Fédération Aéronautique Internationale

Agenda

of the Plenary Meeting of the FAI Aeromodelling Commission

To be held at Maison du Sport International in Lausanne, Switzerland on 28th and 29th March 2025

Version 1.0

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AGENDA
CIAM PLENARY MEETING 2025

to be held at Maison du Sport International in Lausanne, Switzerland
on Friday 28 March at 12.30 (CEST) and 29 March 2025, at 9.15 (CEST)

1. PLENARY MEETING SCHEDULE AND TECHNICAL MEETINGS

After confirmation by the relevant Subcommittee Chairmen, the following Technical Meetings will be held this year: F1, F3 Soaring, F3 Helicopters, F3 Aerobatic, F5, F9 Drone Sports, Space Models and Education.

The Technical Meetings will take place via Zoom before the CIAM Plenary Meeting. One additional session will be held related to the CIAM General Rules. The updated Schedule of the Technical Meetings can be found on the FAI website https://fai.org/ciam-plenary-2025.

Please consult this page regularly since you will be able to find all the details and documents for all sessions.

The program of the Technical Meetings is the following:

	9:30	13:00	18:00
February 22, Saturday		F3 Soaring	F1 Free Flight
February 23, Sunday		CIAM General Rules	
March 1, Saturday	Space Model		
March 9, Sunday		F3 Helicopters	
March 15, Saturday	F9 Drone Sport	F3 Aerobatic	
March 16, Sunday	Education	F5 Electric	

All times for the Technical Meetings are as of Lausanne (CET).

2. DECLARATION OF CONFLICTS OF INTEREST (ANNEX 1a)

Declarations, according to the FAI Code of Ethics will be received.

3. PRESENTATION IN MEMORIAM

4. MINUTES OF THE PLENARY MEETING, AND OF THE DECEMBER 2024 BUREAU MEETING

4.1. **2024 Plenary**

- 4.1.1. Corrections
- 4.1.2. Approval
- 4.1.3. Matters Arising.

4.2. **2024 December Bureau Meeting**

- 4.2.1. Corrections
- 4.2.2. Approval
- 4.2.3. Matters Arising

5. MARCH 2025 BUREAU MEETING DECISIONS`

Distribution and comments of the March 2025 Bureau Meeting decisions.

6. NOMINATION AND ELECTION OF SUBCOMMITTEE CHAIRMEN (ANNEX 1b)

6.1. Subcommittee Chairmen to be elected

- F1 Free Flight
- F3 RC Aerobatics
- F3 RC Soaring
- F3 RC Helicopter
- F3 RC Pylon Racing
- S Space Models

Note. Since this will be a physical meeting, according to FAI rules, voting rights are held solely by NACs which are represented at the Plenary Meeting by a Delegate or an Alternate Delegate who is present at the time of voting, or NACs which have given their proxy to a NAC whose Delegate or Alternate Delegate is physically present at the time of voting.

6.2. Subcommittee Chairmen to be confirmed

- F2 Control Line
- F4 Scale
- F5 RC Electric
- F7 RC Aerostats
- F9 Drone Sport
- Education

7. REPORTS

7.1. 2024 FAI General Conference, by the FAI Secretary General

7.2. CIAM Bureau report on its activity since the last Plenary, by CIAM President, Antonis Papadopoulos

7.3. 2024 FAI World and Continental Championships, by the Jury Chairmen (ANNEX 2)

7.3.1. 2024 FAI F1A, F1B, F1P Juniors World Championship for Free Flight Model Aircraft. Per Findahl

7.3.2. 2024 FAI F1D World Championship for Free Flight Indoor Model Aircraft. Ian Kaynes

7.3.3. 2024 FAI F2 World Championships for Control Line Model Aircraft. Massimo Semoli

7.3.4. 2024 FAI F3F World Championship for Slope Soaring. Tomas Bartovsky

7.3.5. 2024 FAI F3J World Championship for Model Gliders. Tomas Bartovsky

7.3.6. 2024 FAI F4CH World Championship for Scale Model Aircraft. Narve Jensen

7.3.7. 2024 FAI F5B World Championship for Electric Model Aircraft. Narve Jensen

7.3.8. 2024 FAI Drone Racing World Championship. Bruno Delor

7.3.9. 2024 FAI F1A, F1B, F1C European Championships for Free Flight Model Aircraft. Ian Kaynes

7.3.10. 2024 FAI F1 Asian-Oceanic Championship for Free Flight Model Aircraft. Zoran Pelagic

7.3.11. 2024 FAI F1E European Championship for Free Flight Model Aircraft. Emil Giezendanner
7.3.12. 2024 FAI F3A European Championship for Aerobatic Model Aircraft. Peter Uhlig
7.3.13. 2024 FAI F3CN European Championships for Model Helicopter. Stefan Wolf
7.3.14. 2024 FAI F3K European Championship for Soaring Models. Tomas Bartovsky
7.3.15. 2024 FAI F5J European Championship for Electric Model Aircraft. Andras Ree
7.3.16. 2024 FAI European Championships for Space Models. Narve Jensen

7.4. **2024 Sporting Code Section 4: CIAM Technical Secretary, Mrs Ron Miasnikov (ANNEX 3)**

7.5. **2024 Subcommittee Chairmen (ANNEX 3)**

7.5.1. Free Flight: Ian Kaynes
7.5.2. Control Line: Pavol Barbaric
7.5.3. RC Aerobatics: Peter Uhlig
7.5.4. RC Soaring: Tomas Bartovsky
7.5.5. RC Helicopters: Stefan Wolf
7.5.6. RC Pylon: Barrie Lever
7.5.7. RC Scale: Pal Linden Anthonisen
7.5.8. RC Electric: Sotir Lazarkov
7.5.9. Aerostats: Johannes Eissing
7.5.10. Drone Sport: Bruno Delor
7.5.11. Space Models: Zoran Pelagic
7.5.12. Education: Per Findahl

7.6. **2024 World Cups, by World Cup Coordinators (ANNEX 4)**

7.6.1. Free Flight World Cup: Ian Kaynes
7.6.2. Control Line World Cup: Pavol Barbaric
7.6.3. RC Aerobatics World Cup: Rob Romijn
7.6.4. RC Thermal Soaring and Duration Gliders World Cup: Tomas Bartovsky
7.6.5. RC Helicopter World Cup: Ian Emery
7.6.6. RC Slope Soaring World Cup: Lukas Gaubatz
7.6.7. RC Hand Launch Gliders World Cup: Eric Dahl Christensen
7.6.8. RC Pylon Racing World Cup: Robbert Van Den Bosch
7.6.9. RC Drone Racing World Cup: Bruno Delor
7.6.10. RC Electric Powered Motor Gliders World Cup: Sotir Lazarkov
7.6.11. Space Models World Cup: Dragan Jevtic

7.7. **2024 Trophy Report, by CIAM Secretary, Massimo Semoli (ANNEX 5)**

7.8. **Aeromodelling Fund- Budget 2025 by the Treasurer, Andras Ree (ANNEX 3)**

7.9. **CIAM Flyer, by the Editor, Emil Giezendanner (ANNEX 3)**

7.10. **EDIC WG report, by Chairman, Manfred Lex (ANNEX 3)**

8. PRESENTATION OF 2024 FAI WORLD CHAMPIONSHIPS MEDALS COUNT PER NATION

9. PRESENTATION OF THE 2024 WORLD CUP AWARDS

PRESENTATION FOR
The 2024 World Cup awards for classes F1A, F1A junior, F1B, F1B junior, F1C, F1E, F1E junior, F1Q, F1Q junior, F2A, F2B, F2C, F2D, F2A junior, F2B junior, F2C junior F2D junior, F3A, F3B, F3C, F3D, F3F, F3K, F3T, F3J, F5J, F9U, e-F9U, S4A, S6A, S7, S8P and S9A. Diplomas only will be awarded for the class F1N.

The medals and diplomas will be available after the end of the Plenary.

10. SCHOLARSHIP SELECTION APPROVAL (ANNEX 8)

- Florian JACKEL (GER)
- L.E.F. STRUIK (NED)
- Edward MELVILLE (GBR)
- Tomasz JERZIORNY (POL)
- Noa GOLDSTEIN (USA)

11. NOMINATIONS FOR FAI-CIAM AWARDS (ANNEX 6)

Alphonse Penaud Diploma

- Dezso ORSOVAI (HUN)
- Slawomir LASOCHA (POL)
- Hans STOLL (SUI)

Andrei Tupolev Diploma

- Jože ČUDEN (SLO)

Antonov Diploma

- Angel TODOROV (BUL)
- Branko BIJELIC (SRB)

Frank Ehling Diploma

- Branko BIJELIC (SRB)

FAI Aeromodelling Gold Medal

- Carles AYMAT (ESP)
- Wolfgang SCHULZ (GER)

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12. AWARDS - THE FAI SPORT MEDAL

- Peter GERMANN (SUI) The FAI SPORT MEDAL
- Emil GIEZENDANNER (SUI) The FAI SPORT MEDAL
- Luisa RIZZO (ITA) TWG ATHLETE OF THE YEAR

ITEM NUMBER 13 IS INTENTIONALLY NOT USED

14. SPORTING CODE PROPOSALS

The Agenda contains all the proposals received by the FAI Office according to the manner required in rule A.10.

Additions in proposals are shown in **blue characters** and deletions as ~~strikethrough.~~

Each section begins on a new page.

The text of the submitted proposals may have been changed to correct the English grammar or to improve clarity and understanding. Technical Secretary notes should be addressed, if required, at the Technical Meetings.

After the end of each Technical Meeting, the minutes will be published and there will be an online voting. Proposals that will be unanimously approved will not be discussed during the Plenary Meeting to save time. The rest of the proposals will be discussed during the Plenary and the present delegates will vote.

14.1 Volume CIAM General Rules

a) Class: F3L B.1.2.3 — SLOVENIA / GERMANY

B.1.2.3 Category F3 - Radio Controlled Flight
…
i) Official classes
…
F3L - RC Thermal Gliders RES
…
ii) Provisional classes
…
~~F3L - RC Thermal Gliders RES~~
…

Reason

Since the introduction of the F3L class, the popularity of this class has risen sharply. Furthermore, many international F3L competitions have been organized in recent years in various countries in Europe and America. In Europe: Austria, Great Britain, France, Germany, Czech Republic, Slovakia, Italy, Switzerland, Slovenia and Turkey. Some of these competitions have been registered with the FAI as international competitions.

b) B.2.2 Classification of Space Models — UNITED KINGDOM

Each class, except class S7, is divided into subclasses defined as follows according to total impulse (in Newton-seconds):
A/2 – 0.00 to 1.25 Ns
A - ~~0.00~~ 1.26 to 2.50 Ns
B - 2.51 to 5.00 Ns
C - 5.01 to 10.00 Ns
D - 10.01 to 20.00 Ns
E - 20.01 to 40.00 Ns
F - 40.01 to 80.00 Ns
~~A Subclass A/2 (0.00 to 1.25 Ns) is also defined mainly for teaching beginners and for their practice.~~

Reason

Class A/2 should exist in its own right. Many countries opt to conduct their national events on A/2 motors and do so successfully.
Availability of large flying fields is becoming increasingly difficult for the regular use of full A motors in championship categories.

Technical Secretary note: This proposal requires first the comments / recommendation from the SM S/C TM.

c) C.2.1.2 Continental Championships, paragraph (a) USA

Update the country participation requirements for Continental Championships.

C.2.1.2 Continental Championships

a) These are international events in which the competitors must be nominated by their NACs and must be persons or teams from at least ~~four different nations~~ **half of the nation's participating in the specific aeromodelling discipline** from one Continental Region defined in the General Section of the FAI Sporting Code. For the European region, the required participation must be from at least six different countries. These events are for individual and possibly team classification and will be organised only in the years when there is no World Championship in the particular class.

Reason

On some continents, the number of countries participating in aero sports is very limited. For example, North America has only four nations with aeromodelling participation (USA, Canada, Cuba, and Nicaragua). The proposed change would make holding North American Championships possible and have no effect on European championships.

d) C.5.2 Team Manager UNITED KINGDOM

b) For Free Flight, Control Line, RC Soaring, Scale and Space Model contests, the team manager may have an assistant, registered with the organiser, who will have the same duties as the team manager ~~except that the assistant will not be allowed to deal with the Jury or the Organiser except to deliver protests~~.

Reason

National teams are becoming smaller and the presence of the TM, who often is a flying competitor, is not always feasible at all times during the contest. TMA should have equal rights and responsibilities as TM to fulfil their duties.

e) C.5.3 National Team UNITED KINGDOM

a) For those categories that do not have separate Junior World and Continental Championships, a national team may consist of a maximum of 5 individual competitors or 5 pairs of competitors for each category, providing that at least one competitor (or pair) is Female and at least one is Junior; and a Team Manager.

All Females and Juniors will compete for the overall individual classification. Additionally, there is a separate ~~Female classification and a separate~~ Junior classification, ~~both~~ with FAI medals and diplomas, depending on the provisions as described in C.15.6.

b) For those categories that have separate Junior World and Continental Championships, the national team may consist of a maximum of 4 competitors (or pairs), providing at least one competitor (or pair) is Female; and a Team Manager.

~~All Females will compete for the overall individual classification. Additionally, there is a Female classification with FAI medals and diplomas, depending on the provisions as described in C.15.6.~~

Reason

As witnessed during Cat.1 events since inception of the 4th team member expansion and Cat.2 events, female competitors often outperform their male counterparts on merit. The expansion of teams to 4 team members is encouraging enough to increase entries.

A separate female classification is discriminatory as female competitors are equally skilled. Their physique does not prevent them from achieving high results.

Further to that, when categories are not so heavily occupied by females the classification could often be incomplete, and therefore medals cannot be awarded and impose additional cost to organisers for preparing awards.

f) C.10.2 Space Models — UNITED KINGDOM

S1A, B, C, D, E, F ..... Two (2) only

S2C, E, F ..... Two (2) only

S3A/2, A, B, C, D ..... Two (2) only

S4A/2, A, B, C, D, E, F ..... Two (2) only

S5A, B, C, D, E, F ..... One (1) only

S6A/2, A, B, C, D ..... Two (2) only

S7 ..... One (1) only

S8A, B, C, D, E, P, F ..... Two (2) only

S9A/2, A, B, C, D .....Two (2) only

Reason

Class A/2 should exist in its own right. Many countries opt to conduct their national events on A/2 motors and do so successfully.

Availability of large flying fields is becoming increasingly difficult for the regular use of full A motors in championship categories.

Technical Secretary note: This proposal requires first the comments / recommendation from the SM S/C TM.

g) C.11.1 Class F - Model Aircraft — ITALY

a) Model aircraft, except for Indoor Free Flight, F3P – Radio Control Indoor Aerobatic Aircraft and Scale, for CAT # 1 Competitions shall have the FAI Sticker fully filled and must be mark by the Organizer Official at Model Processing, for Cat # 2 it is recommended to have a registration sticker provided by the competition organizers.

~~i. The national identification mark followed by the FAI Unique ID number. The letters and numbers must be at least 25 mm high and appear at least once on each model (on the upper surface of a wing for Free Flight models).~~

~~Note: The list of the national identification marks (3 letters per country) is downloadable from "Documents" section of the CIAM website http://www.fai.org/ciam-documents.~~

~~Note: The mandatory carrying of the FAI ID number shall commence in 2022.~~

~~ii. A model identification code (letters and/or numbers). This code has to be different for each nominated model aircraft of the competitor. The model identification code is to appear on each main part of the model (wing(s), tail, front and rear fuselage if detachable) so that the individual parts of a competitor's different models may be separately identified. The letters and/or numbers must be at least 10 mm high and clearly visible. The identification code of the nominated models shall be recorded on the score card. For World or Continental Championships this must be recorded on the Model Aircraft Specification Certificate.~~

~~b) A model aircraft must not carry a national identification mark, an FAI licence number or an FAI sticker which relates to any person other than the competitor. At the processing of the model aircraft, the organiser must mark each FAI sticker (if required).~~

Reason

It is useless TO HAVE rules which are not controlled and even sanctioned by Competition Organizers Officials during Model Processing.

Several time competitors participating to Cat # 1 and # 2 competition compete with model presenting various interpretations of the in subject rules like:

- FAI ID XXXX
- NAC FAI ID XXXX
- ONLY NATIONAL FAI ID
- MODEL IDENTIFICATION CODE INSIDE THE MODEL
- FAI ID OR NATIONAL FAI NUMBER OF OTHERS COMPETITORS
- FAI ID ON THE WING BOTTOM OR ON THE FUSELAGE BELLY
- NO FAI ID PRESENT ON THE MODEL

All the above cases have been experienced several times.

