March 16, 2024

2025 F9 Drone Sport Technical Meeting - Saturday 15th March 2025
Minutes

Report by: Bruno Delor, F9 Subcommittee (S/C) Chairman

ATTENDEES: 30 participants from 21 countries

Last Name	First Name	NAC	Position
	Ruben	BEL	F9 Technical Expert
ROMERO	Ignacio	CAN	F9 S/C Member
YANG	Zhuoyue	CHN	CIAM Delegate
CONG	Gu	CHN	Observer
JIANQING	Lai	CHN	Observer
PAPADOPOULOS	Antonis	GRE	CIAM President
BARTO VSKY	Thomas	CZE	CIAM Delegate
MARTINEZ-IBANEZ	Jose Manuel	ESP	F9 S/C Member
PARRA	Alfredo	COL	Observer
DELOR	Bruno	FRA	F9 S/C Chairman
THEUREL	Frederic	FRA	F9 S/C Member
LI-KOO	Eric	GBR	F9 S/C Member
MÖBIUS	Matthias	GER	F9 S/C Member
MÖBIUS	Angelica	GER	Observer
UHLIG	Peter	GER	CIAM Delegate
MIASNIKOV	Ron	ISR	CIAM Technical Secretary
LANZONI	Luigi	ITA	CIAM Alt. Delegate
TAKAHASHI	Tooru	JPN	F9 S/C Member
SHAKIRA	Azman	MAS	Observer
NIKOV	NIKOV	MKD	F9 S/C Member
TODOROSKI	Zdravko	MKD	CIAM Delegate
DOMINIAK	Marek	POL	CIAM Delegate
JAKUBCZAK	Przemyslaw	POL	F9 S/C Member
PELAGIC	Srdjan	SRB	F9 S/C Member
PETIPIERRE	Christophe	SUI	Observer
HJORTH	Lars	SWE	Observer
CHANG	Chen Chi	TPE	F9 Technical Expert
LAU	David	TPE	Observer
LIN	Chu-Pï	TPE	F9 S/C Member
TAYFUN	Can	TUR	Observer

Beginning of the meeting at 09:30 CET time

The pdf file of the slides presented during the meeting and the recording file of the meeting will be uploaded with the present Minutes on the following webpage: https://www.fai.org/ciam-plenary-2025

The different items of the agenda are as follows:

- CIAM F9 Drone Sport Subcommittee *(Slide 4)*
- Status of the F9U class *(Slide 6)*
- F9U class rules changes *(Slides 8 and 9)*
- Racing circuit design and construction (Slide 11)
- Drone Racing activities *(Slides 13 to 15)*
- e-Drone Racing activities *(Slides 17 to 20)*
- Drone Soccer activities *(Slides 22 to 25)*

STATUS OF THE F9U CLASS - *Slide 6*

Drone Racing had been introduced in the FAI Sporting Code on 1st January 2016 as F3U provisional class in category F3 Radio Controlled Flight. This class had been referred as F9U on 1st January 2019 after creating a category F9 Drone Sport.

The 2024 approved to change F9U class from a provisional to an official class to be effective on 1st January 2025.

The consequences for an official class are:

- Period of two years of no changes to model aircraft model specifications (CIAM General Rule A.10.2), while provisional classes are not subject to this two-year rule cycle.
- Each World Championship is held the year for which the rules are not changed (2-year cycle) with possibility to hold Continental Championships the other year (General Rule C.2.1.1).

The WDRC will be held on the even years with the next one in 2026.

In that situation, the F9U rules changes may be considered only on the CIAM Plenary Meeting held on the even years and become effective 1st January of the following year.

The proposals approved by the 2025 CIAM Plenary Meeting will be effective on 1st January 2026 unless to adopt a different implementation date.

F9U CLASS RULES CHANGES - *Slides 8 and 9*

The agenda for the 2025 CIAM Plenary Meeting Agenda includes 16 proposals 16 proposals from the F9A Subcommittee and 5 proposals from Poland.

All proposals submitted by the F9 Subcommittee had been unanimously accepted by the Technical after discussion and by considering changes for the proposal b) C.1.5. Video system and d) C.2. RACING CIRCUIT. See all details in Annex of the present Minutes.

Notes - *Some errors in the Agenda of the CIAM Plenary Meeting:*

- *After the proposal p) C..7.3. Crash from the F9 Subcommittee, the 5 remaining proposals are numbered l) to p) instead q) to u).*
- *The title of the proposal l) from Poland is not correct. Replace "C.6.3. Procedure for the start of the race" by "C.6.3. Qualification stage".*
- *In the proposal q) C.8. REFLIGHTS from the F9 Subcommittee, all the text of the part 8.2. REFLIGHTS had not been transferred correctly. All that part must be in blue colour bold underlined characters.*

The CIAM Delegate from Poland accepted to withdraw their 5 proposals in favour of the proposals from the F9 Subcommittee.

F9U class being official from 1st January 2025, the F9 Technical Meeting recommends to the CIAM Plenary meeting to consider 1st May 2025 as implementation date for all the 16 proposals.

Note: *In that situation, the updated F9 Drone Sports Volume will be applicable for the 2025 World Games Drone Racing event.*

RACING CIRCUIT DESIGN AND CONSTRUCTION - *Slide 11*

The proposal to establish a guide document for the design and construction of a racing track had been unanimously supported.

The working group (WG) will be chaired by Eric LI-KOO (GBR). The following members of the F9 Subcommittee participating to the Technical Meeting are volunteers to participate to the WG:

- Ruben VANDERMEEREN (BEL)
- Ignacio ROMERO (CAN)
- Jose Manual MARTINEZ-IBANEZ (ESP)
- Frédéric THEUREL (FRA)

- Przemyslaw JAKUBCZAK (POL)

Can TAYFUN (TUR) proposed to invite Güçlü ÇETINKOL to participate.

