F9 DRONE SPORT e-TECHNICAL MEETING

Saturday 10th April 2021

- **According the CIAM General Rule A.5.2:**
  - A technical Meeting is hold by the Subcommittee Chairman prior to the CIAM Plenary Meeting
  - The meeting '*shall consider items in the Agenda for the purpose of discussion and briefing of all those present and shall, through the Subcommittee Chairman, make their recommendations*' to the Plenary Meeting
  - Eligible to attend: Subcommittee members, voting Delegates, Alternates and any others approved by their NAC.
  - Only one person per country may vote.
  - Minutes of the meeting must be published no later than April 25
- **Previous F9 Technical Meeting:** Saturday 10th October 2020 prior to the 14th November CIAM e-Plenary Meeting

F9 Drone Sport Subcommittee

- **Chairman:** Bruno DELOR *(re-elected in 2020 for a 2 years term)*
- **Composition** *(according to CIAM General Rules A.7.2)*
  - In addition to the Chairman, members must all be from different countries
  - Members are selected by the Chairman from the F9 Technical Experts appointed by NACs
  - Subcommittee members serve as individual expert consultants and are not obliged to represent the views of their NAC
  - List of the members of the Subcommittee is published on the FAI website (https://www.fai.org/page/ciam-subcommittees)
- **38 countries represented in 2021**
  - **Africa** (2)**:** ISR - RSA
  - **America** (4)**:** BRA - CAN - **COL** - USA
  - **Asia & Oceania** (8)**:** AUS - ~~*CHN*~~ - HKG - **INA** - JPN - KOR - **NZL** - THA - TPE
  - **Europe** (24)**:** AUT - BEL - BLR - BUL - ~~DEN~~ - ESP - FIN - FRA - GBR - GER - GRE - HUN - ITA - **LAT** - LTU - LUX - MKD - NED - NOR - POL - POR - RUS - SLO - SUI - ~~*SVK*~~ - SWE - ~~*UKR*~~
- **Use of Basecamp for the Subcommittee exchanges**

FAI Drone Racing events format

- **Drone Racing World Cup**
  - **Challenger Series** *(effective from 2017)*
  - **Masters Series** *(introduced for 2019)*: FAI Jeonju World Drone Masters hold 1 to 3 November 2019 in Jeju City (Korea)
- **World Drone Racing Championship** (WDRC)
  - **1st Edition in 2018**

    Awarded to China in October 2017 for 3 years

    Hold 1 to 4 November 208 in Shenzhen
  - **Renamed in 2019 WDRC Grand Final**

    Hold 10 to 14 December 2019 in Ningbo
  - **Participation to WDRC Grand Final:**
    - National teams
    - Individual competitors qualified from the World Cup results and ranking

⇨ *No Word Cup ranking and WDRC Grand Final in 2020 due to Covid pandemic*

Drone Racing World Cup

	2016	2017	2018	2019	2020	2021
Number of contests	9	16	22	24	20	16
Number of organising countries	7	12	17	19	17	13
Number of registrations	327	575	1004	913		
Average number of partipants per contest	36	36	46	38		
Number of competitors placed	229	434	669	566		
Number of concerned countries	17	37	41	46		
Number of juniors (under 18 years)	18	76	133	149		
Ratio of juniors	*8%*	*18%*	*20%*	*26%*		
Number of concerned countries	4	18	23	28		
Number of women		6	13	15		
Number of concerned countries		6	9	11		
Number of participants placed in:						
9 contests				1		
8 contests				1		
7 contests			1	4		
6 contests	1		9	5		
5 contests		7	10	9		
4 contests	2	7	12	15		
3 contests	11	11	34	50		
2 contests	66	113	144	103		
1 contest	149	296	459	378		
	229	**434**	**669**	**566**		

Edition 2021

- **February 20 CIAM Bureau decision:** World Cups events suspended until May 10 - New evaluation of the situation for the CIAM Plenary Meeting scheduled May 8
- The first event scheduled 21 and 22 May in Denmark have been cancelled by the organizer on March 8 due to expected Covid restrictions
- Next event scheduled 14 and 15 May in North Macedonia