Technical Secretary note: A similar proposal was part of the 2024 Agenda and was rejected by the Plenary. According to CIAM GR A.10.2 g this proposal is not considered by the Plenary

h) C.11.2 Class S - Space models — ITALY

C.11.2 Class S - Space models

a) A space model shall carry, prominently displayed upon its body, fins, or other exterior part, the FAI Unique ID number.

b) The letters and numbers must be approximately one (1) centimetre high except in classes S5 and S7 where it is 7 mm for the 1st stage and 4 mm for upper stages.

c) The name, national insignia, or national identification mark of the competitor's nation must be displayed on the exterior of the model.

d) ~~A light coloured area of minimum dimensions 1 cm by 3 cm must be provided for the organiser's processing mark~~ **The organizers/jury must affix the processing mark and/or sticker on the exterior of the model** except in classes S5 and S7 where the mark shall be put on interior of the model during scale judging.

***Note**: The mandatory carrying of the FAI ID number shall commence in 2022.*

Reason

With the current carbon models, it is not possible to comply with the requirement to provide a light-colored area for the processing mark to be placed by the organizers/jury. The current practice by the organizers/jury is to use permanent markers that are visible even on a black background. Furthermore, the use, also common, of marked adhesive sticks by the organizers/jury leaves them free to choose the area where to place the processing mark.

Technical Secretary note: This proposal requires first the comments / recommendation from the SM S/C TM.

i) Class: S1, S2, S5 **ITALY**

C.12 MODEL PROCESSING

{omitted}

g) For classes S1, S2P, S5 the cost of the altimeter provided by the organization must not exceed 80 EUR. In case the competitor needs other altimeters, after having lost or damaged the first one, the cost of these subsequent altimeters must be reduced by 30%.

Reason

S - Space Models

The relatively high cost of altimeters, paid by the competitors, is a considerable limitation for a fair conduct of the competition from a sporting point of view. Many competitors prefer not to make launches, especially after having already lost/damaged an altimeter, for fear of having to pay another sum of money.

Considerations:

1) The use of altimeters and the payment in case of loss/damage cannot constitute a source of income for the organizers/producers during a World/Continental Championships. It is necessary to establish an amount of adequate value for the altimeter that covers only the costs of production and materials without any mark-up. The suggested price is 80 EUR;

Technical Secretary note: This proposal requires first the comments / recommendation from the SM S/C TM.

j) C.13.6 Female classification in an Open International — UNITED KINGDOM

~~C.13.6 Female classification in an Open International~~

~~If there are three or more female entries in an Open International, there must be a separate Female classification included in the results.~~

Reason

As witnessed during Cat.1 events since inception of the 4th team member expansion and Cat.2 events, female competitors often outperform their male counterparts on merit. The expansion of teams to 4 team members is encouraging enough to increase entries.

A separate female classification is discriminatory as female competitors are equally skilled. Their physique does not prevent them from achieving high results.

Further to that, when categories are not so heavily occupied by females the classification could often be incomplete, and therefore medals cannot be awarded and impose additional cost to organisers for preparing awards.

k) C.15.2.2 Class S (Space Models) — POLAND

The Space Models World Championships are held in odd years. The following classes (or subclasses) are recognised for the Space Models World Championships:

a) Senior **& Junior**

~~S1B~~ **S1A** S3A S4A ~~S5C~~ **S5B** S6A S7 S8P S9A

Note: Sub-class S8P complies with sub-class S8E; the purpose of the contest in S/P is to achieve as exactly as possible the given time of 360 seconds and to precisely land the model in a specified landing circle of 10 metres radius; for the final 3 metres radius.

b) Junior

~~S1A S3A S4A S5B S6A S7 S8D S9A~~

in S1 and S5 classes only single-stage models

Reason

The proposed change:

1. will simplify the competition by reducing the number of models,
2. will enable the assessment of flight correctness by a safety judge (currently achieved altitudes make this impossible in practice) in S1 and S5,
3. will provide credible independence for juniors,
4. will increase attendance in S1 and S5,
5. will facilitate the transition of juniors to the senior category in S8.

Technical Secretary note: This proposal requires the recommendation from the SM S/C TM.

l) C.15.2.2 Class S (Space Models) — UNITED KINGDOM

The Space Models World Championships are held in odd years. The following classes (or subclasses) are recognised for the Space Models World Championships:

a) Senior

S1~~B~~A S3A/2 S4A/2 S5~~C~~B S6A/2 S7 S8P S9A/2

Note: Sub-class S8P complies with sub-class S8E; the purpose of the contest in S/P is to achieve as exactly as possible the given time of 360 seconds and to precisely land the model in a specified landing circle of 10 metres radius; for the final 3 metres radius.

b) Junior

S1A S3A/2 S4A/2 S5B S6A/2 S7 S8D S9A/2

Reason

Class A/2 should exist in its own right. Many countries opt to conduct their national events on A/2 motors and do so successfully.

Availability of large flying fields is becoming increasingly difficult for the regular use of full A motors in championship categories. Models flying on full A motors present such high performance that they travel out of sight very quickly, causing timekeepers to struggle to keep a line of sight prematurely, which results in reduced scores unjustly or MAX scores being handed out on the assumption the model was still airborne.

Reduced impulse for altitude categories reduces overall flight altitude, which will result in:

— Easier observation of deployment by RSO

— Increased chances of locating the model in the sky, thus improved odds of recovery

For S5 category, reduced impact of flight altitude points will place more focus on the workmanship aspect of building a scale model, which this competition should be predominantly about.

Technical Secretary note: This proposal requires the recommendation from the SM S/C TM.

m) C.15.5.1 Entry fees — ITALY

C.15.5.1 Entry fees

a) For World or Continental Championship, the maximum entry fee shall be 300 EUR for up to seven nights except for the following classes, **for which the cost should not be higher than**:

F3A/P: 450 EUR F3B: 400 EUR F3C-F3N: 400 EUR F3D-F3E: 420 EUR

F4: 400 EUR F5B-F5J: 400 EUR **S: 400 EUR**

In these entry fees the amount of 10 CHF (or the equivalent) as described in C.4 (Sanction Fees) is not included and it will be added.

Reason

It is preferable that class S be listed explicitly, since up to now the recommended limit of 300 EUR has always been largely exceeded by the organizers. For limits for all classes, “shall” should be replaced by “should”.

Technical Secretary note: This proposal is redundant. The current rule is calculating the entry fees in a different way.

n) C.15.5.2 Optional fees **ITALY**

C.15.5.2 Optional fees

a) Separate optional fees may be offered at choice for: lodging (hotel and camping) and food (excluding banquet) and other possible additional events). The banquet shall not exceed the amount of 50 Euros (or the equivalent) and may be included in the entry fee or it may be a separate optional fee. **For the participants who choose the hotel accommodation offered by the organizers, the cost of the banquet must be deducted by 30%.**

Reason

For the participants who choose the hotel accommodation offered by the organizers, the cost of the banquet must be reduced by 30% given that the accommodation fees already include a dinner coinciding with the banquet and therefore cannot be used.

o) C.15.6.1 Individual classification **UNITED KINGDOM**

~~c) For any World or a Continental Championship, all females are considered for the following awards:~~

~~- FAI medals and diplomas will be awarded to the first, second and third placed females only if six (6) or more females are competing. If the number of females participants is less than this number (six), then only FAI diplomas will be awarded.~~

~~- The best female earns the title of Female World or Continental Champion if females from at least four different nations participate in that class and the total number of females are six (6) or more.~~

~~d) For any World or Continental Championship, where there are juniors or females participants, if they are awarded a medal for the first, second or third place in the individual classification, they will not be entitled for additional medals as juniors or females.~~

Reason

As witnessed during Cat.1 events since inception of the 4th team member expansion and Cat.2 events, female competitors often outperform their male counterparts on merit. The expansion of teams to 4 team members is encouraging enough to increase entries.

A separate female classification is discriminatory as female competitors are equally skilled. Their physique does not prevent them from achieving high results.

Further to that, when categories are not so heavily occupied by females the classification could often be incomplete, and therefore medals cannot be awarded and impose additional cost to organisers for preparing awards.

Paragraph d), as seen during ’23 WSMC and ’24 ESMC, was not followed and female competitors who were presented with medals in individual classification, also received female prizes. This rule no longer makes sense if paragraph c) is removed.

14.2 Section 4 Volume F1 - Free Flight

a) F1.2.6 - Clarification **F1 Subcommittee**

Modify F1.2.6 as shown

F1.2.6 Time recorded

The duration of the flight recorded is the mean of the times registered by the timekeepers, rounded to the nearest whole number of seconds to the resulting mean time (0.5 second rounded up to the second above) unless the difference between the times registered shows evidence of an error in the timing, in which case the organiser will determine, with the FAI Jury, which time will be taken registered as the official time recorded or what action should be taken.

Reason:

A clarification in the use of words as “time recorded” as the time to be used for scoring purposes and “times registered” to apply to the times clocked by each of the individual timekeepers.

b) F1.2.7 – Electronic evidence of flight time **F1 Subcommittee**

~~In Fly-offs, a~~ Altimeters approved by EDIC may be mounted in or on a model and used to produce a time-altitude graph of the recorded flight. The responsibility of the use and correct functioning of such devices rests with the competitor.

The use of an altimeter is voluntary.

The altimeter must be shown to the timekeeper before the flight for the timekeeper to record the serial number marked on the altimeter and to confirm that it shows the empty memory indication **or is of a type which identifies the absolute time at which the flight was made.**

Any dispute **by the competitor** must be marked on the competitor’s scorecard for that ~~fly off~~ round. **The Contest Director may also declare a dispute against a recorded time. In case of a dispute, before the next flight or no** later than 30 minutes from the end of a fly off round**, the competitor must** ~~jury will ask the competitor who filed the dispute to read out~~ **show the Contest Director in the presence of the Jury** the altimeter data and present the altitude versus time graph. In the event of a delay in presenting the altimeter data the competitor should contact the **Contest Director** ~~Jury.~~ The jury determine the flown time for the ~~fly off round~~ **flight** for which a dispute has been filed. If the moment of launch, landing and flight time can be clearly established the flight time will be recorded for the final result. If any one of these conditions is not met **then**

a) **when the competitor filed the dispute**, the timekeeper’s time of the disputed ~~fly off round~~ **flight** will be used as the score for that ~~fly off~~ round.

b) **When the contest director filed the dispute then the recorded time for the disputed flight will be set as zero.**

~~**In case** of a protest related to the altimeter generated flight time, the altitude graphs must be made available to the jury. Failure to do so will result in the time keeper’s recorded flight time being the official score.~~

Reason:

There were a number of proposals to the 2024 Plenary meeting for changes to F1.2.7. The Subcommittee proposal was accepted and will become effective in 2025. However, one proposal from USA was referred to the Subcommittee for further consideration. The proposal was for extending the paragraph to cover rounds flights as well as flyoffs The Subcommittee have now considered the subject and have agreed with the USA proposal. This is submitted above in a form adapted to the other changes already made to the paragraph.. It

includes participation by the Contest Director as had been agreed by the Subcommittee during discussion of the related new item F1.2.8.

It is requested that the 2025 Plenary meeting consider this change for application in 2026 to allow application in a year which does not have a Senior World Championship in that year.

c) F1.2.8 – Rule change **F1 Subcommittee**

Renumber existing F1.2.8 to F1.2.9 and insert following new F1.2.8:

F1.2.8 Evidence of flyoff times

An EDIC-approved altimeter must be used for flyoffs at Championships in F1A, F1B, F1C, F1P, F1Q. The altimeter must be shown to the timekeeper before the flight for the timekeeper to record the serial number marked on the altimeter and to confirm that it shows the empty memory indication or is of a type which identifies the absolute time at which the flight was made. After the flyoff and if no more than five competitors have achieved the maximum flight time, the top five competitors must produce their altimeter traces for inspection. In the presence of the jury the contest director will examine the trace and if the launch, landing and flight time can be determined then that will be taken as the time for the flight. If the flight time cannot be determine from an altimeter trace then the flight time will be zero.

Reason:

In several flyoffs at championships in 2024 there have been cases of timing errors. If the competitor has an altimeter trace that shows a longer time than given by the timekeepers then he can challenge it under paragraph 1.2.7. However if the timekeepers have given an excessively long time, such as timing the wrong model, then there is no mechanism to request an altimeter record or an altimeter might not have been used.

d) F1.6 - Rule change **F1 Subcommittee**

Introduce a new section in F1 after the existing section F1.5

F1.6 National Regulations

F1.6.1 Announcement of restrictions

National regulations should be followed whenever flying free flight models. When national regulations require all model flying in the country to observe specific rules, then the contest organizer must announce such restrictions in the advance publicity for the event.

a) **One example of such restrictions might be a requirement for radio dethermalization to be fitted in all models.**
b) **A further example might be a requirement for radio dethermalization combined with a prohibition of flying beyond visual sight. In this case the model should be dethermalized immediately the competitor has lost sight of the model and any altimeter evidence of flight time will valid up to the time of dethermalization.**

Reason:

National regulations in many countries limit the operation of model aircraft to being within sight of the “operator”. Models in strong thermals or on long flyoff flights may contravene this limitation and the this proposal allow free flight contest organisers to specify the regulations which must be followed.

e) F1B.1 – Rule change **F1 Subcommittee**

Remove words "camber or"

The text changes:

Model aircraft which is powered by an extensible motor and in which lift is generated by the aerodynamic forces acting on surfaces remaining fixed in flight, except for changes of ~~camber or~~ incidence. Model aircraft with variable geometry or area must comply with the specifications when the surfaces are in minimum and maximum extended mode.

Reason:

The incorporation of flaps on models represents a significant additional complexity and possible increase in performance of the models. It is appropriate to ban the use of flaps before they enter widespread use

f) F1B2 – Rule change **F1 Subcommittee**

Change maximum weight of motor

The changes:

Surface Area (St) ..... 17 - 19 dm^2

Minimum weight of model less motor(s) ..... 200 g

Maximum weight of motor(s) lubricated ..... ~~30~~ 25 g

F1B models may use radio control only for irreversible actions to control dethermalisation of the model. Any malfunction or unintended operation of these functions is entirely at the risk of the competitor

Reason:

The performance of models is very high compared to the maximum times used during the rounds, leading to large and extended flyoffs. For F1B the small reduction of motor weight provides reduced performance without requiring significant changes to the models currently in use. Historically the model weight has been increased to maintain a typical flying weight of motor plus model at 230g. In this proposal the minimum weight of the model is unchanged to further support the use of existing models and to eliminate the possibility of using extra mass to optimise model design (such as larger aspect ratio wings) or increased complexity of aircraft systems.

14.3 Section 4 Volume F3 - Aerobatics

a) 5.1.2 h) Examples/Not permitted – Clarification F3 RC Aerobatics Subcommittee

The changes:

Not permitted:

1. Snap roll buttons with automatic timing mode.
2. Pre-programming devices to automatically perform a series of commands.
3. Any airborne device or function that has the ability to use sensors to actuate any control surface.
4. Automatic flight path guidance.
5. Propeller pitch change with automatic timing mode.
6. Any type of speech input.
7. Use of earphones for speech output
8. Conditions, switches, throttle curves, or any other mechanical or electronic device that will prevent or limit sound level of the propulsion device during the sound/noise test.
9. Any type of learning function involving maneuver to maneuver or flight to flight analysis, **any device capable of controlling, transmitting or recording the flight path of the model aircraft.**
10. Telemetry data which are not allowed to be communicated to the pilot or the helper:
    b) Airspeed, altitude or attitude data.
    c) Position data such as GPS.
    d) Power plant data such as RPM limits, throttle setting, Current Draw, capacity of propulsion battery and total fuel, etc.

Reason:

Additional sentence in 9 will avoid discussions with what a program recorded and what the judges saw. The pilots would have a tool to criticize the judges even more. It is not desired, since there is a tendency to think that judges are not good in some cultures, and such devices will increase this perception if there are differences between the two points of view, the human and the digital and we need to mention that judging the manoeuvres will be done from judges position view according to the rules.

b) 5.1.8 e) – Rule change F3 RC Aerobatics Subcommittee

The changes:

e) The maneuvering zone is vertically spread in front of and at a distance of approximately 150 m from the pilot. It is laterally limited by two virtual vertical planes above the extension of two lines on the ground each at an angle of 60 degrees left and right from the intersection of a centre line with the safety line. The centre line is positioned on the ground perpendicular to the safety line on the ground which is parallel to the runway. ~~Two starting circles of 3m diameter are marked on the middle of the runway, one left and one right at minimum 15 m off the centre line, also serving for sound/noise measurement, if required.~~ The upper limit of the manoeuvring zone is defined by the virtual plane stretching up 60 degrees from the ground at the intersection of all ground lines.