Eric mentions that he will be in situation to fix a deadline to provide the draft of the guide document after having held a kick-off meeting.

2025 RIYADH DRONE RACING WORLD CUP EVENT - *Slide 15*

Jose Manuel MARTINEZ-IBANEZ (ESP) mentioned that competitors addressed him that some competitors had been paid by the organiser to participate and some other not which may pose a problem in terms of fairness to participate and get points for the World Cup ranking.

After some contradictory exchanges, the F9 S/C Chairman Bruno DELOR asked Jose Manuel MARTINEZ-IBANEZ to precise what does he proposes. He proposes a vote to decide if the event must be or not considered for the World Cup ranking. The F9 S/C Chairman put forward that such a vote will require to identify first which rule had been infringed by the organiser.

CIAM President Antonis PAPADOPOULOS mentioned that we got from the organiser the information that all competitors participating in the event had been financially supported similarly (air flight ticket, local transportation, accommodation and beverage).

CIAM had not received after the event any complaint from a competitor, or from his NAC, arguing that after having contacted the organiser to participate the competitor had not been authorised to participate.

Jose Manuel MARTINEZ-IBANEZ concluded that he will transfer the answers received during the Technical Meeting to the pilots that addressed him, and then will decide what to do next.

2025 WORLD DRONE SOCCER CHAMPIONSHIPS - *Slides 23 and 24*

People's Republic of China and Republic of Korea already returned their Preliminary Entry Form by mentioning their intent to register 2 Drone Soccer teams in each subclass.

Participants from France, Germany, Spain and Türkiye mentioned their intent to participate to the 2025 WDRSC.

End of the meeting at 14:40 CET time

- ANNEX -

CIAM Plenary Meeting Agenda - F9U class proposals for rule changes

A lot of submitted proposals for this section were submitted by persons not eligible for this. You may find them on the FAI cloud. All of them were omitted from the Agenda.

a) C.1. GENERAL SPECIFICATIONS FOR MODELS — F9 Subcommittee

Modify as follows:

~~The model must be equipped with a fail-safe device, the triggering of which stops the motors.~~

The model must be equipped with:

- Fail-safe device, the triggering of which stops the motors.

- Pit mode, the triggering of which cuts the video transmission power.

Competitors must have these features configured and understand how to use them.

The following are strictly forbidden:

- Pre-programmed manoeuvring device.

- System for automatic positioning and/or path rectification in longitude, latitude or height.

- Pre-programmed video power increase.

Note: Software recovery modes such as "Flip over after crash" (also known as 'Turtle mode') or "Crash recovery" ~~and automatic system~~ which can be activated by the ~~pilot in order to level back the model~~ **competitor to return the model to an upright position** after a crash are permitted.

Reason:

Introduction of requirement to get the models equipped with a pit mode to avoid video interference from model having stopped in the race.

Clarifications or improvements of the wording.

S/C Vote:

In favour	**24** *100%*
Against	**0**
Abstain	**0**

F9 Technical Meeting: Unanimously accepted

b) C.1.5. Video system — F9 Subcommittee

Modify as follows:

Competitor video device

Analogic and digital video devices operated **solely on the** 5.8 GHz band may be used for piloting. ~~The video receiver system provided by the organiser must be compliant with analogic and digital video transmitters.~~

All models must have pit mode configured.

The maximum output power emission authorised ~~on ground and in flight~~ for any ~~analogic and digital~~ video transmitter is 25 mW, **whether on the ground or in flight and any pre-programmed features to alter this during a flight are strictly forbidden**. ~~In addition,~~

A violation of that requirement may result in penalties up to and including disqualification from the event (see C.9.2) of the competitor concerned.

The video output must be centred on ~~the different~~ designated ~~Raceband~~ frequencies with a 30 MHz maximum bandwidth. ~~Broadcast of an additional signal with the video transmitter is not authorised.~~ Broadcast with the video transmitter of an additional video signal outside the designated frequencies is not authorised.

~~Any digital video device must be set to 25 Mbps maximum.~~

If a competitor chooses to use their own video reception equipment, the video receiver and antenna must be directly mounted to their FPV goggles and extend no more than 160mm above the goggle antenna connector. The use of a personal external video reception equipment, such as antennas mounted on masts, stands, or any extension devices, is prohibited.

Organiser video receiver

The video receiver system used by the organiser must support both analog and digital video transmitters, as well as LHCP and RHCP antenna polarization.

It is recommended that the organiser provides to the competitors flying in the race the access to the video feed available from the organiser ground station.

~~**Note:** In situation of video issues, the organiser may request use of a certain type of VTX antennas with the appropriate polarization.~~

Digital video recorder

Recording of all races by the organiser is strongly recommended ~~in order to permit to review races~~ to enable video reviews as necessary in case of ~~doubt~~ disputes or complaint.

Note: Recordings provided by the competitor concerned, or other competitors or third parties may be considered. However, the recording provided by the organizer shall take precedence in any official decision.

Unwanted 5.8 GHz video emission

~~In order to limit risk of potential problems during the races with unwanted emission, the organiser may define restrictions for use of video transmitters outside the racing circuit.~~

To reduce the risk of interference during races, the organizer may impose restrictions on the use of video transmitters outside the racing circuit.

It is recommended that the organiser provides an RF spectrum analyser to monitor external RF interference and identify malfunctioning competitor equipment.

