (8 units total), or any other setup clearly visible at night.

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## IDENTIFICATION MARK

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Each model shall carry the national identification mark followed by the FAI Sporting Licence ID number (or the National FAI licence). The letters and numbers must be at least 6 mm high and appear at least once on each model.

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## OTHER REQUIREMENTS

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The use of automatic piloting systems are forbidden.

Fail-safe is mandatory.

Crash recovery/ Turtle mode are allowed.

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## 2.EVENT ORGANIZATION

### MODEL REGISTRATION AND PROCESSING

Each competitor can register up to 3 (three) models for the entire contest. The competitor can change the model before the start of the race, as long the competitor hasn't left the preparation area, or between two rounds.

The models should respect the requirements previously indicated in this document, namely:

- a) Identification mark;
- b) Weight and size;
- c) Motorization and batteries;
- d) Fail-safe;
- e) VTX;
- g) LED light units.

Before the Practice Flights, the organiser will verify the models, validating each of the points above. When complied all requirements, the models will be marked with an easily visible and difficult to falsify identification.

**Note:** Random processing of models could be made after flights in any round. A competitor whose model wouldn't be compliant may be disqualified from the contest.

### PRACTICE FLIGHTS

A practice session will be organised at the beginning of the event.

The practice flights will happen in groups of 4 pilots, the same groups for qualifications.

Every competitor will fly 2 (two) rounds of 4 (four) laps, in an intercalary manner with the subsequent group.

## COMPETITION DEVELOPMENT

The competition will be developed in three stages:

- QUALIFICATION -
- ELIMINATION -
- FINALS (final and small-final) -

Draws for group composition are indicated in ANNEX 3 of FAI Sporting Code, Section 4 – Aeromodelling, Volume F3 - Radio Control Drone Racing, 2018 Edition.

## HEATS

A Heat is composed of 4 (four) laps to the racing circuit.

## QUALIFICATION

The qualification will happen in groups of 4 pilots.

Every competitor will fly **3 (three) qualification rounds**, corresponding to a total of **12 laps**.

**The result of each competitor for the qualification stage will be the average of the 3 (three) best times recorded to perform one valid circuit lap taking in account all the qualifying rounds.**

After the qualification it will be chosen the 32 pilots with the fastest averaged times.

Those will pass to the elimination stage

## ELIMINATION

The elimination will happen in groups of 4 pilots, with a single heat per group.

The elimination stage will respect the following structure:

1/8<sup>th</sup> Final Round – 8 GROUPS OF PILOTS - 32 PILOTS

1/4<sup>th</sup> Final Round - 4 GROUPS OF PILOTS – 16 PILOTS

Semi-Final - 2 GROUPS OF PILOTS – 8 PILOTS

The placing for each race is determined taking into account the time achieved when the number of laps is completed. For those who will not finish their flight, placing will be done considering the distance completed (number of laps and part of the last lap completed) when they stop their flight, competitors disqualified being placed last.

When in an elimination race, none of the competitors of the group has been in a situation to finish it (crash or other reason), a new race is immediately organized for this group.

## FINAL AND SMALL FINAL

The four fastest competitors from the semi-final will race against each other in a final race (1<sup>st</sup> to 4<sup>th</sup> position).

The other competitors from the semi-final round will fly a small final to determine their final ranking (5<sup>th</sup> to 8<sup>th</sup> position).

## SPECIAL CONSIDERATIONS

Second chance flight (section B.6.6 of FAI Sporting code) and Additional rounds (section B.6.7 of FAI Sporting code) are not implemented in this event.

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### 3. FLIGHT OCCURRENCES

#### PENALTIES

1. In case an air gate or an obstacle that needs to be crossed is not effectively crossed, the pilot may try to execute a manoeuvre to cross the air gate or the obstacle again. In case of collision with other multirotor during that attempt the pilot will be declassified.
2. If the pilot does not cross an air gate or an obstacle to be crossed, the corresponding circuit lap will not be validated by his/her assigned judge.
3. If an air gate or an obstacle is accidentally broken during a race, the race will continue and every pilot must do the best to follow the track and not take advantage of this situation.
4. In case of a circuit cut (for example during a turn), the pilot must execute as soon as possible a manoeuvre to come back into the circuit where the pilot left it. If it not return to track with the sufficient urgency, the judge can decide that the corresponding circuit lap is not validated.

#### DISQUALIFICATIONS

A pilot may also be disqualified in a race in case of:

1. A start before the starter signal if it is considered that this early start gives a clear advantage of the concerned pilot;
2. A circuit exit (crossing of the safety line);
3. A celebratory manoeuvre especially after the pilot finishes;
4. The piloting is hazardous or if safety is involved

The disqualification is decided at the discretion of the judge in charge of the concerned pilot.

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## CRASH

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In the event of a crash, the multirotor can return to the race if the pilot is in a situation to do so.

However, the pilot can be requested by his/her assigned judge to stop the flight if the judge considers that the model no longer meets acceptable safety standards.

When the model cannot go on, it must stay on ground with engines cut off until the end of the race: the concerned pilot cannot request a reflight.

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## VIDEO ISSUES

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When a pilot gets a video problem which leads the pilot to consider not to be able to continue the flight, a reflight can only be granted if it is proved that the problem is caused by an identifiable external cause.

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## REFLIGHTS

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1. A reflight can be granted when either the start of the model or the flight cannot be done in normal conditions because of an unexpected cause beyond the pilot's control.
2. A reflight can be granted if, for a reason independent from the pilot's will, the pilot has been forced to land on request of an official.
3. Technical failures of the model, and Incidents during races such as collisions between models or with obstacles cannot justify a reflight.
4. Final granting of a reflight is the responsibility of the contest director. For the pilot being granted a reflight, the flight for which the pilot has been granted the reflight is then definitively cancelled
5. Any reflight will be flown at the end of the concerned round.

## JURY, JUDGES AND OFFICIALS

### Contest Director:

1. Filipe D. Bernardino (POR)

### Starter and assistant:

1. Joao R. Reis (POR)
2. Gilberto Iglésias (POR)

### FAI Juries:

1. Jose M. Martinez Ibanez (ESP)
2. Claudio M. Oliveira (POR)
3. To be nominated.

### Judges:

1. To be nominated.
2. To be nominated.
3. To be nominated.
4. To be nominated.



município de  
**Leiria**