Reason:

The starting circles are not necessary. It is sufficient that the aircraft will be placed on the runway.

c) 5.1.8 m) - Rule change F3 RC Aerobatics Subcommittee

The changes:

m) The individual manoeuvre scores given by each judge for each competitor must be made public at the end of each flight of competition, **except for the final rounds at World and**

Continental Championships. The team manager must be afforded the opportunity to check that the scores on each judge's score document correspond to the tabulated scores (to avoid data capture errors). A score board/monitor must be located in a prominent position at the flight line, in full view of the competitors and the public. At World-and Continental Championships a paper copy of the scores of each competitor must be given to their team manager. At Category 2 and national/local events it is recommended to give a paper copy of the scores to the individual pilot. If possible a network may be used to view scores. The security of the scoring system is the responsibility of the Scorekeeper.

Reason:

Consequence of Change in 5.1.9

d) 5.1.9 a, b) - Rule change **F3 RC Aerobatics Subcommittee**

The changes:

a) For World or Continental Championships, each competitor will have four preliminary flights (P Schedule), with the highest three normalised scores added to determine the preliminary result.

Following the preliminary result, the top half (rounded up to the next whole number), but not more than 30 competitors, will progress to the semi-final. The semi-final will have two additional semi-final flights (F Schedule). The results from the preliminary flights, normalised again to 1000 points, will count as one score along with the two semi-final normalised scores to produce three scores. The highest two scores will be added to produce the semi-final result.

Following the semi-final result, the top ten competitors will progress to the final, provided there are more than 40 competitors registered before the preliminary flights. For a World or Continental Championships with 40 or fewer competitors, the number of competitors advancing to the final will be between five and ten inclusive, with the number being announced before the start of the preliminary rounds.
The final rounds will comprise one flight of the current semi-final schedule (F Schedule) and two unknown schedules, flown in the order - unknown schedule 1, schedule F and unknown schedule 2. The result from the semi-final, normalised again to 1000 points, will count as one score together with the three normalised scores from the final to produce four scores. The highest three scores will be added to produce the final result. The scoresheets and the results of all final flights must not be published before the end of the last final flight round. In the case of a tie in the preliminary, semi-final or final result, the previously discarded score will be counted to determine the result.

b) In the event of adverse weather or insufficient daylight where it is not practicable to complete all the rounds for any phase of the competition, the result will be determined according to the following:

Preliminary
One round completed – the one round will determine the result.
Two rounds completed – the highest one round will determine the result.
Three rounds completed – the highest two rounds will be added to determine the result.

Semi-Final
One semi-final round completed – the one semi-final round will be added to the re-

normalised preliminary score to determine the result.

Final
One final round (unknown 1) completed – the one final round will be added to the re-normalised semi-final score to determine the result.

Two final rounds completed (unknown 1 and F schedule) – the two final round scores and the re-normalised semi-final score will be taken to produce three scores and the highest two scores will be added to determine the ranking.

In the case of a tie where a reduced number of preliminary, semi-final or final rounds have been completed, any discarded score from the previous phase of the competition will be counted to determine the result.

Reason:

a) Using four (4) scores for final will offer to discard one score which eliminates influence of weather conditions and possible technical defects.
Keeping the results confidential till the last final flight will keep pilots trying right through the finals and will avoid any influence of score to the judges.

b) Better clarification of what will happen if all rounds are not possible.

e) 5.1.11 h)-j) - Rule change **F3 RC Aerobatics Subcommittee**
The changes:

h) The competitor and his helper(s) then occupy the starting area. ~~so that a radio check can be performed to verify the correct functioning of the radio control equipment. The competitor must be allowed a maximum of one minute for a radio check before the beginning of the starting time.~~

~~i) The time keeper will audibly notify the competitor when the minute is finished and immediately begin timing the starting time. j~~

i) **According to paragraph 5.1.2., the voltage of the propulsion battery of electric powered models, must be checked by an official in the preparation area before the starting time is started.**

~~j) According to paragraph 5.1.2., the voltage of the propulsion battery of electric powered models, must be checked by an official in the preparation area before the starting time is started.~~

j) **For electric powered models, the electric power circuit(s) must not be physically connected, before the checking of the propulsion battery**

~~k) For electric powered models, the electric power circuit(s) must not be physically connected, before the starting time is begun and must be physically disconnected immediately after landing.~~

k) **The time keeper will audibly notify the competitor when timing of the starting time begins.**

Reason:

The one minute for radio checking isn't necessary anymore, because all competitors use spread spectrum radio equipment according to the rules.

f) 5.1.11 l) - Rule change **F3 RC Aerobatics Subcommittee**

The changes:

l) A competitor is allowed two (2) minutes of starting time and eight (8) minutes of flying time for each flight. The timing of an attempt starts when the contest director, or timekeeper, gives an instruction to the competitor to start and the 2-min starting time begins. The openly displayed timing device/clock will be re-started to count the 8-min flying time when the model aircraft has been placed ~~in the take-off circle~~ **in the manoeuvring area (on the runway).** If the model aircraft is not placed with its wheels ~~in the starting circle~~ **in the manoeuvring area (on the runway)** before/at the expiration of the 2-minute starting time, the contest director/time keeper will advise the competitor and helper that the flight may not proceed. The flight shall score zero points…

Reason:

Consequence of change in 5.1.8 e)

g) 5.1.10 k) – Rule change **F3 RC Aerobatics Subcommittee**

The changes:

k) Before every World or Continental Championship, there shall be a briefing for the judges, followed by training flights by non-competitors. Also, warm-up flights for the judges should be flown by non-competitors before the first official preliminary flight each day. For the semi-finals the highest placing non-semi-finalists and for the finals the highest placing non-finalists should be awarded the honour of performing the warm-up flights. Warm-up flights should be judged but under no circumstances should they be tabulated. **For Unknown schedules there should be 3 warm-up flights with no break between the third warmup flight and start of the round**. Any deviations from the above procedures must be stated in advance by the organisers and must have prior approval of the CIAM or the CIAM Bureau.

Reason:

Judge need to have three warm up flights for unknown schedules. There shouldn't be any break between the third warmup flight and the starting of the round that judges stay in the flow of judging for real.

h) 5.1.13 Schedules of Manoeuvres – Rule change **F3 Aerobatics Subcommittee**

Change wording as follows, delete obsolete schedule A-23, add new schedule A27:

Changes*:*

~~For 2024-2025 Schedule A-25 is recommended to be flown in local competitions so as to offer advanced pilots a suitable way to achieve skills to step-up to P-Schedules.~~

For 2026-2027 Schedule A-27 is recommended to be flown in local competitions so as to offer advanced pilots a suitable way to achieve skills to step-up to P-Schedules.

For 2028-2029 Schedule A-29 is recommended to be flown in local competitions so as to offer advanced pilots a suitable way to achieve skills to step-up to P-Schedules.

~~For 2024-2025 P-25 will be flown in the preliminaries~~

For 2026-2027 Schedule P-27 will be flown in the preliminaries.

For 2028-2029 Schedule P-29 will be flown in the preliminaries.

~~For 2024-2025, Schedule F-25 will be flown in the semi-finals, as well as in the finals, together with unknown schedules~~

For 2026-2029, Schedule F-27 will be flown in the semi-finals, as well as in the finals, together with unknown schedules

For 2028-2027, Schedule F-29 will be flown in the semi-finals, as well as in the finals, together with unknown schedules

Advanced Schedule A-29 (2028-2029)	**K-Faktor**
A-29.01 Forty-five degree upline with roll	**K 3**
A-29.02 Push-Pull-Push Humpty Bump	**K 3**
A-29.03 Square Loop on Corner from top	**K 3**
A-29.04 Half Square Loop with half roll	**K 2**
A-29.05 Knife-Edge flight	**K 4**
A-29.06 Stall Turn with half roll	**K 3**
A-29.07 Cuban Eight with roll, roll	**K 4**
A-29.08 Half Square Loop on Corner	**K 2**
A-29.09 Double Key with half roll, half roll	**K 4**
A-29.10 Figure 8, half outside loop on top, loop	**K 3**
A-29.11 Four consecutive quarter rolls	**K 4**
A-29.12 Pushed Half Loop	**K 2**
A-29.13 Spin with two turns	**K 3**
A-29.14 Top Hat with half roll. Option: Top Hat with quarter roll, quarter roll	**K 3**
A-29.15 Knife-Edge Humpty Bump with quarter roll, quarter roll	**K 4**
A-29.16 Reverse Shark Fin	**K 3**
Pushed Loop with roll on top	**K 5**
	Total K = 55

Reason

F3A schedules change every two years.

i) 5.1.13 Schedules of Manoeuvres – Rule change F3 Aerobatics Subcommittee

Change wording as follows, delete obsolete schedule P-25, add new schedule P-29:

The Changes:

PRELIMINARY SCHEDULE P-29 (2028-2029)	K-Factor
P-29.01 Forty-five degree upline with snap roll	K 4
P-29.02 Push-Pull-Push Humpty Bump with two consecutive quarter rolls, roll	K 3
P-29.03 Square Loop on Corner from top with half roll, half roll, half roll, half roll	K 5
P-23.04 Half Square Loop with half roll, two consecutive half rolls in opposite direction	K 2
P-29.05 Knife-Edge flight with roll	K 4
P-29.06 Stall Turn with two consecutive quarter rolls, half roll	K 3
P-29.07 Cuban Eight with snap roll, roll	K 5
P-29.08 Half Square Loop on Corner with quarter roll, quarter roll	K 2
P-29.09 Double Key with half roll, three quarter roll, three quarter roll, half roll	K 5
P-29.10 Figure 8, half outside loop on top, loop	K 3
P-29.11 Roll Combination with two consecutive one eighth rolls, four consecutive quarter rolls in opposite direction, two consecutive one eighth rolls in opposite direction	K 5
P-29.12 Immelman	K 2
P-29.13 Spin with two and a quarter turns, quarter roll	K 4
P-29.14 Top Hat with two consecutive quarter rolls. Option: Top Hat with three quarter roll, quarter roll	K 3
P-29.15 Knife-Edge Humpty Bump with three quarter roll, three quarter roll	K 4
P-29.16 Reverse Shark Fin with two consecutive half rolls in opposite direction, two consecutive quarter rolls	K 3
P-29.17 Loop with two half rolls integrated	K 5
	Total K = 62

Reason:
F3A schedules change every two years.

j) 5.1.13 Schedules of Manoeuvres – Rule change F3 Aerobatics Subcommittee

Change wording as follows, delete obsolete schedule F-25, add new schedule F-29:

Semi-Final/Final Schedule F-29(2028-2029)	K-Faktor
F-29.01 Golfball with three quarter roll, half roll integrated, three quarter roll	K 4
F-29.02 Figure ET with two half rolls in opposite direction, roll	K 3
F-29.03 Knife-Edge Flight with two snap rolls in opposite direction	K 5

F-27.04 Figure ET with half roll, four one eighth rolls K 3

F-29.04 Trombone with three quarter roll, roll, half roll opposite K 3

F-29.05 Knife- Edge Rolling Circle with two rolls opposite K 5

F-29.06 Half Loop with two half rolls opposite integrated K 4

F-29.07 Triangle from Top with snap roll, four consecutive quarter rolls, snap roll K 5

F-29.08 Half Square Loop on corner with quarter roll, half roll integrated, quarter roll K 4

F-29.09 Cuban Eight with one and a quarter roll integrated, snap roll, roll integrated, snap roll, quarter roll integrated K 6

F-29.10 Half Square Loop with quarter roll, knife edge loop, quarter roll K 4

F-29.11 Figure S from Top with half roll integrated, half roll integrated K 5

F-29.12 Half Square Loop with three quarter roll, quarter roll opposite K 3

F-29.13 Inverted Spin two turns, two turns opposite K 4

F-29.14 Humpty Bump with half roll, half roll integrated, snap roll. Option: Humpty Bump
F-29.15 Roll Combination with four consecutive one eighth rolls, half roll opposite, four consecutive one eighth rolls opposite K 4

F-29.16 Knife-Edge Shark Fin with, three eighth knife edge loop, three consecutive ¼ rolls K 4

F-29.17 Stall Turn with half roll integrated, three quarter roll, three quarter snap roll, half roll ntegrated K 4

Total K = 72

Reason:
F3A schedules change every two years.

k) ANNEX 5A
F3A – RADIO CONTROLLED AEROBATIC AIRCRAFT
DESCRIPTION OF MANOEUVRES – Rule change F3 Aerobatics Subcommittee

Delete the existing manoeuvre descriptions of schedules A-25, P-25, and F-25 and replace with descriptions of, A-29, P-29 and F-29. Refer to Agenda Annex 7a.

Reason:
F3A Aerobatic schedules change every two years.

l) 5.9.2 – Clarification F3 Aerobatics Subcommittee

Maximum overall span 1500 mm

Maximum overall length 1500 mm

Maximum total weight, with batteries and special effects 300g

Only for F3P-Basic:

Minimum weight: 100g

Contra drive propulsion is not allowed.

External parts that protrude which could be considered dangerous, (ie landing gear struts, shaft tips etc) must be covered in order to avoid injuries

Reason:

Clarification of weight rule.

m) 5.9.8 d) – Clarification **F3 Aerobatics Subcommittee**

d) Take-off and landing procedures are not judged and are not scored. **Take-off and landing procedures are not judged or scored, but must be perfomed from the ground using the model aircraft's landing gear.**

Reason:

Clarification of take off sequence to avoid additional means for take off.

m) 5.9.8 h) – Clarification **F3 Aerobatics Subcommittee**

h) Aerobatics Freestyle to Music (F3P-AFM) are judged for Precision and Accuracy, Complexity, Harmony of Flight to Music, Utilization of Manoeuvring Area and Special Effects, in marks of half number increments between 0 to 10 by each of the judges for the overall flight. as described in Annex 5M Manoeuvres – Schedule F3P-AFM. **All special effects must be originated by the model aircraft. Extra items or other activities in the flying area not allowed.**

Reason:

Clarification that special effect must be done with means installed on the plane.

n) 5.9.13 Schedules of Manoeuvres - Rule change **F3 Aerobatics Subcommittee**

Delete obsolete schedules AA-25, AP-25, AF-25, add new schedules AA-27, AP-27, AF-27

Advanced Schedule F3P AA-27 (2026-2027)

AA-27.01 Reverse Cuban Eight from Top with half roll, half roll	**K 4**
AA-27.02 Corner Combination with quarter roll	**K 3**
AA-27.03 Horizontal Square with half, roll, half roll	**K 4**
AA-27.04 Half Circle with half roll integrated	**K 5**
AA-27.05 Torque Roll	**K 4**
AA-27.06 Half Hourglass with half roll, half roll	**K 3**
AA-27.07 Loop with half roll integrated in the first 180 degrees	**K 4**
AA-27.08 Double Humpty Bump with quarter roll, quarter roll	**K 4**
AA-27.09 Roll Combination with two consecutive quarter rolls, two consecutive quarter rolls opposite	**K 3**
AA-27.10 Horizontal Half Square with half roll	**K 3**

AA-27.11 Stall turn with quarter roll, quarter roll K 4

Total K = 41

Preliminary Schedule F3P AP-27 (2026-2027)

AP-27.01 Reverse Cuban Eight from Top with half roll, half roll integrated, half roll, half roll integrated K 4

AP-27.02 Corner Combination with quarter roll, half roll integrated K 3

AP-27.03 Horizontal Square with quarter roll, half, roll, half roll, half roll, quarter roll K 5

AP-27.04 Half Circle with four consecutive quarter rolls K 4

AP-27.05 Two consecutive half Torque Rolls K 5

AP-27.06 Half Hourglass with half roll, two consecutive quarter rolls, half roll K 3

AP-27.07 Loop with quarter roll integrated, quarter roll integrated K 4

AP-27.08 Double Humpty Bump with half roll, two consecutive quarteer rolls, half roll K 4

AP-27.09 Roll Combination with two consecutive one eighth rolls, half roll opposite, two consecutive one eighth rolls opposite to the haf roll K 4

AP-27.10 Horizontal Half Square with integrated half roll, half roll, integrated half roll K 3

AP-27.11 Figure M with quarter roll, quarter roll, quarter roll, quarter roll K 5

Total K = 44

FINAL SCHEDULE F3B AF-27 (2026-2027)

AF-27.01 Horizontal Square on Corner Eight with half roll, quarter roll, quarter roll, half roll, quarter roll, quarter roll, half roll K 4

AF-27.02 Double Stall Turn with two consecutive quarter rolls, quarter roll, half roll, quarter roll K 3

AF-27.03 Rolling Circle Rolling Loop Combination with half roll integrated, roll integrated, half roll integrated K 6

AF-27.04 Corner Combination with half roll integrated, quarter roll, half roll integrated K 3

AF-27.05 Pushed Loop with quarter roll integrated, quarter roll integrated K 5

AF-27.06 Half Sqare Loop with Triangle, half roll, quarter roll, quarter roll K 4

AF-27.07 Forty Five Degree Knife Edge Crossbox Line with quarter roll integrated, two consecutive one eight rolls, two consecutive one eight rolls in opposite direction, quarter roll integrated K 3

AF-27.08 Two Half Loops with Crossbox Line with half roll integrated, quarter roll integrated, quarter roll integrated, half roll integrated K 6

AF-27.09 Square Loop with quarter roll, three quarter torque roll, quarter roll, quarter roll K 5

AF-27.10 Double Shark Fin with quarter roll, quarter roll half forty Five degree circle, quarter roll, quarter roll K 4

AF-27.11 Double Key with quarter roll, quarter roll, quarter roll, quarter roll K 4

Total K = 47

Reason:

Reason: F3P Aerobatic schedules AA, AP, AF change every two years.

o) 5B.8.4 Loops – Rule change F3 RC Aerobatics Subcommittee

Add the bold underlined sentence to number 5B.8.4

The changes*:*

5B.8.4
…Loops and part-loops within one manoeuvre must have the same radius. Each occurrence of a minor difference in radius must downgrade the manoeuvre by 0.5 point, while more severe deviations may downgrade it by 1, 1.5, 2 or more points for each occurrence**.** **Exceptions necessary for special (new) manoeuvres must to be noted in the manoeuvre description.** The first radius of a manoeuvre does not define the radii for the remaining radii of a manoeuvre but it is a starting point. As the manoeuvre progresses, the judge will compare each radius that was just flown to the last radius flown and if there is a difference, then a downgrade will be given based on the severity of the difference…

Reason:

This exception will allow new interesting maneuvers.

p) ANNEX 5M
F3P – RADIO CONTROLLED INDOOR AEROBATIC AIRCRAFT
DESCRIPTION OF MANOEUVRES – Rule change F3 Aerobatics Subcommittee

Delete the existing manoeuvre descriptions of schedules AA-25, AP-25, and AF-25 and replace with descriptions of, AA-27, AP-27 and AF-27. Refer to Agenda Annex 7b.