~~In case of non-authorized activation of a video transmitter, penalty going up to disqualification from the event of the concerned competitor may arise (See C.9.2).~~

Unauthorized activation of any 5.8 GHz video transmitter is strictly prohibited. Such actions may result in penalties up to and including disqualification from the event (see C.9.2) of the competitor concerned, regardless of whether the activation was intentional or not.

Reason:

Introduction of the following requirements:

- *Models must have their pit mode configured.*
- *Prohibit use of external video reception equipment, such as antennas mounted on masts which had been used by some competitors during the 2024 WDRC.*
- *Encourage the organisers to provide to the competitors flying in the race the access to the video feed available from the organiser ground station.*

Mention that failure to comply the VTX 25 mW power emission may result in penalties up to and including disqualification from the event.

Clarifications or improvements of the wording.

S/C Vote:

In favour	**20** *83%*
Against	**4**
Abstain	**0**

F9 Technical Meeting: Unanimously accepted with the changes marked above with green text (Removal of 'Raceband' + Maintaining that broadcast of an additional video signal with the video transmitter is not authorised with clarification of the wording).

c) C.1.5. Video system **POLAND**

Analog~~ic~~ and digital video devices operating on the 5.8GHz band may be used for piloting. The video receiver system provided by the organizer shall be compatible with both analog and digital video transmitters.

The maximum permitted output power for any analog or digital video transmitter, whether on the ground or in flight, is 25mW. The video signal must be centered on ~~different~~ **designated** Raceband frequencies with a maximum bandwidth of 30MHz. ~~Broadcast of an additional signal with the video transmitter is not authorised.~~

~~Any digital video device must be set to 25 Mbps maximum~~

If a competitor chooses to use their own video reception equipment, the video receiver and antenna must be directly mounted to their FPV goggles. The use of external video reception equipment, such as antennas mounted on masts, stands, or any extension devices, is prohibited.

~~Note: In situation of video issues, the organiser may request use of a certain type of VTX antennas with the appropriate polarization.~~

Antenna Polarization Requirement: If the organizer requires competitors to use specific types of VTX antennas with designated polarization to improve signal quality, they shall inform competitors at least one month in advance of the event.

~~Recording of all races by the organiser is strongly recommended in order to permit to review races as necessary in case of doubt or complaint.~~

Recording of Races:

- For all events, recording of all races by the organizer is strongly recommended to facilitate race reviews in case of disputes or complaints.

- For category 1 events, such as the World Drone Racing Championship (WDRC) or The World Games (TWG), race recording by the organizer is mandatory and shall be conducted to ensure reliable review and verification of race results.

~~In order to limit risk of potential problems during the races with unwanted emission, the organiser may define restrictions for use of video transmitters outside the racing circuit~~

To reduce the risk of interference during races, the organizer may impose restrictions on the use of video transmitters outside the racing circuit.

~~In case of non-authorized activation of a video transmitter, penalty going up to disqualification from the event of the concerned competitor may arise (See C.9.2).~~

Unauthorized activation of any transmitter, including but not limited to video transmitters, by a competitor, team member, or any associated individual, that interferes with or disrupts other

competitors' equipment or signals, is strictly prohibited. Such actions may result in penalties up to and including disqualification of the competitor from the event (see C.9.2), regardless of whether the activation was intentional or unintentional.

Reason:

Better structuring and clarity an disambiguity of individual paragraphs/rules.

Replaced "pilot" by "competitor" as in most of the document.

Clarification of antenna/receiver options for competitors to avoid unfair advantages/disadvantages of reception/antenna positioning between individual competitors (local, traveling abroad with high airfare restrictions) and also the safety concern when placing masts between individual pilots.

Removal of "Broadcast of an additional signal with the video transmitter is not authorised." and "Any digital video device must be set to 25 Mbps maximum." As they are both potentially in conflict with HDzero systems which is currently the only approved digital system. The OSD information may be transmitted as additional signal within the allocated frequency. And as long as 30MHz bandwith is kept internal bitrate should not matter in terms of interference for other competitors.

Proposal withdrawn by CIAM Delegate from Poland

d) C.2. RACING CIRCUIT **F9 Subcommittee**

Modify as follows:

The racing circuit may be outdoor or indoor. **The organizer must ensure that the chosen location is suitable for good video reception for the competitors.**

A racing circuit (or track) is a **defined** volume that ~~defines~~ **which contains** a 3D flight path. It ~~is formed by~~ **shall consist of** a start line, obstacles to be crossed or avoided and a finish line.

The ~~racing~~ circuit ~~can~~ **shall** be a closed loop ~~where several~~ **with three** laps ~~must be~~ **to be** complete**d** ~~or an open loop to be flown once~~ **or an open loop to be flown once**. ~~In both cases,~~ **Optionally,** the track ~~can~~ **may** be divided into sectors to facilitate timekeeping.

The minimum length of a racing circuit from the start line to the ~~end~~ **finish** line, including all laps, is 250 m. The length of a track is measured along the centreline of the optimum 3D flight path.

For the start, the models will be placed side by side on a single start line perpendicular to the initial trajectory. The starting positions of the models shall be defined to ensure to provide equal opportunities for the competitors flying in the race.

To minimize risk of a collision between models just after the start, it is recommended to place a 60 to 120 degrees turn before the first gate. In that case, the turn will be marked with a flag positioned as far as possible at least 10 meters away from the start line and from the gate.

The organiser may **choose to** keep the circuit secret or make it public before the event. In both cases, the organiser ~~must~~ **shall** make every effort to prevent ~~giving an~~ **any** unfair advantage ~~to some~~ **for certain** competitors.

