



Formula 1 was Yesterday Today is all about Drone Racing ...

This is fast developing into the latest craze. Flying small radio-controlled multicopters via video goggles for a first-person view is becoming increasingly popular.

What it's all about

FPV (First Person View) device are nothing new. FPV races are based on a completely different concept. A racer should always be a multicopter with at least three motors and should weigh no more than 1 kg including

batteries. An optimised weight-power ratio makes for agile and dynamic racers' movements in the air. Power plus manoeuvrability, a major consideration when designing a multi-copter for racing while it should also be crushproof and able to take a fair amount of punishment.

The technology

The size of these racers is defined by the distance between motor axes. Common sizes are between 200 and max. 330 mm. As a good compromise, copters with an axis spacing of 250 mm have become established. Propellers with two, three or even four blades measuring from 5 to max. 5 inches are used. Batteries are limited to 4 S LiPo cells with a maximum voltage of 17 Volts. The video transmission system consists of a small camera, a 5.8 GHz transmitter and a circular antenna and is used to transmit the video signal from the copter to the video goggles. The goggles include a receiver which is also equipped with a circular antenna. Diversity receivers using a circular antenna and a patch antenna to receive the video signal from the copter are also available and provide improved reception. The copter is controlled using a conventional 2.4 GHz radio controller.



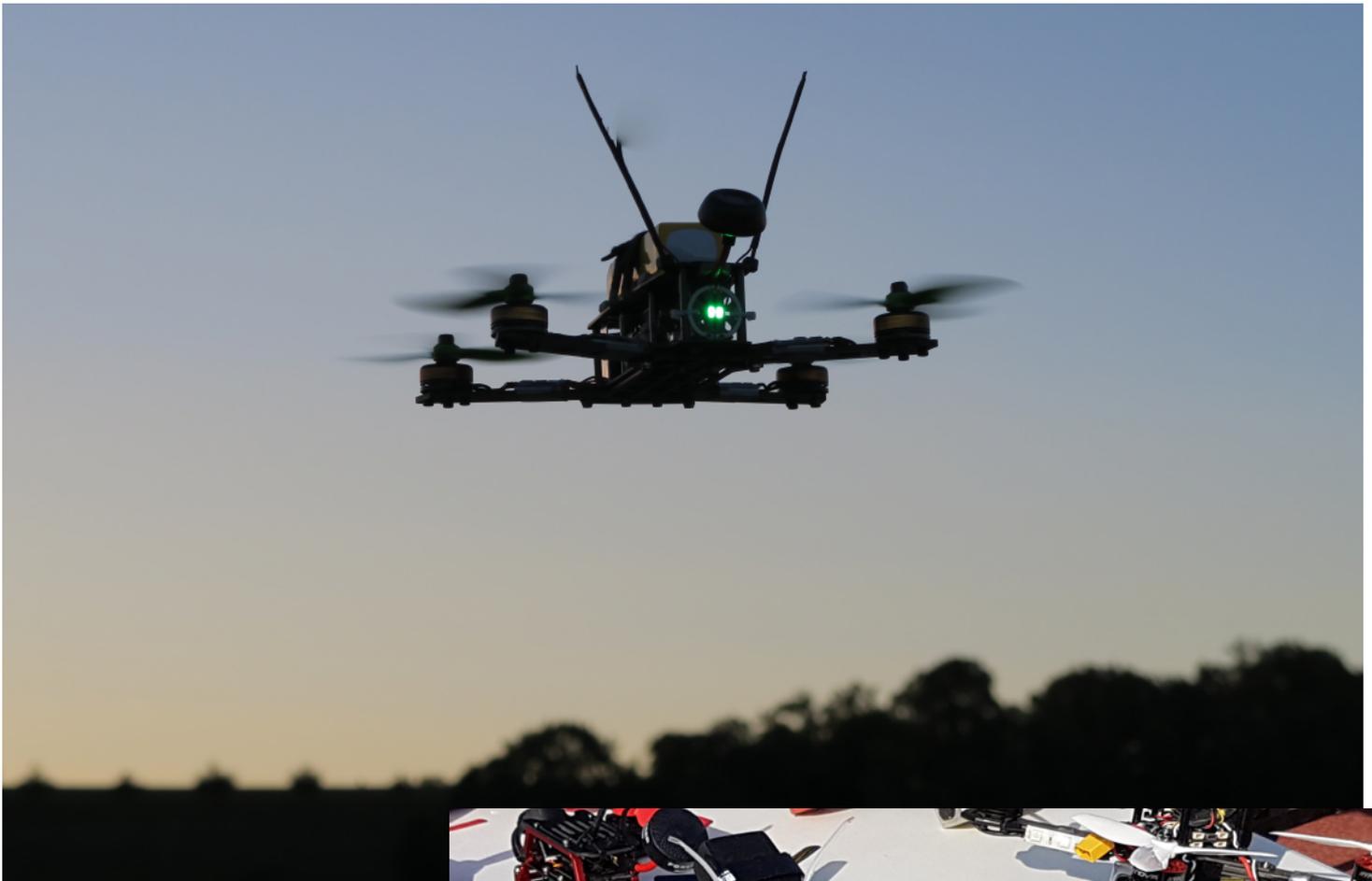
The race course

The racing circuit is 250 m long, has to fit into an approx. 180 x 100 m rectangle and is marked on the ground. Obstacles must be clearly visible. The entire race course has to be set up to avoid accidents and to ensure that there is no danger to persons.

Air gates

The racing circuit must include between 3 and 5 air gates. The crossing dimensions of the air gates must be adapted to the configuration of the circuit depending especially on the natural obstacles. Recommended crossing dimensions are: Width: 3.0 m maximum with a minimum between 2.5 m and 1.6 m. Height: 1.9 m maximum with a minimum between 1.7 m and 1.3 m.





A new flying discipline

In early 2016, the Fédération Aéronautique Internationale (FAI), also known as the World Air Sports Federation, created the new F3U class for drone racing. The rules specify a number of details, so that national and international events can be held on common rules. A FAI Drone Racing World Cup has been created with a first edition in 2016 with 9 events and about 230 competitors placed from 17 countries. For the 2017 edition, 15 events registered on the FAI calendar.

Link to the Drone Racing World Cup FAI webpage:

<http://www.fai.org/world-cups/drone-racing>

Finally, it should be noted that events in this exciting racing class can also be held indoor. Whether indoor or outdoor - these races are attractive for spectators and for media.



CIAM-Flyer 1-2017

Photographes: Michel Hauser and Wolfgang Völler

Editor: Emil Ch. Giezendanner

F3U Rules: <http://www.fai.org/ciam-documents>