Reason:
F3P Aerobatic AA, AP, AF schedules change every two years.

q) 5N.3 – Rule change F3 Aerobatics Subcommittee
The changes:

c) **four (4) or** five (5) judges have to be appointed for each judges' panel ~~and a TBL scoring system has to be applied.~~ **If using panels of four judges (4) the highest and lowest score per manoevre will be discarded, using panels of five (5) judges TBL scoring system has to be be applied. The selection of judges has to be done according to CIAM General Rules C.9 d).**

Reason

World Cup competitions will become more affordable, especially for organizers of smaller events.

Using panels of four (4) judges can reduce cost for organizers and will motivate them to organize F3A World Cup competition.

r) Annex 5G - Rule change — F3 RC Aerobatics Subcommittee

Delete the existing Annex 5G and replace it with reworked Annex 5G. Refer to Agenda Annexes section.

Reason

Annex 5G has been reworked, new manoeuvres have been implemented, and a new computer application to create Unknowns has been developed.

The new computer application for creating unknown schedules can be seen here:

https://usg.f3a.fr

All Aresti drawings can be found here:

https://usg.f3a.fr/Drawings/

14.4 Section 4 Volume F3 - Helicopters

a) 5.4.10 Scoring - Rule change **F3CN Subcommittee**

Each manoeuvre is given a score between 0 and 10 (including half) points by each judge. A new score sheet is issued to each competitor for each round. Only the competitor's number (no name or nationality) will appear on the score sheet. Any manoeuvre not completed shall be scored zero (0) points. If a manoeuvre is scored zero points all judges must agree. There shall be an official located on the field where any flight over the prohibited area can be observed. The prohibited area is the shaded area in Figure 5.4.A behind the judges' line. The area extends to infinity to the left, right and rear. A visual or audible signal shall be given to indicate such over flights. Competitors flying over this area will be penalised by scoring zero (0) points for the current flight. However, the judges shall score all manoeuvres. If an infringement has been made, the scores will be deleted from all score sheets after the flight. In addition, there shall be no score when:

a) The competitor flies a model aircraft that has been flown in the same competition by another competitor, or flies a model aircraft that does not comply with the definition and general characteristics of a radio controlled helicopter.

~~b) The competitor does not deliver his transmitter to the impound or operates any transmitter at the competition area during a round without permission.~~

~~c~~b) The competitor starts his model aircraft outside of the start circle.

~~d) The competitor gets his transmitter from the impound before he is officially called.~~

~~e~~c) Manoeuvres must be performed where they can be seen clearly by the judges. If a judge, for some reason beyond the control of the competitor, is not able to follow the model aircraft through the entire manoeuvre, he may put a "Not Observed" (N.O.) mark. In this case, his score will, for that particular manoeuvre, be set to the average score given by the other judges, rounded to the nearest half point.

Reason:

Because of using the 2,4GHz technology a transmitter impound is no more necessary.

b) 5.4.11 Classification - Clarification **F3CN Subcommittee**

Part of Competition	# of Competitors	# of Rounds	Classification	Ranking
Preliminary	All registered and qualified pilots	4	Sum of normalized points of each of the four rounds. Dropping the lowest result, only if there are at least 3 completed rounds	Determines the ranking of pilots classified 29… n
Semi-Final	Top 28 pilots of preliminary part of competition	2	Sum of normalized points of each of the two rounds plus the normalized result of the preliminary part of the competition. Dropping the lowest of any of these 3 results, only if there were 2 semi-final rounds completed.	Determines the ranking of pilots classified 15..28
Final	Top 14 pilots of semi-final part of competition	2	Sum of normalized points of each of the two rounds plus the normalized result of the semi-final part of the competition. Dropping the	Determines the ranking of pilots classified 1..14

			lowest of any of these 3 results, only if there were 2 final rounds completed.	

The finals to determine the individual classification are only required for World and Continental Championships.

If the competition is interrupted, the final individual classification will be determined by counting all completed rounds and by calculating according to the table above.

All scores for each round will be normalised by awarding 1000 points to the highest scoring flight. The remaining scores are then normalised to a percentage of the 1000 points in the ratio of actual score over the score of the winner of the round. If only one round is possible then the classification will be based on that one round.

For example:

$Points_{(X)}$ = $Score_{(X)}$ divided by $Score_{(W)}$ multiplied by 1000

Where $Points_{(X)}$ = Points awarded to competitor X

$Score_{(X)}$ = Score of competitor X

$Score_{(W)}$ = Score of winner of the round

Points (x) should be calculated to at least two decimal places and recorded (truncated) to two places after decimal point.

Ties for any of the first three places will be broken by counting the highest throwaway score. If the tie still stands a "sudden death" final must take place within one hour of the end of the scheduled final rounds.

The team classification for World and Continental Championships is established at the end of the competition (after the final flights) by adding together the numerical final placings of the three team members using the full list of competitors **without participants who were registered during a possible second phase of the preliminary entry** unless there is a fourth or a fifth member of the team (who must always be a junior and/or a woman) in which case it will be the three best placed members. Teams are ranked from the lowest numerical scores to the highest, with complete three-competitor teams ahead of two-competitor teams, which in turn are ranked ahead of one-competitor teams. In case of a tie, the best individual placing decides the team ranking. (Ref: *CIAM General Rules*, C.15.6.2 i))

Reason:

The clarification is necessary because due to the possibility of a second phase of the preliminary entry it must be stated that the additional competitors will not influence the team result.

c) 5.4.12 Judging - Rule change — F3CN Subcommittee

At Continental and World Championships the organiser must appoint a panel of five judges for each round/flight line. When the entry exceeds 55, two flight lines must be used. The judges must be of different nationalities and must be selected from the current CIAM list of international judges. When using two separate panels, the organiser is allowed to use two judges of the same nationality, one on each panel. Those selected must reflect the approximate geographical distribution of teams participating in the previous World Championship with the final list approval by the CIAM Bureau.

~~At least 20% but not more than 40% of the judges must not have judged at the previous World Championships~~.

For the preliminary rounds the final score of each flight is obtained by deleting the highest and lowest scores for each manoeuvre from the five judges. This also applies for semi final and final rounds if only one flight line is used. If two flight lines were used for the preliminary rounds, for the final and semi final rounds ten judges shall be used while dropping the two lowest and two highest scores for each manoeuvre. At open or other International Competitions the number of judges may be reduced to a minimum of three with no throwaway scores.

a) There shall be training flights for judges with a debriefing session immediately before a Continental or World Championships.
b) The scoring system must be organised in such a way that the competitors and the spectators can clearly see the scores awarded by all judges after each flight. The score sheet notation must be written by the judges themselves.

Reason:

The rule change is necessary because judges of previous category 1 events are not always available anymore.

d) 5.4.13 Organisation - Rule change **F3CN Subcommittee**

TRANSMITTER & FREQUENCY CONTROL (See Volume *CIAM General Rules*, Section C, Paragraph C.16.2). When all transmitters are of the spread spectrum type a transmitter impound is not required.

FLIGHT ORDER

The flight order for the first preliminary round will be determined by a random draw, taking into account that frequency will not follow frequency and team member will not follow team member of the same team. The flight order for preliminary rounds two, three and four will start at the first, second and third quarter of the initial order. **This means the second round begins with the second quarter of the initial order after the first quarter of the initial order has been moved to the end and so on**. The flight order for the first semi final round will be established by a random draw. The flight order for the second semi final round will start at the first half of the initial order. The flight order for the first final round will be established by a random draw. The flight order for the second final round will start at the first half of the initial order.

PREPARATION TIME

A competitor must be called at least 5 minutes before he is required to enter the start circle. A start circle 2m in diameter will be provided away from the flight line, spectators, competitors and model aircraft (see FIGURE 5.4.A). When the previous competitor's flight time reaches 6 minutes the flight line director can give the signal to start the engine. In the case of electric motors, the battery must not be connected before signal has been given. The competitor is given 5 minutes to start the engine and make last minute adjustments. The model aircraft may only be hovered in the start circle up to 2m and must not be rotated beyond 180º left or right relative to the competitor. If the model aircraft is rotated beyond 180º the flight is terminated. The competitor in the start circle must reduce his engine's speed to an idle when the preceding competitor has completed the penultimate manoeuvre. If the competitor is not ready after the 5 minute preparation time, he is allowed to complete his adjustments in the start circle; however, his flight time will have started at the end of the 5 minute interval.

FLIGHT TIME

The flight time of 9 minutes for the preliminary flights and 8:30 minutes for semi final and final flights begins when the competitor's model leaves the start circle with the permission of the flight line director and the judges. If the allotted time expires before a manoeuvre is completed, that manoeuvre and all remaining manoeuvre(s) will be scored zero.

RESTRICTIONS

After starting the model aircraft in the start circle the model aircraft must be flown at 2m to the helipad along the model entry path shown on the Contest Area Layout (Figure 5.4.A). The pilot may test hover the helicopter on the helipad and reposition it, before announcing the start of the first manoeuvre, to accommodate wind conditions. If the engine stops the flight is terminated.

After the flight: In case of electric motors, the battery must be disconnected before the pilot brings the helicopter over the judging line.

INTERRUPTION OF A COMPETITION

If the wind component perpendicular to the flight line exceeds 8ms/s for a minimum of 20 seconds during a flight, the competition must be interrupted. The flight will be repeated and the competition continued as soon as the wind subsides below the criterion. If the wind does not subside before the
round is completed, the entire round will be dropped. The determination will be made by the organiser with concurrence of the FAI Jury.

Reason:

It needed to be clarified how the starting orders for all rounds should be determined. Furthermore, the flight time for the F schedule, which was too short, had to be extended because the permitted flight time was often exceeded.

e) 5.4.14 Manoeuvre Schedules – Rule change F3CN Subcommittee

FLIGHT PROGRAM

The flight program consists of manoeuvre schedules P, **SF** and ~~SF~~/F for the years ~~2024 – 2025~~ **2026-2027**. The P schedule consists of nine (9) manoeuvres and the SF **and** ~~/~~F schedule consists of eight (8) manoeuvres

(see ANNEX 5D - F3C MANOEUVRE DESCRIPTIONS).

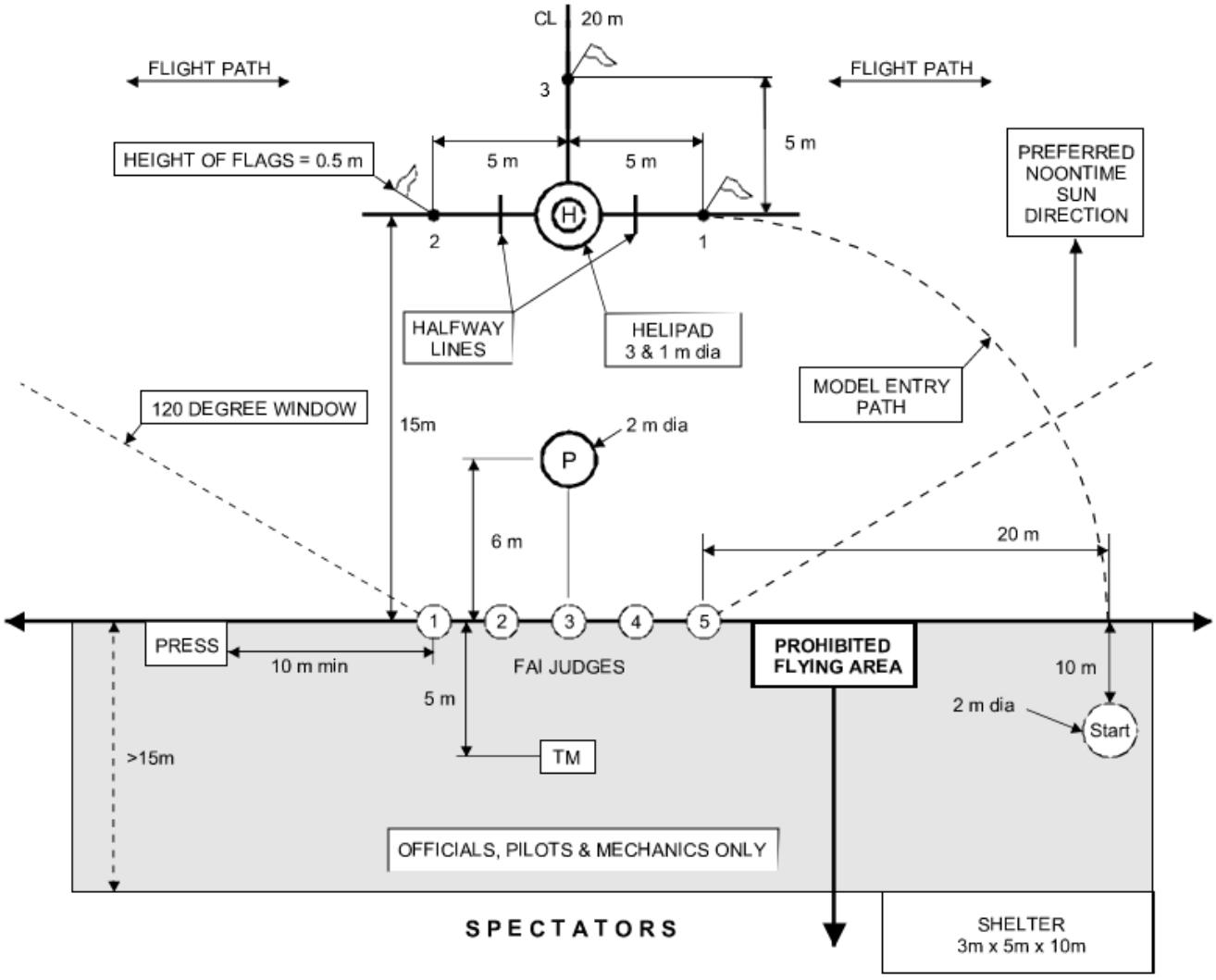
Reason:

Due to the introduction of the new Final Schedule, this rule change is necessary.

f) 5.4.A F3C Contest Area Layout – Rule change — F3CN Subcommittee

Replace the first drawing.