If the circuit is made public, it ~~must~~ **shall be published** ~~at least~~ **no later than** one month before the event. ~~Only minor changes are allowed following publication and those changes must be justified. The organiser must inform the competitors immediately after any changes are approved.~~ **After the circuit had been published, only duly justified changes of the circuit may be considered and competitors expected to participate must be informed immediately of any such adjustments.**

If the circuit is kept secret, the main characteristics ~~(~~**such as** approximate length, number of laps, focus~~ed~~ on speed~~/~~ **or** technical ~~/both~~ **elements**, types of obstacles~~, etc.)~~ ~~must~~ **shall be published** ~~at least one month~~ **no later than one month** before the event ~~to~~. **This will** allow ~~time for~~ the competitors to adapt their equipment **for the event** as much as possible ~~for the event~~.

See Annex C.1 for ~~the racing circuit specifications~~ **additional details** and recommendations.

Reason:

Removal of the 'open loop' option for a racing circuit (Only 'close loop' with 3 laps to complete recognised).

Adding in that paragraph of the provisions regarding the start part of the circuit to replace those actually defined in the Annex C.1:

- *Requirements how to place the models on a single start line (with deletion of the possibility to consider an inverted 'V' or '_/' pattern to place the models).*
- *Recommendation to place a turn before the first gate to minimize risk of a collision between models just after the start.*

Improvements of the wording.

S/C Vote:

In favour	**20** *83%*
Against	**2**
Abstain	**2**

F9 Technical Meeting: Unanimously accepted with changes marked above with green text (Maintaining possibility of an open loop circuit + Correction of errors in the initial proposal).

e) C.2. RACING CIRCUIT **POLAND**

The racing circuit may be outdoor or indoor.

A racing circuit (or track) is a volume that defines a 3D flight path. It ~~is formed by~~ **shall consist of** a start line, obstacles to be crossed or avoided and a finish line. The ~~racing~~ circuit can be a closed loop where several laps must be completed ~~or an open loop to be flown once. In both cases~~, **T**he track can be divided into sectors to facilitate timekeeping.

The minimum length of a racing circuit from the start line to the end line, including all laps, is 250 m. The length of a track is measured along the centreline of the optimum 3D flight path.

Official FAI technical experts (from min. 3 individual countries) shall review and approve the racing circuit design and the selection of the pilot seating area to ensure optimal video signal transmission quality and an enhanced race experience for competitors. Name of track designer and approving technical experts shall be public.

The organiser may **choose to** keep the circuit secret or make it public before the event. In both cases, the organiser **shall** ~~must~~ make every effort to prevent ~~giving an unfair advantage to some competitors~~ **any unfair advantage for certain competitors (also see C.5.5 Unauthorized Flights).**

Public Circuits:

If the circuit is made public, it **shall** ~~must~~ be published at least one month before the event. Only minor changes are allowed following publication and ~~those~~ **any** changes must be justified. ~~The organiser must inform the competitors immediately after any changes are approved.~~ **Competitors must be informed immediately of any adjustments.**

Secret Circuits:

If the circuit is kept secret, the main characteristics (**such as** approximate length, number of laps, focus~~ed~~ on speed **or technical elements** ~~/technical/both~~, **and** types of obstacles, ~~etc.~~) **should** ~~must~~ be published at least one month before the event. ~~to allow time for the~~ **This** allows competitors to adapt their equipment **for the event** as much as possible ~~for the event~~.

See Annex C.1 for the racing circuit specifications and recommendations.

Reason:

Better structuring and clarity an disambiguity of individual paragraphs/rules.

Removed open loop tracks option which do not fit to all the rules of qualification and elimination races which all talk about number of laps.

Added the requirement to include technical experts for track design and pilot flight line positioning.

Proposal withdrawn by CIAM Delegate from Poland

f) C.5. PRACTICE FLIGHTS **F9 Subcommittee**

Modify as follows:

C.5. TRACK WALK - **PRACTICE FLIGHTS**

~~At least one practice session or warm up will be organized to ensure track, models and competitors are ready. It must be held on the race circuit.~~

~~The organizer will define the conditions and number of practice sessions. This information must be available at least one month before the event. As suggested options, warm up can be one or more free practice sessions organized by random groups with an allocated time/laps, or a practice race just before the first race.~~

A practice flight session on the racing circuit will be organised.

All competitors will be allocated same time/laps to ensure for all of them the same flight opportunities on the track.

Before the start of the practice flight session, the organizer shall conduct a track walk to allow the competitors to familiarize with the racing circuit.

~~It is mandatory for every competitor to participate on at least one practice session or warm up. If the model is not able to start or crashes immediately after the start, it will be considered a race incident. No reflight will be possible on that practice session. If a competitor has not been able to fly on at least one practice session, the competitor concerned may be not authorized to compete in the event; this is decided by the event director with the consent of the Jury.~~

In order to allow the competitors to warm-up before racing and subject to sufficient time being available, the organizer may plan a practice flight round at the beginning of a competition day other than those for which qualification round(s) are planned.

Flights on the racing circuit other than those **scheduled or** authorized by the **organiser are** strictly forbidden **during the event and before the start of the event**. In case of a violation of that rule, penalty going up to disqualification from the event of the concerned competitor may arise (See C.9.2).

Reason:

Adding of a track walk before the practice flight session, and of the possibility to plan a practice flight round at the beginning of a competition day starting other than those for which qualification round(s) are planned.

Removal of the provisions which are not essential as simplification and improvements of the wording.

S/C Vote:

In favour	**22** *92%*
Against	**2**
Abstain	**0**

F9 Technical Meeting: Unanimously accepted

g) C.5. PRACTICE FLIGHTS **POLAND**

Before the start of the race, the organizer shall conduct a track walk for all willing competitors. Participation in the track walk is encouraged to allow competitors to familiarize themselves with the course layout, obstacles, and key turns prior to racing.