2021/2022 major Drone Racing events *(1/2)*

WDRC Grand Final

- No WDRC Grand Final scheduled end 2021 considering the uncertainties in the prevention and control policies even if China considers to be able to hold it end 2021 applying “Group Quarantine” for the event
- In that situation, 2022 WDRC Grand Final will be awarded to China subject ASFC confirms the location and dates before end June
- Evaluation by ASFC of 3 locations: Shanghai, Taiyuan (Shanxi Province) and Wuxi (Jiangsu Province)

6th Asian Indoor and Martial Arts Games (AIMAG)

- Multi-sport event organized by the Olympic Council of Asia (OCA) every 4 years
- Awarded to Thailand (Bangkok) – Initially scheduled in May 2021 and postponed to March 2022 due to Covid
- Indoor FPV Racing demonstration competition organized on behalf FAI
- 5 Asian national teams with 3 men and 3 women competitions invited in addition to the Thailand national team

2021/2022 major Drone Racing events *(2/2)*

World Games

- Organised by the International World Games Association (IWGA) under patronage of International Olympic Committee (IOC) every 4 years for sports or disciplines not included in the Olympic Games
- Initially planned in 2021 and postponed in **July 2022** due to Covid
- **Hosted in USA** (Birmingham - Alabama)
- **2 Air Sport events:** Canopy Piloting and Drone Racing
- **Format for the Drone Racing event:** 32 athletes (20 men & 12 women)
- **Selection process:**
  - Responsibility of the International Federation (FAI)
  - Selection expected end 2021
  - Consideration for the selection of the last World Cup ranking available (and eventually in addition the 2019 WDRC Grand Final results) to define number of slots per nation

⇨ *12 competitive women will be a difficult challenge to succeed*

FAI Sporting Code Volume F9 Drone Sport *(1/2)*

- **Volume F9 Drone Sport**
  - Drone Racing World Cup rules
  - F9A (Drone Soccer) rules
  - F9U (RV Multi-rotor Drone Racing) rules
- **Content of the Volume** not subject to Plenary Meeting approval considering the provisional statute of the F9A and F9U classes
  ⇨ *Under control of CIAM Bureau with possibility to update at any time during the year*
- **Releases published:**
  - 15 March 2017
  - 15 March 2018
  - 1st January 2019 updated 1st May 2019 *(introduction of F9A class)*
  - 1st January 2020
  - 1st January 2021

FAI Sporting Code Volume F9 Drone Sport *(2/2)*

- **Change introduced in the 1st January 2021 Edition**
  - Changes are mainly generated by the feedback of the previous year
  - Considering there a very few number of competitions in 2020, no reason to do significant changes
  - The only change concerns rule B.1.1 'Weight and size' for Drone Soccer subclass F9A-B: Weight of the drone ball increased to 300 g (instead 200 g actually) - Change supported by tests done in Germany
- **Discussion in the S/C on the following requirement in C.64 (Elimination stage) :**
  - *'Those who will not finish their flight will be ranked considering the distance completed (number of laps and part of the last lap completed), disqualified competitors being placed at the end.'*
  - Different changes proposals have been discussed but without arriving to agree on a change

Evaluation of the F9 rules changes proposals *(1/3)*

- **Proposals relative to F9 Drone Sport Volume published on the Agenda of the 2021 Plenary Meeting Agenda**
  - Evaluation of those proposals must be done in the present e-Technical Meeting with a recommendation for the CIAM Delegates
  - Vote on all Sporting Code proposals scheduled May 1 to 3
  - **2 proposals regarding F9U class both submitted by Russian Federation:**
    - Proposal concerning paragraph 4 (Obstacles) of the Annex C.1 (Racing circuit)
    - Proposal concerning rule C.2 (Racing circuit) or A.9 (Responsibilities of the event organizer)