FIGURE 5.4.A - F3C CONTEST AREA LAYOUT



Reason:

Due to the introduction of the new Final Schedule, this rule change is necessary.

g) 5.11.3 Contest Area Layout – Rule change — F3CN Subcommittee

Refer to Figure 5.11.A. The drawing shows the recommended layout, the shape and distances of which should be kept for safety Reason. The centreline must be clearly indicated 20m out from the helipad. **The contest area layout is the same as for F3C, except for the center flag and flag no. 3.**

Reason:

The organisation of combined competitions is easier, if the contest area layouts for F3C and F3N are identical.

h) 5.11.7 Scoring – Rule change **F3CN Subcommittee**

The number of judges is at least three, and no more than five. **At Continental and World Championships the organiser must appoint a panel of five judges for each round/flight line. The judges must be of different nationalities and must be selected from the current CIAM list of international judges**. ~~At least 20% but not more than 40% of the judges must not have judged at the previous World Championships.~~ If only three (3) judges are used, all marks will be counted for the score of the round. By using four (4) or five (5) judges, the highest and lowest mark of each manoeuvre will be discarded.

In the Set Manoeuvre flight each manoeuvre is given a score between 0 and 20 points by each judge. A manoeuvre that is not completed or not flown according to the description shall be scored zero (0) points. If a manoeuvre is scored zero points all judges must agree. In the freestyle or music freestyle flights the scoring is done after the flight according to the scoring criteria.

In the Set Manoeuvre flights, only manoeuvres that are completed in the flight time of 8 minutes will receive a score. If the flight time for the Freestyle or Music Freestyle program is less than 3:20 minutes or more than 3:40 minutes, there shall be a downgrade of 5% for the flight. A flight shorter than two or longer than five minutes shall be scored zero points.

Manoeuvres must be performed where they can be seen clearly by the judges. If a judge, for some reason beyond the control of the competitor, is not able to follow the model aircraft through the entire manoeuvre, he may put a “Not Observed” (N.O.) mark. In this case, his score will, for that particular manoeuvre, be set to the average score given by the other judges, rounded to the nearest whole point.

Reason:

The clarification is necessary because it has to be stated that for category 1 events 5 judges are mandatory.

i) 5.11.8 Classification – Clarification **F3CN Subcommittee**

After the completion of every round, all scores will be normalised by awarding 1000 points to the highest scoring flight. The remaining scores are then normalised to a percentage in the ratio of actual score over the highest score of the round. The scores should be calculated to at least two decimal places and recorded (truncated) to two places after decimal point.

There shall be two rounds of Set Manoeuvre flights and one round each for Freestyle and Music Freestyle. However, the lowest score of each competitor will be the throwaway score. The other scores are added together and then divided by the number of counting preliminary rounds.

The result is the preliminary score. If only one round is possible then the classification will be based on that round.

After completion of the preliminary flights, the top 10 competitors are entitled to three fly-off flights, one Set Manoeuvre flight, one Freestyle and one Music Freestyle flight. The normalised results of the preliminary rounds for the top 10 pilots plus the three fly-off scores provide four normalised scores with the best three to count for the final individual classification. If only one fly-off could be flown the final individual classification will be calculated by using the normalised results of the preliminary rounds for the top 10 pilots plus the normalised scores of this fly-off. If not more than two fly-off flights are possible the final individual classification will be calculated by using the normalised results of the preliminary rounds for the top 10 pilots plus the two fly-off scores provide three normalised scores with the best two to count.

At national and open international competitions, the preliminary/fly-off system is not mandatory.

Ties will be broken by counting the throwaway score. If the tie still stands, a "sudden death" freestyle fly-off must take place until a decision is made.

The team classification for World and Continental Championships is established at the end of the competition (after the fly-off flights) by adding together the numerical final placings of the three team members using the full list of competitors **without participants who were registered during a possible second phase of the preliminary entry** unless there is a fourth or a fifth member of the team (who must always be a junior and/or a woman) in which case it will be the three best placed members. Teams are ranked from the lowest numerical scores to the highest, with complete three-competitor teams ahead of two-competitor teams, which in turn are ranked ahead of one-competitor teams. In case of a tie, the best individual placing decides the team ranking. (Ref: *CIAM General Rules*, C.15.6.2 i))

Reason:

The clarification is necessary because due to the possibility of a second phase of the preliminary entry it must be stated that the additional competitors will not influence the team result.

j) CLASS F3N OPTIONAL MANOEUVRE LIST – B.3 Time Travel – Rule change **F3CN Subcommittee**

B.3 Time Travel 11.5

MA hovers upright on the centreline nose in. MA then performs a pirouetting tic toc loop with skids out. The circular loop must consist ~~of exactly 12~~ **a suitable number of** tic tocs. After each tic toc the boom must point to the centre of the loop. MA boom will change direction corresponding to **nearly** 1 hour per tic toc. Each tic must include a half pirouette in one direction, and each toc must include a half pirouette in the opposite direction. MA completes the manoeuvre by stopping in the same orientation and location as the starting point.

Reason:

The evaluation of the manoeuvre needs to be simplified.

k) 5.11.9 Organisation – Rule change **F3CN Subcommittee**

The flight order for the first Set Manoeuvre round will be determined by a random draw. The flight order for rounds two (Freestyle), three (Set Manoeuvre) and four (Music Freestyle) will start after the first, second and third quarter of the initial order. **This means the second rounds begins with the second quarter of the initial order after the first quarter of the initial order has been moved to the end and so on**. The flight order for the fly-offs will be determined in the same manner.

Preparation Time: A competitor must be called at least 5 minutes before he is required to enter the start box. The MA may be hovered only up to 2m in the start box. After the preceding competitor has finished his flight, the competitor is given another minute (two minutes in Freestyle) to make last minute adjustments or checks.

Reason:

It needed to be clarified how the starting orders for all rounds should be determined.

14.5 Section 4 Volume F3 - Soaring

a) F3F.10. Safety - Clarification — RC Soaring Subcommittee

F3F.10. Safety

The sighting device used for judging the turns must be placed in a safe position.

The organiser must clearly mark a safety line representing a vertical plane which separates the speed course for the timed flight ~~(from leaving the hand until completing the scored flight)~~ from the area where judges, other officials, competitors and spectators stay. Crossing the safety plane by any part of the intact model in the direction of the safety area during the ~~timed~~ flight, **from leaving the hand until the last crossing of base A**, will be penalised by 100 points each…

Reason:

Clarification: The phrase "timed flight" is ambiguous in the present wording, and the explanation fraze isn't in the best place. In the proposal, the first sentence declares the position of judges, the second introduces the safety plane only, and the third declares the penalty and conditions for awarding it.

b) F3K.9.6. Re-flight – Clarification — RC Soaring Subcommittee

Add the following sentence to the end of the article F3K.9.6 Re-Flights

For fly-off only the option c) may be used.

…

Reason:

In fly-off the option a) is not possible, and the option b) gives the advantage of improving the results only to a part of the fly-off group.

c) F3K.11.3. Task C (All up, last down) - Clarification — RC Soaring Subcommittee

F3K.11.3. Task C (All up, last down)

…

No working time is necessary. **For paragraph F3K.9.6. Re-Flights, the aggregate of all 3 (or 5) flight times means the working time.**

…

Reason:

The definition F3K.11.3. Task C (All up, last down) states: "No working time is necessary ". Therefore, the paragraph Re-Flights does not cover the organiser's mistakes in task C.

The proposed amendment corrects it.

d) F3K.11.12 Definitions of tasks – Task L (One flight) – Rule change — Germany

Shorten the working time in Task L (One flight) to 7 minutes.

F3K.11.12 Task L (One flight)

During the working time, the competitor may launch his model glider one single time. The

maximum flight time is limited to ~~599~~ 419 seconds (~~9~~ 6 minutes 59 seconds).

Working time: ~~10~~ 7 minutes.

Reason:

Since the new Task N (Best flight) was introduced last year, the Task L (One flight) is hardly ever chosen by organizers. It is a very difficult task which can "destroy" the competition, even though the participant has flown a good flight result of three minutes for example.

By shorten the working time to 7 minutes, the maximum score will be reduced. This makes the flights worth more and the task doesn't spoil the whole competition.

Another argument in favour of the rule change is that it gives the organizer another (second) task with a 7-minute working time, which makes it easier to schedule the competition. Especially in large competitions with many groups, this is a good instrument to make the daily schedule efficient.

e) F3L.3.2. Not allowed is the use of: - Rule change CZE

F3L.3.2. Not allowed is the use of:

a) positive or negative molds for construction of the fuselage or wings or the surface treatment.

b) a fixed or retractable arresting device (i.e. bolt, saw tooth-like protuberance, etc.) to slow down the model on the ground during landing. ~~The model's underside must not have any protuberances other than the tow hook (see F3L.3.1 h)) and surface control linkages.~~

c) a fuselage nose with a radius less than 5 mm.

d) ballast which is not carried internally and fastened securely within the airframe.

e) any telemetry with the exception of radio signal strength, receiver temperature and battery voltage. No variometer permitted.

f) any telecommunication between competitor and helpers, including mobile phones or walkie-talkies

Reason:

We completely understand the intent of the rule maker to explain that braking devices on the underside of the hull are prohibited. This requirement remains in the rules. But a sentence about the underside of the model, in practice, has the unintended and unwanted effect. The same request to modify the rules was made for F5L and it is important that these categories are basically the same.

Supporting data:

Some modelers and organizers interpret it in their own way. Examples: no part of the vertical tailplane may protrude below the underside of the fuselage, and no horizontal tailplane may be glued to the underside of the fuselage. We consider this interpretation to be incorrect. It limits the possible concepts for the arrangement of the tail surfaces of the models, and limits the fun of the category, which consists in inventing your own designs and concepts. We believe that removing this sentence from the rules will prevent misleading interpretation of this rule point.

f) F3L.11.2 Scoring of the Landing - Rule change CZE

A landing bonus will be awarded in accordance with distance from the assigned landing spot, according to the following tabulation:

Distance from spot up to m(metres)	points	Distance from spot up to m(metres)	points
0.2	100	5	80
0.4	99	6	75
0.6	98	7	70
0.8	97	8	65
1.0	96	9	60
1.2	95	10	55
1.4	94	11	50
1.6	93	12	45
1.8	92	13	40
2.0	91	14	35
3.0	90	15	30
4.0	85	over 15	0

Zero points for landing will be recorded for the competitor, if:

a) the nose of the model sticks into ground on landing and the tail does not come to rest on the ground (see F3L.10.d).

b) the model sheds any parts on landing.

~~c) the model is not airworthy after landing.~~

c d) the model has overflown the group's working time.

d e) the competitor or helper touches the model during landing.

e f) the competitor or helper touches the model before the official scorekeeper has measured the distance.

Zero points for the entire round (flight and landing) are awarded if:

a) the model comes to rest outside the landing boundary specified by the organiser, unless the competitor launches his model for another attempt.

b) the model has overflown the group's working time by more than 30 seconds.

Reason:

We believe that the requirement of "model airworthiness" after landing is very difficult to control and enforce. There is no clear interpretation of the term "airworthy model" and this leads to endless discussions. The aim of the modification is to remove the point of contention. The same request to modify the rules was made for F5L and it is important that these categories are basically the same.

Supporting data:

Based on the experience gained from the competitors and organizers we confirmed the difference in perspective on model airworthiness and especially on proving airworthiness. A broken model

can be considered airworthy if it is thrown hard enough. Another problem is the hidden inability to fly after landing. The model looks fine after a hard landing. The timekeeper considers the flight correct, writes down the result. The flight is over. The contestant takes the model off the runway and finds serious structural damage to the model that was not obvious enough. He could not be penalized because the damage to the model could not be detected until a closer inspection of the model.

g) RC Soaring World Cups: 1. Classes and 3. Contests – Rule change CZE

Add the class F3L to the list of World Cup classes and to the paragraph stating the minimum number of rounds necessary to fly.

1. Classes: The following separate classes are recognised for World Cup competition: F3B, F3F, F3G, F3K, F3L and F3J.

2. …

3. Contests: Contests included in the World Cup must appear on the FAI contest calendar and be run according to the FAI Sporting Code. In the contests competitors of at least two different nations must take part. For the results to be counted as part of the World Cup the following number of rounds must be completed: F3B or F3G — 1 round and 1 task, F3F or F3L — 4 rounds, F3J — 4 preliminary rounds, F3K — 5 rounds all of different tasks.

Reason:

The interest in the F3L class and the number of international competitions is increasing. The World Cup rules should be prepared for organising the World Cup in this class.

14.6 Section 4 Volume F4 – Scale Models

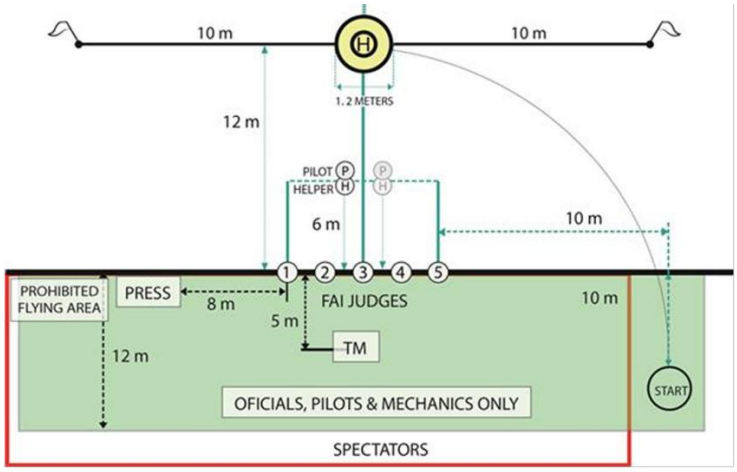
CLASS F4K – Radio controlled scale Helicopters (Provisional)

a) 6. 11.1.10 – Rule change

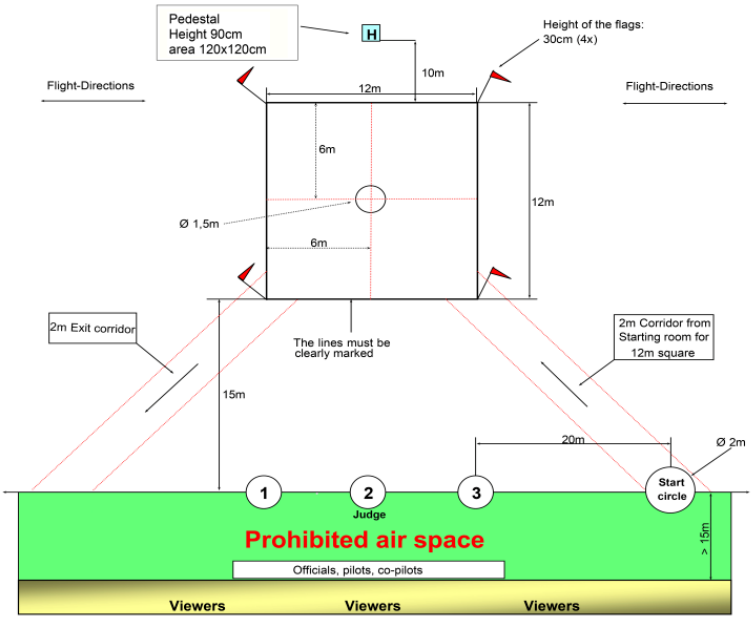
Switzerland

6.11.1.10 Contest Area Layout

~~current layout~~



new layout



Reason:

The helipad was not taken over from the F4K design. Not fair to figures.
- Platform is missing.
- Only 3 judges.
- Dimensions are specified.

b) 6.11.2.1 – rule change **Switzerland**

6.11.2.1 Judging

The aspects according to 6.11.2.3 **a/b/c** must be judged from a minimum distance of five (5) meters from the model. **For 6.11.2.3d, the model may be judged from a distance of 1 meter. The judges may not take measurements of the model and may not touch the model.** The pilot and/or helper must be present at the judging in order to position the model as required by the judges. ~~The judges may not take measurements of the model and may not touch the model.~~

Reason:

The distance of 5 meters is too far for aspect 6.11.2.3d Realism. Some of our models are only 1.8 meters wide.
This is a disadvantage.

14.7 Section 4 Volume F5 – Electrics

a) 5.5.11.12. Scoring – rule change **Bulgaria**

Modify timing start

5.5.11.12. Scoring

a) The attempt must be timed from the moment of ~~release from the hand of the competitor or his helper to either~~: **motor ON (motor ON signal for electronic timekeeping):**

Reason:

Allow proper start of AMRT automated timekeeping.