At least one practice session or warm up will be organized to ensure track, models and competitors are ready. It must be held on the race circuit.

The organizer will define the conditions and number of practice sessions. This information must be available at least one month before the event. As suggested options, warm up can be one or more free practice sessions organized by random groups with an allocated time/laps, or a practice race just before the first race. All competitors will be allocated same time/laps to ensure for all of them the same flight opportunities on the track. **It is recommended that the practice groups are same size as qualification groups. There shall be no differentiation of the allocated practice time based on the group size.**

It is mandatory for every competitor to participate on at least one practice session or warm up. If the model is not able to start or crashes immediately after the start, it will be considered a race incident. No reflight will be possible on that practice session. If a competitor has not been able to fly on at least one practice session, the competitor concerned may be not authorized to compete in the event; this is decided by the event director with the consent of the Jury.

If time permits, the organizer may provide a practice round at the start of a race day for elimination or final stages to allow competitors a warm-up before competing.

Flights on the racing circuit other than those authorized by the organiser- **including any time prior to the official event - are** strictly forbidden. In case of a violation of that rule, penalty going up to disqualification from the event of the concerned competitor may arise (See C.9.2).

Reason:

Adding options for Practice round the next day for all active pilots in elimination to warmup before flight. Clarifying the allocated time per practice group for fairness of the time on track.

Type any supporting data for the proposed technical amendments in the space below:

During WDRC 2024 there were larger groups (counting 8 pilots) and much smaller groups (3 pilots) resulting in non equal time for the pilot on the track. The smaller groups could only fly for 6 minutes (2 minutes allocated time per pilot) while larger groups had 16 minutes, resulting in almost triple the available flight time on the track.

Also someone was executing flight on the almost finished track 3 days before the start of the event.

Proposal withdrawn by CIAM Delegate from Poland

h) C.6.1. Timekeeping **F9 Subcommittee**

Modify as follows:

Drone racing consisting to complete three laps in as short a time as possible, an accurate timekeeping of all laps completed is ~~important for~~ **essential to ensure** the quality **and fairness** of the event.

~~In addition, laps which are not finished will no more be considered and contribute to a result, placing or tie-breakers.~~

Laps that are not finished will not be considered and do not contribute to a result, placing or tie-breakers.

Manual timekeeping is not authorised.

~~Wherever possible, t~~imekeeping ~~will~~ be done ~~with a~~ An electronic timing system must be implemented, with appropriate redundancy, in order to ensure complete and permanent reliability of the timekeeping.

~~Note: In case timekeeping will be done without electronic timing system (manual timekeeping only), the organiser must inform the competitors at least one month before the event.~~

For the qualifying stage, timekeeping for each model is triggered when the model passes the gate equipped with the timekeeping sensor(s). After taking off from the start ~~area~~ line, the model must go directly to that gate ~~the gate equipped with the timekeeping sensor(s)~~.

For the elimination stage, final stage and additional rounds optional sequence (See o)), timekeeping is triggered at the start of the race when the start signal is sounded.

Reason:

Deletion of possibility of manual timekeeping.

Improvements of the wording.

S/C Vote:

In favour	**23** *96%*
Against	**1**
Abstain	**0**

F9 Technical Meeting: Unanimously accepted

i) C.6.2. Procedure for the start of the race **F9 Subcommittee**

Modify as follows:

C.6.2. ~~Procedure for the~~ Start of the race

~~The start of the race will be done as follows:~~

~~- After the models have been placed on the start area, the pilots will have two minutes maximum to be ready to start.~~

~~- After the pilots will have confirmed to be ready to the starter, and in any case no later than the two minutes delay above, 'Pilots, arm your quads' will be clearly announced.~~

~~- About three seconds after this announcement and taking care of a similar time for all races, there will be a brief and intelligible sound signal for the start of the race without proceeding a countdown (such as 3, 2, 1) before the start signal~~.

Competitors and helpers shall have a maximum of two minutes to place their models on the start line and prepare them for the race. Any model not ready within this time must be removed from the start line.

The Starter shall announce once the two minutes has elapsed (or sooner if all competitors signal that they are ready to proceed), and all persons must directly exit the track area within 30 seconds.

Competitors and helpers must not return to the models again unless instructed by the Starter, and the start sequence shall commence as soon as the track area is clear.

Start sequence:

- The Starter will clearly announce "Pilots, arm your quads" to indicate that the start is underway.

- There will be an interval of between 2 and 4 seconds after which a single distinct tone will signal the start of the race. There will be no audible countdown preceding the start signal.

~~The starter must immediately stop the race and do a new start when he/she considers that there has been a technical problem with the start signal. Before the restart, the pilots will be given the opportunity to change the battery pack on their model.~~

Restart:

- **If the Starter is made aware of a technical problem during the start procedure then they must immediately stop and reset the sequence.**
- **If two or more models are involved in a mid-air collision before the first gate and the incident results in the involuntary change to the flight path of any of the participating models then the competitors involved can immediately request a restart. If the models continue to fly through the first gate then the race will not be restarted. Only one restart caused by such a collision will be permitted per race. Competitors will be given the opportunity to swap a fresh battery pack before the restart.**

~~Pilot(s) starting before the start signal (model not touching any point of its start area) will be disqualified from the race. The race will not be stopped in order to continue with the other pilots.~~

False start:

- **Any competitor whose model leaves its start position (model not touching any point of its starting position) before the start signal and progresses through the first gate will be disqualified from the race.**
- **If the model leaves its start position as a consequence of factors outside of the competitor's control (e.g.: during the arming sequence) then the competitor must drop to the ground immediately and start the race from the ground after the other competitors have launched (i.e.: from the 'back of the grid'). A competitor starting from the ground and having a mid-air collision during their start will be disqualified from the race.**
- **As soon as a disqualification is announced, the competitor concerned must immediately stop. A violation of that requirement may lead to a disqualification from the event (see C.9.2) of the competitor concerned.**
- **Where possible, the race will proceed without interruption for the remaining competitors. A restart will only be ordered if the Starter deems that the false start has prevented another competitor from starting cleanly and safely.**

Competitors must be prepared before each race with all tools and spares required to achieve a successful start. The start must not be delayed by competitors or helpers needing to retrieve equipment.