Evaluation of the F9 rules changes proposals *(2/3)*

a) Annex C.1 - Racing Circuit

In Section 4. Obstacles, add the text shown at the end of the section:

Reasonable efforts should be made by organizers to create or to cover obstacles by shock absorbing materials to protect models in case of a crash.

a. Obstacles support safety. Any obstacle support including rigging (wire, ropes) and other elements of low initial visibility should be perfectly visible with a standard FPV video device at a distance of 30 metres at the time of the flights. It can be special illumination at night time or just some kind of marker, covering all the support and making it visible.

b. Night obstacle illumination. If night heats are supposed to happen, this should be pre-announced. Night track illumination should be tested and done in such a way that a standard FPV camera can be set up for good circuit recognition. Direct disorienting illumination of the flight path should be avoided.

Reason: A lot of traditional obstacles, especially inflatable types have supporting rigging. And sometimes those cables are not clearly seen. Since the sport is evolving and new obstacles are being implemented at a height above the ground, it should be a must for organizers to remember to have every support structure or cable (wire, rope) seen at least as good as the obstacle itself. Also the night flights are very spectacular but should also be specifically planned to not only be good looking, but also safe to pilot.

There may be some kind of optimal average Lux characteristic for the whole track that can be recommended.

Evaluation of the F9 rules changes proposals *(3/3)*

b) C.2 Racing Circuit *or* A.9 Responsibilities of the Event Organiser

The proposal below has been incorporated into the C.2 section of the Drone Racing Rules; however it also suggested that it may also be applicable to A.9 Responsibilities of the Event Organiser.

Any major open (state scale or international) event organizer should obligatory make the circuit public by making a 3-d virtual showcase or a track in any or all the popular simulators and publish it at least one month prior (before) the event.

Only minor changes are allowed following publication and those changes must be justified. *This part needs a clarification in the event that the rule has the above addition.*

If there is a track in the simulator that doesn't have rigs, this should be announced separately. Also the maximum difference between the simulator circuit and the real one should not exceed 30% for obstacle sizes and 20% for distances between them *(these numbers can be debated and become more strict if necessary)*. **The organizer does not take responsibility for unofficial simulator or 3D virtual showcase circuits if such are made.**

Reason: It has become a good tradition in most countries to make tracks-showcases in 3D or tracks for simulators as it: 1) allows the participants be better overall prepared and put on a better show and competition; 2) serves as a marketing purpose, making more pilots come to the events; 3) Supports fairplay and good community spirit. Also the simulators have become a great deal, especially during to Covid pandemic, so we should use it to counter itself and bring people back to the fields, where the sport is as real as it may be.

Since the widespread use of great simulators with nice integrated track builders, the organizer can make this without any special skills. Moreover, this will help plan the track better in any case. Also, if any new element is introduced (without breaking any FAI rules and regulations in Annex 1 - Racing circuit), it should be demonstrated ahead of the event.

Additional scenario ‘Riser system’ *(1/2)*

Riser system proposal

- Proposal submitted by Germany published on the Agenda of the 2020 Plenary Meeting
- The goal of the proposal is to add a new scenario (Riser system) to run the elimination stage (Rule C.6.4)
- The idea of the proposal is to offer possibility to all competitors of the event to participate to the elimination stage after the qualification stage
- The recommendation of the 2020 F9 Technical Meeting (November 14) to refer the proposal back to the F9 Subcommittee for further consideration has been adopted by the CIAM Delegates

Additional scenario ‘Riser system’ *(2/2)*

- **Subcommittee Working Group (WG) set up end December 2020**
  - Chairman: Jose-Manuel Martinez-Ibanez (ESP)
  - Eric LI-KOO (GBR)
  - Henrik SANDAKER PALM (NOR)
  - Noam SMADJA (ISR)
  - Kevin TURNER (USA)
- **Summary of the WG output**
  - The WG considers that the Riser system in its proposed form does not the current Sporting Code
  - New options should be studied to maximize flight opportunities to all competitors, to equalize the number of flights and waiting times before a race, and to minimize the effects of mid-air collisions or video issues