Data:

More and more AMRT devices support timekeeping and motor ON command is the best point for start timing.

b) m) 5.5.11.1.3. Characteristics of Radio Controlled Gliders with electric motor and altimeter/motor run timer (AMRT). – rule change **HUNGARY**

Instruction: *Add subpart iv) at the end of paragraph h)*

h) **……..**

iv) **The competitor must use an altimeter (AMRT) and firmware in which the last 3 contest flights data of one competition day are stored in the memory. The competitor is obliged to hand out his AMRT for checking or computer download of the data of last 3 contest flight of the actual day when so requested by the CD. In the event that the competitor's start height in the altimeter does not match the start height recorded on the scorecard (for any of the last 3 start of the competition) or does not display the altimeter data, the result of the subjected flight is 0.**

Reason:

After the recording of the start height onto the scorecard and the switch-of the receiver and transmitter by the competitor, there is no additional control possibility (for checking the start height) described in the rule for the organizers and jury members in case of any accidental error or deliberate cheating.

In one F5J FAI World Cup competition one competitor had 88 m starting height result, marked on the result table.

One team didn't believe it and looked at the altimeter in the subject competitor's model, which showed 182 m. Result table was modified.

Based on the modified results, it was also suspected that another competitor's starting height of 111 m was not real as well. Competitor was asking to show the starting height on computer after the completed following start. He didn't contribute that.

A protest was submitted on the subject, asking to show the staring height on the computer. That was accepted by the jury, but the competitor, despite the jury's request, did not show his altimeter result on the computer. There was not any further action in connection with this case and 111 m starting height remained valid at the competitor.

The present proposal is identical to the proposal submitted in November 2021, which was declared questionably invalid by the Technical Secretary, with the following:

Technical Secretary Note 2: (Apr. 2022) This proposal is ruled invalid for the moment, since General Rule A.10.1 f) states: Proposals which introduce new electronic devices for use in competition or which make amendments to the operation or specifications of existing electronic devices must be reviewed by the EDIC Working Group. The review by the EDIC

WG Chairman must be sent to CIAM Bureau, S/C Chairman concerned and NAC delegates in writing prior to the Technical Meeting and Plenary Meeting.:

Ruled invalid
From Lex Manfred: (Feb. 22, 2023, to Kevin Dodd**):** I as EDIC chairman have no rights in this matter within CIAM. EDIC WG is acting as advisor and is only executing tasks on electronic devices assigned by the rules stated in volume EDIC. Changing these require consent with the involved subcom.

Supporting data for the proposed technical amendments in the space below:

The F5 Subcommittee F5J Working Group discussed the original (2021) proposal in October-November 2019 and the following representatives accepted it.
Joe Wurts (NZL) Lenny Keer (USA) Jure Pecar (SLO) Laszlo Marko (HUN) Marko Gala (SVK) Massimo Verardi (ITA)
Nick Wu (CHN) Palo Lishak (SVK) Peter Deivel (GER) Shuzo Koyama (JPN) Vladimir Gavrilko (UKR)
Overall Votes Cast: 12, For: 11, Against: 1, Abstain: 0

The F5 Subcommittee voted about the 2021 proposal in March 2022. with the following result:
Overall Votes Cast: 10, For: 8, Against: 2, Abstain: 0

Arguments against the proposal:
1. Not all altimeters store retrievable data.
2. Current EDIC accepted altimeters do not have timestamp.
3. It is difficult to identify which files of which altimeter of which model is relevant for the flight in question after the competitor has left the landing spot.

Arguments in favour of the proposal.
1. The majority of the current EDIC accepted altimeters store much more than 3 flight data, so few competitors are forced to incur additional costs.
2. At the request of the contest director or the jury, a competitor can easily retrieve the relevant flight data from the altimeter memory without a timestamp using the following procedure:
- The competitor or the organizer downloads the altimeter data in question to a computer
- By using the recorded flight time data on the scorecard and recalling the competition history, the competitor identifies which file applies to the start in question.
- If the flight time is the same, on the scorecard and in the record of the altimeter the diagram shows the start height in question.
- The engine test in the pit does not contain reasonably start height and flight time to be evaluated, so it can be easily excluded
- During the competition, except the lunch break, test flights may only be made with the permission of the contest director and the frequency of this is rare and will be remembered by the contest director within a day.
- Also, the number of flights during the lunch break is limited (usually not 10 minutes flight time) and there is little chance that the time of the test flight will match the time of the flight in question. The competitor remembers these.
3. This moment we cannot see the followings:
- When an altimeter with a timestamp (possibly with GPS system) will be available?
- Related to this, when the F5J rule change will take place, where the start of flight time is the engine start and not the release of the model and the end of flight time is the moment the model comes to rest and not the moment of contact with the ground or object in contact with the ground?
- When will the thousands of F5J modellers replace their existing altimeters (3-5 / competitor) with the time stamped version (at a cost of several 100 Euros)?

- When will all competition organisers have a system that can manage all the competitors' altimeters online?
4. The adoption of this proposal will allow the correction of accidental errors during the competition and reduce the risk of deliberate cheating
5. The adoption of the proposal will not hinder the introduction of new devices with timestamp and also facilitate the subsequent verification of flights data recorded with timestamp altimeter.

c) 5.5.10 F5K – Rule change **Netherlands**

Changes:

Add at the end of the second bullit of task C:

Working time is 4:01 minutes, **maximum flying time is 4:00 minutes.**

Reason:

Maximum flight time in All Up is 4 minutes and not 3.59 minutes. It was unclear in previous versions.

This rule is also already implemented in Gliderscore.

d) 5.5.10.3 Nominal Launch Height (NLH) – rule change **Netherlands**

The Nominal Launch Height is the reference launch altitude (NLH) in which there are no bonus or penalties applied and is set in a competitions software program (for example Gliderscore). **The AMRT is fixed for all wind conditions: 60 mtr altitude and 7 seconds motor time**. Pilots can……..

Reason:

It was not clear to pilots that the Motor time (7 sec) and Altitude (60 mtr) are fixed in the AMRT independent of the wind conditions.

The bonus and penalty table in Gliderscore can vary between NHL 60 and NLH 70

e) 5.5.10.6 – rule change **Netherlands**

c) **or the model aircraft first touches any object in contact with the ground. The flight time stops when the model touches an object outside the Pilot Area. The location where the model lands determines whether the plane has landed inside or outside the Pilot Area (in case of touch and land)**

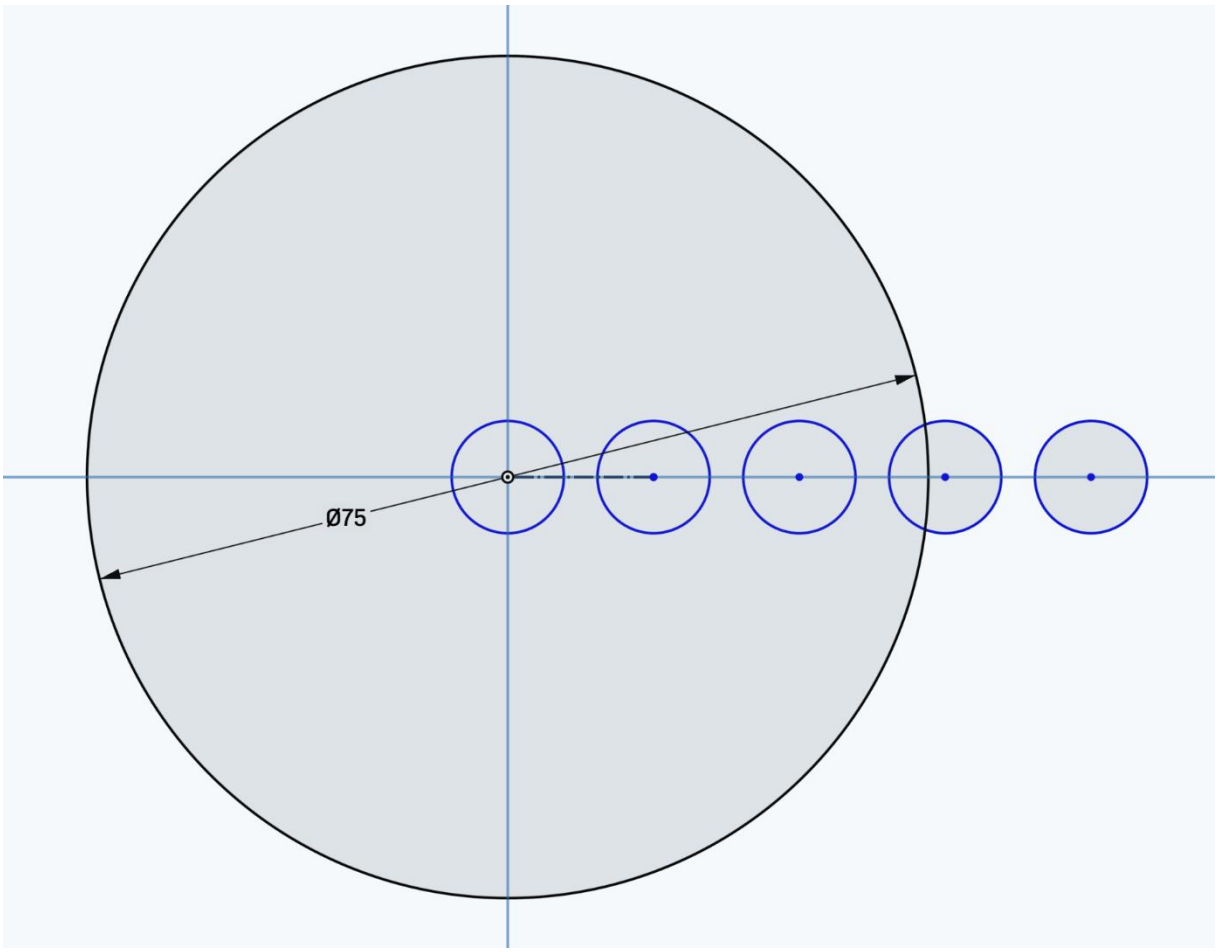
Reason:

It is unclear what the impact is on flight time and landing in or out the Pilot Area in the event of a " touch and go" landing.

f) 5.5.10.11 Launch and Landing area (Pilots Area) – rule change **Netherlands**

Flying field:

Ideally, the flying field should have an area for each Pilot Area that is the size of a "circle with a diameter of 75 meters". See picture below. The competition director may decide to define a smaller flying area if the environment warrants it.



g) ANNEX – clarification
Netherlands
Change:

Delete the "ANNEX of F5K ...."

Reason:

A local rule does not belong to the international rule.

h) 5.5.12.3.1 Model Specifications for Radio Controlled Thermal Gliders F5L CZE
- Rule change

5.5.12.3.1 The model is built mainly with wooden parts. The following methods are permitted:

a) Wings built with ribs, open or covered by wood, „D-box", solid wood wings or a combination of solid wood and ribs.

b) All parts must be made from wood except for the leading edge, spar(s) and connecting parts of the wing panels and the motor mount frame.

c) The surface of the wings may be covered by film, silk, paper or polyester fabric.

Specifications a) to c) are applicable to the tail planes too.

d) The space between the rear edge of the spoilers and the trailing edge must be at least 5 cm. One or two servos may activate the spoilers.

e) The fuselage must be made entirely from wood or with a tail boom made from fiberglass/carbon (GRP/CFRP), Kevlar tube, or profile. The tube/profile must not extend the front half of the wing area.

f) The wooden surface of the fuselage may be covered with fiberglass/carbon (GRP/CFRP) or Kevlar, but not more than a maximum of 1/3rd of the total area. The surface may be protected with varnish or like described in c).

g) Hinges and control rods are exempted from the GRP/CFRP constraint.

h) The selection of the electric motor is free.

i) The selection of battery is free.
j) **The minimum wing loading is not limited**.

Reason:

The F5L category originated as a motorized version of the F3L category. The F3L models have no limitation on area loading in the rules. The F5L is less stressed in powered flight than the F3L when launched by rubber catapult. The addition of the proposed rule change will align the design rules for the F5L models with the F3L category, which we believe is a desirable goal.

Supporting data

During 2024, an interpretation of the rules emerged, pointing out that F5L models are not legal if they have a surface load lower than 12g/dm2. The promoter of this view argued under 5.5.1.3 General Characteristics of RC Electric Powered Motor Gliders F5
Maximum total area 150 dm2
Maximum weight 5 kg
Loading 12 to 75 g/dm2
Fine-tuning the alignment of the F3L and F5L rules is important for the development of the categories.

i) 5.5.12.3.2 Model Specifications for Radio Controlled Thermal Gliders F5L – clarification
Spain

Add a new append to 5.5.12.3 Model Specifications for Radio Controlled Thermal Gliders F5L after the paragraph 5.5.12.3.2

5.5.12.3.2 Definition of the Model Glider

a) Minimum loading, <12 g/dm2. Planes with lower loading are also allowed

Reason:

Many commercial F5L models have a wing loading of less than 12 g/dm², even without efforts to make the plane as light as possible. This often necessitates adding ballast to meet the minimum loading requirement of 12 g/dm².

Additionally, this class is aimed at young pilots and encourages hands-on experience in building and setting up their planes. Introducing this rule simplifies the knowledge, techniques, and setup required for builders to comply with regulations.

In summary, striving for the lowest possible loading does not provide a competitive advantage, as these planes typically weigh around 350-500 grams and are highly sensitive to air disturbances that may arise during competition.

Data:

Some examples of the current models present in the airfields in Spain

Model Name	Manufacturer	FAI (dm2)	Weight	Loading
Viruta	tecnoepoxy	38,7	393	10,2
Wiki	HPmodel	37,01	390	10,5
Magic2	Salahi Tezel	39,45	385	9,8
Magic2	Salahi Tezel	39,45	440	11,2
Ideal	Perform+ (A.Gallet)	42	383	9,1
X-Dream	SETA Modelltechnik	36,0	420	11,6

j) 5.5.12.3.2 Not allowed is the use of - rule change **CZE**

5.5.12.3.2 Not allowed is the use of

a) positive or negative molds for construction of the fuselage or wings or the surface treatment.
b) a fixed or retractable arresting device (i.e. bolt, sawtooth-like protuberance, etc.) to slow down the model on the ground during landing. ~~The underside of the model must not have any protuberances.~~
c) a fuselage nose with a radius less than 5 mm.

d) ballast not carried internally and fastened securely within the airframe.

e) any telemetry except for radio signal strength, receiver temperature and battery voltage. No variometer is permitted.

f) any telecommunication between competitors and helpers, including mobile phones or walkie-talkies

Reason:

We completely understand the intent of the rule maker to explain that braking devices on the underside of the hull are prohibited. This requirement remains in the rules. But a sentence about the underside of the model, in practice, has the unintended and unwanted effect. The same request to modify the rules was made for F3L and it is important that these categories are basically the same.

Data:

Some modelers and organizers interpret it in their own way. Examples: no part of the vertical tailplane may protrude below the underside of the fuselage, and no horizontal tailplane may be glued to the underside of the fuselage. We consider this interpretation to be incorrect. It limits the possible concepts for the arrangement of the tail surfaces of the models, and limits the fun of the category, which consists in inventing your own designs and concepts. We believe that removing this sentence from the rules will prevent misleading interpretation of this rule point.

k) 5.5.12.11.2 Scoring of the Landing – rule change CZE

5.5.12.11.2 Scoring of the Landing

A landing bonus will be awarded in accordance with distance from the landing spot marked by the organisers according to the following tabulation:

Distance from spot up to m(meters)	points	Distance from spot up to m(meters)	points
0.2	100	5	80
0.4	99	6	75
0.6	98	7	70
0.8	97	8	65
1.0	96	9	60
1.2	95	10	55
1.4	94	11	50
1.6	93	12	45
1.8	92	13	40
2.0	91	14	35
3.0	90	15	30
4.0	85	over 15	0

Zero points for landing will be recorded for the competitor, if:

a) the model loses any part.

~~b) the model is not airworthy after landing. If there is any doubt about this, the airworthiness must be demonstrated.~~

bc) the model is overflying the group's working time.

cd) the model touched the competitor or helper during the landing.

de) the competitor or helper touched the model before the official scorekeeper made the distance measuring.

Zero points for the entire task (flight and landing) are awarded if:

a) The model rests outside a landing area as defined by the organizer. Within the working time, the competitor may launch for another attempt.

b) the model is overflying the working time for more than 30 seconds

Reason:

We believe that the requirement of "model airworthiness" after landing is very difficult to control and enforce. There is no clear interpretation of the term "airworthy model" and this leads to endless discussions. The aim of the modification is to remove the point of contention. The same request to modify the rules was made for F3L and it is important that these categories are basically the same.

Data:

Based on the experience gained from the competitors and organizers, we confirmed the difference in perspective on model airworthiness and especially on proving airworthiness. A broken model can be considered airworthy if it is thrown hard enough. Another problem is the hidden inability to fly after landing. The model looks fine after a hard landing. The timekeeper considers the flight correct, writes down the result. The flight is over. The contestant takes the model off the runway and finds serious structural damage to the model that was not obvious enough. He could not be penalized because the damage to the model could not be detected until a closer inspection of the model.