Reason:

The actual ruling for the start of a race states 3 seconds after the starter announcement by taking care of a similar time for all races of the event. It looks better to consider an interval between 2 to 4 seconds which a possibility to be randomly different for each race to prevent predictability. As written, the rule change does not oblige to modify the actual timing systems.

Introduction of possibility for a restart in situation of a mid-air collision between models before the first gate.

Clarification of the situation of a model leaving its start position before the start.

Mention that failure to stop after being disqualified for a false start may conduct to a disqualification from the event.

Clarifications and improvements of the wording.

S/C Vote:

In favour	**20** *83%*
Against	**3**
Abstain	**1**

F9 Technical Meeting: Unanimously accepted

j) C.6.2. Procedure for the start of the race **POLAND**

~~The start of the race will be done as follows:~~

~~- After the models have been placed on the start area, the pilots will have two minutes maximum to be ready to start.~~

~~- After the pilots will have confirmed to be ready to the starter, and in any case no later than the two minutes delay above, 'Pilots, arm your quads' will be clearly announced.~~

~~- About three seconds after this announcement and taking care of a similar time for all races, there will be a brief and intelligible sound signal for the start of the race without proceeding a countdown (such as 3, 2, 1) before the start signal.~~

Once the models have been placed on the start area, competitors will have a maximum of two (2) minutes to prepare for the start.

Start sequence:

- When all competitors confirm readiness to the race director, or when the two-minute preparation period concludes, the race director will announce, "Pilots, arm your quads."

- A brief and clear sound signal will initiate the start of the race. The interval between the call of the race director and the sound signal will vary randomly between 2 to 4 seconds, for each heat to prevent predictability. There will be no countdown (e.g., "3, 2, 1") preceding the start signal.

The starter must immediately stop the race and do a new start when he/she considers that there has been a technical problem with the start signal. Before the restart, the pilots will be given the opportunity to change the battery pack on their model.

~~Pilot(s) starting before the start signal (model not touching any point of its start area) will be disqualified from the race. The race will not be stopped in order to continue with the other pilots.~~

False start:

- Any competitor whose model leaves the start area (model not touching any point of its start area) before the start signal will be disqualified from the race.

- The race will proceed without interruption for the remaining competitors.

Hole-shot rule:

If a collision between 2 or more quads occurs before the first obstacle [timing gate], and results in the involuntary change in the flight path of any of the participating quads - the pilots involved can request a race restart, but they have to do so immediately. If they continue to fly past the timing gate then the race will not be restarted.

Reason:

Better structuring and clarity a disambiguity of individual paragraphs/rules.

Added clarity on starting sound being randomly timed. "Similar" was a point of discussion on some events...

The holeshot rule is necessary because at the time of a collision - the pilot is not in control, the flight control software takes over for a brief period of time.

Proposal withdrawn by CIAM Delegate from Poland

k) C.6.3. Qualification stage **F9 Subcommittee**

Modify and complete as follows the two first sentences:

The number of qualifying rounds is defined by the organiser ~~according to~~ **by considering** the available time with~~, whenever possible,~~ a minimum of 3 (three) qualifying rounds.

The organiser shall announce no later than one month before the event how many qualifying rounds are expected to be held..

~~Every~~ **All races for the** qualifying ~~round~~ **stage** will be ~~run~~ **limited to 3 minutes flight time** with 3 consecutive laps to complete ~~and 3 minutes flight time allowed for that. When the~~ **As soon as a** competitor has completed 3 laps or when the **3 minutes** flight time ~~allowed~~ is over, he/she must land the model.

Reason:

Adding of the obligation for the organiser to announce before the event how many qualifying rounds are expected to be held. That is an important information for the lowest-performing competitors in order to decide on their participation.

Clarifications and improvements of the wording.

S/C Vote:

In favour	**17** *71%*
Against	**2**
Abstain	**5**

F9 Technical Meeting: Unanimously accepted

l) C.6.3. Qualification stage **POLAND**

Note: A different draw for each qualifying round is recommended in order to avoid the same competitors fly in the same group for all qualifying rounds. In any case, the same draw cannot be applied to more than three qualifying rounds.

After an initial randomly-seeded qualifying round, the race director may, in consultation with the Jury and with the unanimous approval of team managers or attending competitors, organize subsequent qualifying rounds into groups based on competitors' speeds (e.g., faster competitors grouped together, slower competitors grouped together).

Reason:

This adjustment aims to improve safety by reducing the risk of collisions between faster and slower competitors and to improve overall efficiency. This will also improve the time of the qualification round as faster pilots will finish their race in much shorter time thus there is possibility to utilize the available time to run more qualifications.

Proposal withdrawn by CIAM Delegate from Poland

m) C.6.4. Elimination stage **F9 Subcommittee**

Modify and complete as follows the third sentence:

All races will be ~~run~~ **limited to 3 minutes flight time** with 3 consecutive laps to complete ~~and 3 minutes flight time allowed for that. When the~~ **As soon as a** competitor has completed 3 laps or when the **3 minutes** flight time ~~allowed~~ is over, he/she must land the model.

Reason:

Clarification.

S/C Vote:

In favour	**20** *83%*
Against	**2**
Abstain	**2**

F9 Technical Meeting: Unanimously accepted

n) C.6.5. Final stage — F9 Subcommittee

Modify and complete as follows the two first sentences:

The organizer must clearly inform the competitors before the competition begins ~~which option for~~ if the final stage will be ~~applied~~ **run with a single final race, or with successive final races (See C.6.5.3)**. If it is not done, the final must be run with ~~only~~ one single final race.

~~The number of laps to complete in each final race will be the same as for the elimination stage.~~ **Each final race will be limited to 3 minutes flight time with 3 consecutive laps to complete. As soon as a competitor has completed 3 laps or when the 3 minutes flight time is over, he/she must land the model.**

The placing for each final race is determined by considering the registered time to complete 3 laps. Those who do not finish their flight will be placed in the race considering the number of laps they did complete and the registered time in which those laps were completed. Disqualified competitor(s) will be placed at the end after the competitors getting a registered time or having not finished their first lap.

In case of a tie for the first, second or place in the final stage ranking, an additional race will be organised with the competitors concerned to split their tie.

Reason:

Clarification and improvement of the wording.

S/C Vote:

In favour	**22** *92%*
Against	**1**
Abstain	**1**

F9 Technical Meeting: Unanimously accepted

o) C.6.6. Additional rounds optional sequence — F9 Subcommittee

Modify as follows:

This sequence **which** is optional ~~. This option allows~~ **gives a possibility to** the competitors who are not selected to fly in the first elimination round after the qualification stage ~~to be entitled~~ to participate to additional rounds ~~to determine their final~~ **and improve their** placing.

~~The organiser must inform the competitors at least one month before the event if additional rounds sequence will be applied or not, and when applied how it will be organized.~~

The additional rounds sequence may be organized, **but not only:**

- with successive eliminating rounds as proceeded for the elimination stage (See 6.6.4);
- or with a fixed number of **additional** rounds ~~for all concerned competitors~~.

In case additional rounds are planned, the organiser must inform properly the competitors how that sequence will be organised and the results taken into account for the final classification of the competitors concerned.

~~**Additional rounds sequence based on a fixed number of rounds for all concerned competitors**~~

~~The number of additional rounds is defined by the organiser considering the available time.~~

~~Composition and flight order of the groups will be determined with a blind draw. The draw will be different for each additional round.~~

~~All races will be run with 3 consecutive laps to complete and 3 minutes flight time allowed for that. When the competitor has completed 3 laps or when the flight time allowed is over, he/she must land the model.~~

~~The result of each competitor in each additional round is the registered time to complete the 3 consecutive laps. For a competitor not completing 3 laps, the number of laps completed and the corresponding registered time will be considered for the result.~~

~~The ranking at the end of the additional rounds will be established taking into account the best result obtained by each competitor on their additional rounds. The competitors with a time on 3 laps are ranked ahead those with a time on 2 laps which in turn are ranked ahead those with only 1 lap. Those who have been able to get any registered time are ranked at the end.~~

~~In case of ties, the placing in the ranking established at the end of the qualifying stage will be considered to split the tie for the concerned competitors.~~

Reason:

The possibility of additional rounds is very rarely applied in Open International events. It had been mainly applied for the different World Drone Racing Championships (WDRC) for which a specific sporting rules document needs to be published to define which scenario for the elimination stage and which options defined of the rules will be applied,and how will be established the different classifications (Overall, junior and Female).

So, it looks better to give flexibility to the organisers to choose, where appropriate how to run an additional rounds sequence instead to consider in their event local deviation of the rules for the additional rounds sequence.

S/C Vote:

In favour	**18** *75%*
Against	**1**
Abstain	**5**

F9 Technical Meeting: Unanimously accepted

p) C.7.3. Crash **F9 Subcommittee**

Modify as follows:

If a model cannot go on after a crash, it must stay on the ground with motors cut off until the end of the race.

The competitor concerned must immediately activate the pit mode on their model to avoid causing video interference for the other competitors still flying in the race.

The ~~pilot~~ **competitor** must clearly indicate that he/she stopped the race by removing his/her headset google.

The ~~pilot~~ **competitor** and the helper must then stay quiet in their position until the race is finished ~~for all pilots~~.

Reason:

Clarification resulting from the introduction in paragraph C.1. GENERAL SPECIFICATIONS FOR MODELS of the obligation to equip the models with a pit mode.

S/C Vote:

In favour	**23** *96%*
Against	**0**
Abstain	**1**

F9 Technical Meeting: Unanimously accepted

q) C.8. REFLIGHTS **F9 Subcommittee**

C.8.1. Reflights

Possibility of an individual reflight will only be considered for the qualification stage **in situations where an incident outside of the competitor's control prevents them from completing their flight.**

The reflights will be organised at the end of the qualifying round concerned, or as part of any race that ~~have~~ **has** fewer than the required number of competitors.

For any competitor being granted a reflight, the original flight for which the competitor has been granted the reflight is then definitively cancelled.