14.7 Section 4 Volume F9 – Drones

A lot of submitted proposals for this section were submitted by person 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.

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.~~

~~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.

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.

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** complete~~d 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.

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.

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.

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.

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.

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.

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.

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.

l) C.6.3. Procedure for the start of the race — 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.

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.

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.

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.

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.

l) 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.

m) 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.

n) 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.

o) 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.

p) 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.

14.9 Section 4 Volume S – Space Models

a) 2.4.4 – rule change + clarification — Slovakia-Serbia-Croatia

Class S5 models shall have a minimum diameter of an enclosed airframe equal or larger than that in the table above for at least 50% of the overall length of each stage. **A S5 model shall not have an additional non-scale boat tail on any part.**

Reason

As additional boat tails are subtracting the scale qualities of the models on any part of them, and causing confusion. A scale model should be modelled as it is without any additional non – scale adapters or boa tails on any part or stage.

b) 2.4.4– rule change — Poland

The minimum dimensions of Class S5 must not be less than:

EventClass	Minimum External Diameter (mm) of each Stage	Minimum Overall Length (mm)
A	20	400
~~B~~	~~25~~	~~500~~
B&C	30	600
D	40	800
E	50	1000
F	60	1500

Reason

The proposed change:

1. will simplify the competition by reducing the types of models,

2. will enable the assessment of the correctness of the flight by a safety range judge (currently achieved altitudes make this impossible in practice) in S1 and S5,

3. will enable an increase in the number of models,

4. will lower the flight altitude,

5. will equalize the proportions in the static assessment.

6. will encourage the creation of more complex models and increase their diversity

c) 2.4.4 – rule change USA

Revise rule 2.4.4 to increase the minimum dimensions of an S1 sustainer.

2.4.4 Minimum dimensions of subclasses of classes S1, S2, S3, S6 and S9 must not be less than:

Event Class	Minimum External Diameter (mm)		Minimum Overall Length (mm)
	Minimum Diameter (mm)	Minimum Length (mm)	
A/2, A & B	40	250	500
C	50	325	650
D	60	400	800
E	70	475	950
F	80	550	1100

The model length is the distance from the top of the model to the lowest part of the model~~s~~**'s** body. In the case of Class S1 models, the smallest body diameter must be not less than ~~18~~ **25** mm for at least ~~75%~~ **65%** of the overall length of each stage. An S1 sustainer stage may not have a boat tail.

Reason

Using current model sizes, an 18mm diameter S1 sustainer stage flies to altitudes where the model is extremely difficult to see. **This makes it very challenging for the Range Safety Officer (RSO) to assess if the recovery system of the model has deployed safely.** The high altitude also makes it difficult for the competitor to see and successfully recover the model.

Increasing the minimum required dimensions of the sustainer stage will reduce the apogee height, thereby improving visibility for the RSO and the competitor.

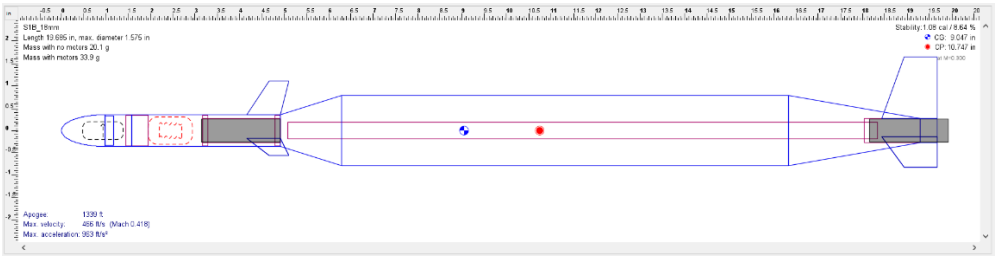
There have been previous Continental Championships where the RSO could not see the sustainer flight and safe recovery device deployment. The RSO had to declare "Model To Control" so that the model, if found, could be inspected after the flight. Many contestants were forced to do extensive ground searches to try to find their models including expensive altimeters. This is not a good way to run an FAI event.

Data

The first illustration below shows a typical S1B model that conforms to the dimensions specified in the SM Code, 2024 version. The winning flights at recent European and World Spacemodeling Championships were approximately 700 meters altitude or above. At these altitudes, the sustainer cannot be seen.

The second illustration shows an S1B model that has a 25 mm diameter sustainer for 65% of the sustainer's length (which maintains the length/diameter ratio of the current sustainer). Altitude calculations predict that using a 25 mm sustainer will reduce the maximum altitude by ~25%. **Due to the lower altitude and larger size, the sustainer will be 250% easier to see**. **This will significantly improve visibility for the RSO. It will also make it easier for the contestant to track and recover the model and its expensive altimeter.**

S1 model with 18mm diameter sustainer (2024 rules)



S1 model with 25mm diameter sustainer (proposed)

d) 2.4.4 – rule change USA

Revise rule 2.4.4 to adjust the minimum dimensions for Class S5.

2.4.4 The minimum dimensions of Class S5 must not be less than:

Event Class	Minimum External Diameter (mm) of Each Stage	Minimum Overall Length (mm)
A	~~20~~ **25**	~~400~~ **375**
B	~~25~~ **30**	~~500~~ **450**
C	~~30~~ **40**	600
D	~~40~~ **60**	~~800~~ **900**
E	~~50~~ **80**	~~1000~~ **1200**
F	~~60~~ **100**	1500

Reason

The current rule requires models with a minimum length-to-diameter ratio of 20:1. The proposed change will use a minimum length-to-diameter ratio of 15:1. This will greatly expand the range of candidate prototypes. It may also provide a bit more emphasis on scale static points (craftsmanship, details, etc.).

e) 2.4.4 S1 sustainer construction– rule change United Kingdom

The model length is the distance from the top of the model to the lowest part of the models body. In the case of Class S1 models, the smallest body diameter must be not less than 18 mm for at least 75% of the overall length of each stage. An S1 sustainer stage ~~may~~ **must** not have a boat tail.

Reason

Although the intention of the word “may” (may not) was to disallow the use of boat tail, the dictionary meaning and use of it allows more than one interpretation. One of those interpretations

would enable a competitor to use a form of a boat tail. The word “must” (NB. “**must not**”) categorically disallows the use of a boat tail.

f) 2.4.4 Minimum External Diameter of each stage **United Kingdom**

The minimum dimensions of Class S5 must not be less than:

Event Class	Minimum External Diameter (mm) of each Stage	Minimum Overall Length (mm)
A	20	400
B	~~25~~ **30**	500
C	~~30~~ **40**	600
D	40	800
E	50	1000
F	60	1500

Reason

Increase in minimal diameter will introduce a broader range of prototypes available to competitors. Current rules favour the likes of SS-520 amongst two stage models and MMR-06 amongst single stage because of their proportions. In ESMC ’24 those represented approx. half of all entries, therefore originality was very low. Other prototypes fare much lower altitudes despite greater complexity.

Increased diameter reduces overall flight altitude, which will result in:

- Easier observation of deployment by RSO
- Increased chances of locating the model in the sky, thus improved odds of recovery

Reduced impact of flight altitude points will place more focus on the workmanship aspect of building a scale model, which this competition should be predominantly about.

g) 2.4.5– rule change **USA**

Revise the wording in 2.4.5 to allow active control stability as well as aerodynamic stability.

2.4.5 ~~Design and construction shall include attached surfaces that will provide aerodynamic stabilising and restoring forces necessary to maintain a substantially true and predictable flight path. If required by the rules for a specific class, local rules for competition and/or safety officers or judges, the competitor entering the model must present data regarding the locations of the centre of gravity, centre of pressure, gross weight, burnout weight, and/or calculated or measured flight performance of the model.~~ **Design and construction must include suitable means for providing stabilizing and restoring forces necessary to maintain a substantially true and predictable flight path. If required by safety officers or judges, the builder of the model**

must present data demonstrating that their model meets this requirement. These data must be submitted with models S5 and S7 at model processing before a model is entered to competition.

Reason

Some spacemodels, especially scale models, are using modern electronics to provide stable flight via autonomous control including thrust vector control. Rule 2.4.5 needs to be updated to allow and encourage these advanced technologies.

h) 2.4.6 – Use of pyrotechnic payload — United Kingdom

A single-stage space model shall not contain any type of explosive or pyrotechnic payload. The prefabricated delay charge grain and ejection charge which deploys the recovery device, that are pre-assembled or affixed to the space model motor, shall not be considered an explosive or pyrotechnic payload. **A multi-stage space model may contain additional pyrotechnic payload outside of that pre-assembled or affixed to the space model motor, e.g., tape match, fuse, black powder, for the purpose of staging only.**

Reason

It shall remain that use of additional pyrotechnic payload cannot be used to launch a dart out of a single stage model. Two-stage models must typically use a small portion of extra charge in a flash tube to allow extension of the flash and sustainer motor ignition. In existing wording this is not allowed but also cannot be verified after the flight that such payload was or was not used.

i) 3.9 MODIFICATIONS – clarification

A space model motor shall not be altered in any manner to change its published performance characteristics or dimensions and shall not be used for any purposes except those recommended by the manufacturer. **If needed, only the ejection charge can be modified as its variation does not modify the published characteristics of the motor.**

Reason

A common practice by competitors during competitions is to modify the ejection charge and/or the delay grain.

Note that rule 3.9 prohibits any modification to the engine, while rule 3.1.1(*) provides that delay grain and ejection charge can be separated from the rest.

It seems appropriate to explicitly state that only the ejection charge can be modified because, in compliance with 3.9 itself, the published characteristics are not modified, while it would be if the delay were modified.

(*) 3.1.1 A space model motor shall be a solid propellant reaction motor, which has all propellant ingredients preloaded into the casing in such a manner that they cannot easily be removed. Delay grains and ejection charges may be pre-mixed and packaged separately if the auxiliary package is a single, pre-assembled unit containing all of the remaining combustible material.

j) 4.3.4– rule change USA

Revise the wording in 4.3.4 to allow floating head piston launchers.

A launcher shall not impart any velocity change or change of momentum except for that caused by the space model engine(s) contained in the space model. A launcher shall not include any stored energy feature (pyrotechnic, chemical, mechanical, pneumatic, etc.) that imparts velocity change or change of momentum to the rocket. ~~No part of the launcher shall lose contact with the launcher assembly.~~

Reason

The original design for a piston launcher used a fixed head. This method works but causes very high structural loads when the piston tube impacts the fixed head.

An alternate design is called the floating head piston launcher. This design picks up the piston head at full stroke instead of impacting a fixed head. The piston tube then detaches from the rocket.

R&D work has shown **that the performance of fixed head and floating head pistons are the same.** However, the structural loads of a floating head piston are significantly lower than those of a fixed head piston. **Lower loads means less wear-and-tear on launch equipment and increased probability of successful flights.**

Data

See the R&D project report for detailed information.

k) 4.3.4– Assisted Launch United Kingdom

A launcher shall not impart any velocity change or change of momentum except for that caused by the space model engine(s) contained in the space model. A launcher shall not include any stored energy feature (pyrotechnic, chemical, mechanical, pneumatic, etc.) that imparts velocity change or change of momentum to the rocket **or rocket glider**. No part of the launcher shall lose contact with the launcher assembly.

Pressurization (piston) launchers ~~that use the exhaust gas from the space model motor(s) contained in the space model to accelerate the space model may be used unless prohibited for an event. No other materials or devices may be added to or included in the launcher to augment the pressure produced by the space model motor(s) contained in the space model. For the S1, S2, and S5 events, pressurization (piston) launchers shall not be used. For these events.~~ The nozzle(s) of the space model motors(s) contained in the model must be exposed to the atmosphere.

Reason

It has been proven through removing piston launchers for altitude categories that competitors can make models that work and win without the assisted launch. This will also level the field and merit workmanship yet again.
As occasionally seen, motors may be fitted too loosely in the model and too tight in the piston, resulting in motor separating from the model and flying away on its own uncontrollably, which poses a great safety hazard.

l) 4.6 DISQUALIFICATION **Italy**

In the S4 classes, the model must reach a stable flight within 30 s from the moment the model or any part of the model leaves the launching device, otherwise the flight is disqualified.
In S3, S6 and S9 classes, the recovery system must deploy correctly within 30 s from the moment the model or any part of the model leaves the launching device, otherwise the flight is disqualified.
Once the flight has been declared valid by the RSO, any subsequent event that makes it unstable temporarily or until its completion or until the maximum time is reached (such as the activation of a dethermalizer) or that makes it liable to disqualification (such as the accidental detachment of a part), cannot be considered a reason for disqualification.

Reason

It seems appropriate to handle particular events in flight after the flight has been declared valid by the RSO.

m) 4.8 TIMING AND CLASSIFICATION **Italy**

In order to decide the winner when there is a tie, additional deciding flights shall be made immediately after the last flight of the event has been completed. There shall be no more than two fly-off rounds to determine the winner. The maximum time of flight in the first fly-off round shall be increased by two (2) minutes on the maximum time of flight of the previous round. The second fly-off round will be timed to the completion of the flight for final results. There shall be only one attempt for each additional flight. The times of the additional flights shall not be included in the final figures of classification for teams, they are for the purpose of determining the winner and for awarding the prizes attached to the title. The organiser will decide the time**, no less than 15 minutes**, during which all competitors must launch their models. In the case of a tie in the team classification, the best individual score (classification) will be used.

Reason

It seems appropriate to establish by regulation the minimum duration of the fly-off rounds.

n) 4.8.4 TIMING AND CLASSIFICATION **Italy**

For World and Continental Championships, a round is defined as the amount of time allocated by the organiser for a national team to prepare and launch their models for one official flight per team member (one hour is recommended **duration of no less than 1 hour**).

Reason

In Category 1 contests (World/Continental Championships) the rounds in S1, S3, S4, S5, S6, S9 cannot last less than 1 hour for Reason of greater fairness and sporting equity.

o) 4.8.3. – rule change **Slovakia-Serbia-Croatia**

In order to decide the winner when there is a tie, **one** additional deciding flight~~s~~ shall be made immediately after the last flight of the event has been completed. ~~There shall be no more than two fly-off rounds~~ to determine the winner. ~~The maximum time of flight in the first fly-off round shall be increased by two (2) minutes on the maximum time of flight of the previous round.~~ The ~~second~~ fly-off round will be timed to the completion of the flight for final results. There shall be only one attempt for each additional flight. The times of the additional flight~~s~~ shall not be included in the final figures of classification for teams, they are for the purpose of determining the winner and for awarding the prizes attached to the title. The organiser will decide the time during which all

competitors must launch their models. In the case of a tie in the team classification, the best individual score (classification) will be used.

Reason

At championships as well other Contests it was shown that two fly-offs are not needed to determine the winner, as well it is a burden for the modelers as well the organizer to manage two fly-offs. One additional flight is enough to determine the winner.

p) 4.8.13 (new) and 4.8.14 (new) USA

Add new rules 4.8.13 and 4.8.14 to define availability and cost requirements for altimeters.

4.8.13 No electronic altimeter shall be permitted for contest use unless it is commercially available to all competitors at least nine (9) months prior to the contest in which it will be used.

4.8.14 Electronic altimeters for contest use shall cost no more than €150 per altimeter. Altimeter-unique readers/receiver units (including software) shall cost no more than €200 per unit.

Reason

Competitors need to have access to electronic altimeters and any related readers/receiver units well before a contest event so that the competitors can become proficient with the equipment. The items should be available at reasonable prices.

Data

Adrel altimeters include a data download adapter and software are commercially available for less than $100. These altimeters have been used in many international contests.

Other altimeters used in United States contests are commercially available for less than $100.

q) 9.1. – scale competition Slovakia-Serbia-Croatia

Delete point 9.11. Scale Judging and replace it with a merged table – all points from Annex 1. This table move to the end of the part nine. Move definition for a scale model prototype (annex 2 d) to paragraph 9.1.

Reason

The current definitions are presented twice and are complicated – to ease the sporting code it is enough to have all data for judging consideration in the part nine and in one judging table. One table which as well can be used for judging, is at one point self explanatory, on the other point it will be used as main judging material.

PART NINE - SCALE COMPETITION (CLASS S7)

9.1. DEFINITION

Scale competition is a single event and is limited to flying space models that are true scale models of existing or historical guided missiles, rocket vehicles, or space vehicles.

Note: To indicate the subject full-size rocket being scale modelled, the word "prototype" may be used. To indicate the scale model itself, the word “entry” may be used.