For the rest of the competition (elimination stage, final stage and, where appropriate, additional rounds sequence), individual reflights will not be awarded. ~~In those situations, a video issue or collision with another model will be considered as a race incident with no reflight possibility.~~

C.8.2. Restarts

A full race restart will be considered for the elimination stage, final stage and, where appropriate, additional rounds sequence, in the following situations:

- **Mid-air collision occurring before the first gate. Only one restart will be allowed per race.**
- **Critical safety incident (such as a fire, or unauthorised person on the track) requiring the Starter to stop the race.**
- **External incident preventing** one or more competitors from competing fairly.
- **Deliberate incident by a competitor taking part in the race that is identified to have given them an unfair advantage over the other competitors in that race.**

Will be excluded from restarts any competitor:

- **who caused the safety incident,**
- **who had already signalled they were out of the race (by removing their goggles) at the time of such an incident,**
- **found to have given themselves unfair advantage through contravening the rules.**

Competitors will be given the opportunity to swap a fresh battery pack before the restart.

Reason:

Introduction of possibility of a full race restart for the elimination stage; final stage and additional rounds sequence.

Clarification and improvement of the wording.

S/C Vote:

In favour	**21** *88%*
Against	**3**
Abstain	**0**

F9 Technical Meeting: Unanimously accepted

r) C.9.2. Disqualification from the event **F9 Subcommittee**

Complete as follows the situations which may conduct to the disqualification from the event:

Disqualification from the event may be considered in the following situations:

- Use of ~~an~~ **a non-authorized RC equipment (See C.1.4), or another equipment that does not conform to the rules.**
- **Power emission of a video transmitter over the maximum authorised (See C.1.5).**
- **Non-authorized activation of a video transmitter (See C.1.5).**
- **Use during the competition of a same model by different competitors (See C.3).**
- **Use of a model that does not fit the specifications stated in the rules (See C.4).**
- **Flight on the racing circuit other than those scheduled or authorized by the organiser (See C.5).**
- **Competitor not stopping after having been disqualified for a false start (See C.6.2).**
- ~~Deliberate very dangerous and/or unsporting behaviour.~~
- **Cheating or unsporting behaviour according to the CIAM General Rules Volume (See C.19).**

Reason:

As a clarification, the paragraph had been completed to refer all situations defined in the class rules which may justify a disqualification from the event.

S/C Vote:

In favour	**24** *100%*
Against	**0**
Abstain	**0**

F9 Technical Meeting: Unanimously accepted

s) C.10.3. Judges **F9 Subcommittee**

Modify as follows:

~~Considering recording of the races is strongly recommended (See C.1.5), judges assigned to check the performance of the pilots are not an obligation. Where judges are assigned to pilots, the organiser may arrange for dedicated judges or select competitors to fulfil the role; potential conflict of interest situation will be avoided by ensuring that judges will not judge a competitor from their own country.~~

~~**Note:** Recordings provided by the competitor concerned, or other competitors or third parties may be considered. In any case, the recording provided by the organiser will prevail.~~

Judges in charge to monitor the performance of the competitors flying in the race are mandatory.

A different judge assigned to each competitor is recommended. The organiser may arrange for dedicated judges or select competitors to fulfil the role.

~~Judges assigned will have a video device (video screen, headset or goggles) allowing them to follow the flight of their assigned pilot, sharing the same picture as the pilot.~~

~~The judge will monitor that the pilot follows the circuit and crosses every gate and obstacle correctly. He/she will notify the competitor or the helper only when the competitor has finished its race or have been disqualified. The other notifications will be addressed when the race is finished.~~

Judges must have a video device, such as video screen, headset or goggles to validate that the competitors follow the designated flight path and cross every gate and obstacle correctly.

Except for a disqualification, notifications to a competitor or helper should be provided by the judges only after the race is finished, so as not to disturb the other competitors still flying.

~~Other judges may be assigned by the organizer to perform tasks such as supervision of the pilot judges, monitoring that models stay in visual line of sight or don't cross the safety line, information of the competitors, etc.~~

The organizer may appoint additional judges to perform specific tasks, including supervision of the judges, ensuring that models remain in visual line of sight, monitoring compliance with safety boundaries, and providing information to the competitors.

Reason:

Removal of the requirement that a judge will not judge competitors from their own country by considering this is not realistic for CAT2 events.

Clarifications and improvements of the wording.

S/C Vote:

In favour	**22** *92%*
Against	**1**
Abstain	**1**

F9 Technical Meeting: Unanimously accepted

t) C.12. COMPETITORS INFORMATION **F9 Subcommittee**

Modify as follows:

The organiser must display on ~~the~~ site **in an appropriate place such as the competitors area:**

- ~~Jury composition~~ **List of the officials.**
- Start list for every round **with the names of the competitors.**
- **Video channels and, where appropriate, LED light color allocation.**
- Results after every round **with the names of the competitors**.
- ~~Rankings.~~
- **Qualification stage ranking and final ranking.**

In each round, the following races must be clearly announced so the competitors concerned may be prepared to go without hurry to the pre-flight or in waiting area.

Note: A posting on Internet is also advised ~~if conditions permit it, in order to make it possible for~~ to allow those who are not at the site to follow the progress of the event.

Reason:

Clarification.

S/C Vote:

In favour	**22** *92%*
Against	**0**
Abstain	**2**

F9 Technical Meeting: Unanimously accepted

u) ANNEX C.1. RACING CIRCUIT **F9 Subcommittee**

Remove the paragraph 3. Start, and renumber consequently the following paragraphs.

Correct as follows the note in paragraph 4. Obstacles.

Note: Small gates/obstacles are not recommended considering this increases the risk of collisions between ~~drone balls~~ models passing the gate/obstacle at the same moment.

Reason:

The removal of the paragraph 3 is the consequence of the introduction in paragraph C.2. RACING CIRCUIT of specifications regarding the starting part of the racing circuit.

Correction of a typing error in the paragraph 4. Obstacles.

S/C Vote:

In favour	**22** *92%*
Against	**1**
Abstain	**1**

F9 Technical Meeting: Unanimously accepted