A scale model prototype is defined as the first sub-class of a rocket family (according to official sources this is defined as version). For example : Ariane is the name of a rocket family, which has flown five launch vehicles up to date, thus: Ariane 1, 2, 3, 4 and 5. These five launch vehicles are defined as different scale model rocket prototypes.

9.2. MULTI-STAGE PROTOTYPE

If the entry is a scale model of a multi-staged vehicle, it may be designed so that one or more of the upper stages are inoperable dummies. However, the upper stage of a multi-staged vehicle may not be entered and flown without its operable lower stages unless specific data is furnished to the judges to prove that the upper stage configuration was designed to be or has flown separately, alone, and as a vehicle itself. For example, all Aerobee rockets must have operable boosters.

9.3. SELECTION OF PROTOTYPE

The competitor must have modelled one particular serial-numbered prototype, except in the case where the prototype is in such large mass production that there is no single individual vehicle that can be singled out for scale modelling purposes. However, the competitor shall make every reasonable attempt to model a specific prototype.

9.4. PROOF OF SCALE

The competitor must supply scale data to substantiate his entry’s adherence to scale in dimension, shape, colour, and paint pattern. Minimum allowable data consists of length and diameter of the prototype, one photograph and data required in rule 2.4.5. Further data is certainly encouraged. Dimensional data must be from an accurate source such as magazines, books, manufacturer’s specifications or data sheets, etc. Photographs from any sources are acceptable. All data presented should apply to the particular prototype that is modelled and entered. Judges may deduct points for incorrect data.

9.5. KITS AND KIT PARTS

Flying scale space model kits may be used as a source of design, materials, etc. and acceptable for entry only if accompanied by scale substantiation data other than that contained in the kit or available from the kit manufacturer. The competitor shall be responsible for ascertaining the correct scale qualities of the kit and must present satisfactory evidence that the kit model is correct to scale.

9.6. STABILISING FINS

Scale models of rockets, missiles or space vehicles that are, in the opinion of the competitor, insufficiently fin-stabilised may be fitted with transparent plastic fins so as to make the model stable in flight while detracting the least from the scale qualities of the model. The clear stabilising fins may be detached from the entry for static judging, but must be presented with the entry (best near it).

9.7. PLASTIC MODEL KIT PARTS

Parts from plastic model kits and 3D printed parts may be used on scale space models provided that this use is pointed out in the data presented with the model at the time of judging for scale qualities.

9.8. CONDITIONS OF MODEL FOR JUDGING

Entries will be judged for scale qualities in flight condition minus space model motors. All launching lugs, fittings and other flight items must be attached to the model for scale judging. Nothing may be added to or taken off the model between the scale judging and the flight except space model motors, detachable plastic fins and recovery device packing.

9.9. MAXIMUM WEIGHT AND IMPULSE

Maximum allowable gross launching weight is listed in Rule 2.1.

Maximum allowable total impulse is listed in Rule 2.2.

9.10. NUMBER OF FLIGHTS

Each entry must make a stable flight, and two (2) opportunities will be available to the competitor for this purpose, time and weather permitting.

9.11. SCALE JUDGING

Scale quality points will be awarded to each entry according to the following table:

CATEGORY	SUB-CATEGORY	JUDGING CONSIDERATIONS	POINTS
Technical Data	Technical Documentation	A competitor who presents the following proper technical data may be awarded with points defined in the paragraphs below only for items documented in these technical data: ▪ authentic, authorised drawing(s) of the prototype with cross sections, i.e. data which define colour and markings on it; ▪ workshop drawing of the entry that shows prototype and model dimensions; ▪ photographs of the whole prototype with clearly visible details of colour and markings; ▪ photographs of details and assemblies; ▪ flight profile - taken from official sources: official publications, magazines, books, specifications of the design bureau or developer of space rocket systems; ▪ drawing that indicates powered parts and separation joints ▪ file containing all necessary technical data including data regarding the locations of the centre of gravity, centre of pressure, gross weight, burnout weight and/or calculated or measures flight performance of the model necessary for safety reasons.	Note: no points for technical data. Check only what is submitted of the required data and below, give points only to those items documented by these technical data.
Degree of Difficulty	Configuration	To what degree does the entry depart from the configuration of a “finned cone-topped cylinder”	(0-25)_____
	External Components	Consider the number and complexity of the entry’s external components including fins, transitions, interstage adapters, shrouds, strap-on booster, launch lugs, antennae, etc. Also consider to what extent the aforementioned components were prefabricated by none other than the entrant.	(0-30)_____
	Detailing	Consider the number of separate details including nuts, bolts, screws, rivets, fasteners, welds, hatches, panels, corrugations, etc. Also consider to what extent the aforementioned details were prefabricated by anyone other than the entrant.	(0-35)_____
	Paint Pattern	Consider the number of colours and complexity of the entry point pattern. Also consider the number and complexity of the entry’s markings and to what	(0-20)_____

Originality		extent these markings were prefabricated by anyone other than the entrant. **Category Total** (110 max) Bonus points: 40 points for a prototype of one kind in the competition; 20 points if there are two of the same prototype; zero points if there are three models of the same prototype. **Category Total** (40 Max)	(0-40)_____

CATEGORY	SUB-CATEGORY	JUDGING CONSIDERATIONS	POINTS
Scale Adherence	Colour	Comparing the entry to colour photographs, paint samples, or other colour substantiation, to what degree does the entry's colour(s) resemble that prototype's colour? *Subtract points if differs*.	(10-0) _____
	Markings (lettering & insignia)	Comparing the entry to photographs, marking diagrams, or other marking substantiation, to what degree to the entry's markings resemble the prototype's markings? *Subtract points if differs.*	(10-0)_____
	Dimensions	Overall model length Greatest measurable body diameter Length of the body of the first stage Fin span (individual fin or tip-to tip) Selected dimension greater than 20 mm (second stage length, diameter, etc.) Award points shall be based on a % deviation from the prototype's scaled dimensions. Each 1% error reduces the value by 2 points. Deviation > 10% shall be awarded a value of 0. * If prototype is finless, select one other dimension greater than 20 mm and check here ( ) **Category Total** (130 Max)	(20-0)_____ (20-0)_____ (20-0)_____ (20-0)_____ (30-0)_____
Workmanship	Construction	Consider the absence of visible glue joints, that edges and demarcations should be precise, that planar surfaces should be flat, etc. *Subtract points from maximum.* Body & transitions Fins or Stabilising surfaces (including clear plastic) Details	(40-0) _____ (40-0) _____ (50-0) _____
	Finish	Consider that surface textures should duplicate base material of prototype; that paint and other surface coatings should be uniform (unless this	

		would deviate from prototype's finish) thin, dust-free and of the proper texture; that colour demarcations and markings should be crisp* and precise. *Subtract points from maximum.* Body & transitions Fins * *If the prototype is finless, then 40-0 points for "Body & transitions" and check here ( ). **Category Total** (170 Max)	(20-0) (20-0)

~~9.11.1. A competitor who presents the following proper technical data may be awarded with points defined in the paragraphs below only for items documented in these technical data:~~

- ~~authentic, authorised drawing(s) of the prototype with cross sections, i.e. data which define colour and markings on it;~~
- ~~workshop drawing of the entry that shows prototype and model dimensions;~~
- ~~photographs of the whole prototype with clearly visible details of colour and markings;~~
- ~~photographs of details and assemblies;~~
- ~~flight profile - taken from official sources: official publications, magazines, books, specifications of the design bureau or developer of space rocket systems;~~
- ~~drawing that indicates powered parts and separation joints~~
- ~~file containing all necessary technical data including data regarding the locations of the centre of gravity, centre of pressure, gross weight, burnout weight and/or calculated or measures flight performance of the model necessary for safety reasons.~~

~~9.11.2. **Adherence to scale:** 130 points maximum. To be considered as a scale model the dimensions of the body diameter and overall length should not depart from scale by more than 10% or else the entry is disqualified. This rule shall not be applied to dimensions less than 10 mm. The judging category should be judged in two areas: 1) model dimensions - 110 points maximum; 2) colour and markings - 20 points maximum.~~

~~9.11.3. **Workmanship:** 170 points maximum. To be judged on neatness, care of construction, and degree of finish. The judging category will be judged in two areas: 1) workmanship of body, fins and details - 130 points maximum; 2) finish of body and fins - 40 points maximum. Deviations from scale finish such as a high gloss finish on an entry that should have a flat or dull finish will detract from maximum points.~~

~~9.11.4. **Degree of difficulty:** 150 points maximum. To be judged on the degree of difficulty involved in constructing the model up to 110 points. Factors to be considered include symmetry of model; number of external components; intricacy of paint pattern; degree of detailing. A bonus of 40 points for "originality" shall be awarded to a prototype that is the only one in the competition and a bonus of 20 points shall be awarded if two prototypes of the same kind enter the competition. No bonus points shall be awarded if there are three or more models of the same kind. For originality points, prototypes with the same external appearance except for flight serial number/markings and colours/paint pattern shall not be considered unique vehicles (e.g., Saturn IB/Skylab flights, Soyuz-FG/TMA flights, etc.).~~

~~9.11.5. **Flight, characteristics:** 300 points maximum. To be judged on launch, stability of flight, motors and descent. A competitor has to designate which operations his models are to perform in flight (eg separation of powered portions; radio controlled trajectory; ejection of payload, etc).~~

~~If the entry has been disqualified in both official flights, the competitor will not be eligible for final classification.~~

9.11.6. In the case of World and Continental Space Modelling Championships, dimension deviations from the Scale shall be measured by a separate qualified measuring team approved by the FAI Jury. The measured dimensions will be presented to the Scale Judges for verification and included with the Scale Judging Data.

9.11.7. Results for static points and flight characteristics shall be published for the categories defined in Rules 9.11.2 through 9.11.4:

- Adherence to Scale
- Workmanship
- Degree of Difficulty
- Flight Characteristics

For World and Continental Space Modelling Championships, the results for static points and flight characteristics from each judge shall be anonymously published after the competition.

9.12.Should the entry experience a catastrophic failure, be incapable of additional flights (4.6.3.) and have scored no Flight Characteristic points, the competitor's score shall be zero.

Reason

The current definitions are presented twice and are complicated – to ease the sporting code it is enough to have all data for judging consideration in the part nine and in one judging table. One table which as well can be used for judging, is at one point self explanatory, on the other point it will be used as main judging material.

r) 9.1. – scale competition **Slovakia-Serbia-Croatia**

Add a new paragraph "Organization of starts for scale models" after par. 9.8.

9.9. organization of starts for scale models

At World and Continental championships, Competitors will launch their models within a timeframe defined by the Contest director (minimum 15minutes) in a group of five. The competitor may, based on his position at static judging, decide in which group he want to launch. If the competitor does not manage to prepare his model for launch within the defined timeframe, he shall be put to the end of the launching in a new group.

Reason

Current launching of scale models is mostly done within the last minutes of the round and presents a challenge for both, competitors as well for judges. Many cases record that the queue is so big, that the judges couldn't manage to judge all modellers in preparation. As in other aeromodelling sports, setting up an organized field of launches by groups will help to improve the launching logistics, as well help both sides to be better organized.

s) 9.6. – scale competition — USA

Revise the wording in 9.6 to allow active control stability as well as aerodynamic stability.

Scale models of rockets, missiles or space vehicles that are, in the opinion of the competitor, insufficiently ~~fin-stabilised~~ **stable** may be fitted with transparent plastic fins so as to make the model stable in flight while detracting the least from the scale qualities of the model. The clear stabilising fins may be detached from the entry for static judging but must be presented with the entry (best near it).

Reason

Some spacemodels, especially scale models, are using modern electronics to provide stable flight via autonomous control including thrust vector control. Rule 9.6 needs to be updated to allow and encourage these advanced technologies.

(also see the change proposal for Rule 2.4.5.)

t) Annex 1 – DISQUALIFICATIONS — Italy

(Applicable FAI Rule Number Shown in Parenthesis)

Prototype is not a guided missile, rocket, or space vehicle (9.1)

Entry has no lower stage (**applicable to** multi-stage prototypes only) (9.2)

No length and/or diameter data supplied for prototype (9.4)

No photograph of prototype supplied (9.4)

Entry utilises plastic kit and/or 3D printed parts not identified as such (9.7)

Entry not submitted in flight configuration (minus motors, detachable plastic fins and recovery device packing) (9.8)

Entry does not carry competitor's FAI ID number (4.4.2)

Reason

The sentence in its current version does not seem very clear. In fact, the words "multi-stage prototypes only" could be interpreted as an obligation to present only multi-stage models. It is better to clarify the fact that the disqualification occurs only for multi-stage models in which the lower stages are not present.

u) Annex 1– rule change — USA

Page 36 – under "Workmanship, Construction", provision for fin-less models (similar to how this is handled in "Workmanship, Finish")

Page 37 – add "autonomous control" to list of special effects

Page 37 – change the "Motors" section to provide points for clusters

Changes:

Page 36, Workmanship, Contruction:

Fins or Stabilising surfaces (including clear plastic) (40-0)

If the prototype is finless and has no clear plastic fins, then 80-0 points for "Body & transitions" and check here ( ).

Page 37, Flight Characteristics, Special Effects:

Did the model exhibit any special effects such as Launching a space probe, separating boosters, radio control devices, ejecting satellites, deploying shield, scale launcher, gliding recovery, **active control**, etc. Special effects can only emulate the actions of the prototype. Maximum of 20 points for each effect.

Page 37, Flight Characteristics, Motors:

~~Motors~~ **Clusters** ~~To what extent does the placement of the entry's motors coincide with the prototype? Subtract points for each difference from prototype.~~ **Add 5 points for each motor up to a maximum of six motors. No points for single motor models. No points for motors that are not in scale locations and/or extend beyond the outline of the protype's nozzles.**

Reason

Workmanship, Contruction: most modern launch vehicles do not have fins. Recent scale models are using active control (thrust vector control) to provide stability. The proposed changes handle these new configurations.

Special Effect: recognize "active control" as a special effect

Clusters: Clusters of motors are challenging and should be rewarded. The proposed wording recognizes this while also rewarding motors are in scale locations and don't degrade the external appearance of the model.

v) Annex 1 general – rule change + clarification — Poland-Croatia

Delete whole Annex 1 and merge the below proposed new table with Part Nine.

Championship Logo or Emblem	

Competitor Name :		Prototype Name:	
FAI ID Number:	National Team:	Competitor Number:	Prototype Serial Number:

Documentation Checklist – checked by the Judges and marked what is present.

Authorized drawing	Separate workshop drawing	Prototype photographs	Photographs of details	Flight profile	Drawing indicating powered separations	File containing flight data, weights and CG/CP	Color Data

Static judging	Criterion	Description	Points
Craftsmanship	Complexity of General Configuration and External components	Consider the complexity of the entry's outline, color scheme and external components including fins, transitions, interstage adapters, shrouds, strap-on booster, launch lugs, antennae, etc. Consider as well to what degree all components match the prototype. Award the best entry the highest score.	0 – 50
	Construction – outline and external components	Consider the precision of edges and demarcations, flat surfaces, with no visible construction connectors like glue joints Also consider to what extent the aforementioned components were prefabricated by none other than the entrant (kits and 3D Print). Subtract from maximum.	40 – 0
	Details – complexity	Consider the overall complexity of separate details (nuts, bolts, screws, rivets, welds, panels, corrugators, etc.) and to what degree the details match the prototype. Award the best entry the highest score.	0 – 40
	Details – construction	Consider the precision, quantity and layout of details matching the prototype, with no visible construction connectors like glue joints. Also consider to what extent the aforementioned details were prefabricated by none other than the entrant (kits and 3D Print). Subtract from maximum.	40 – 0
	Finish - overall	Consider that surface textures should duplicate base material of prototype; paint and other surface coatings should be uniform (unless this would deviate from prototype's) thin, dust-free and of the proper texture; that colour demarcations and markings should be crisp* and precise. Subtract points from maximum.	40 – 0
	Originality	Bonus points: 40 points for a prototype of one kind in the competition; 20 points if there are two of the same prototype; zero points if there are three models of the same prototype.	0, 20, 40
Scale adherence	Color	Comparing the entry to colour photographs, paint samples, or other colour and marking substantiation, to what degree does the entry's colour(s) and markings resemble that prototype's colours/ markings? Subtract points if differs.	20 – 0
	Markings		20 – 0
	Dimensions	Overall model length	20 – 0
		Greatest measurable body diameter	20 – 0
		Fin span (individual or tip-to tip)**	20 – 0
		(Award points shall be based on a % deviation from the prototype's scaled dimensions. Each 1% error reduces the value by 2 points. Deviation > 10% the entry shall be DQ) *the judges may re-measure any part greater than 20mm to check the	

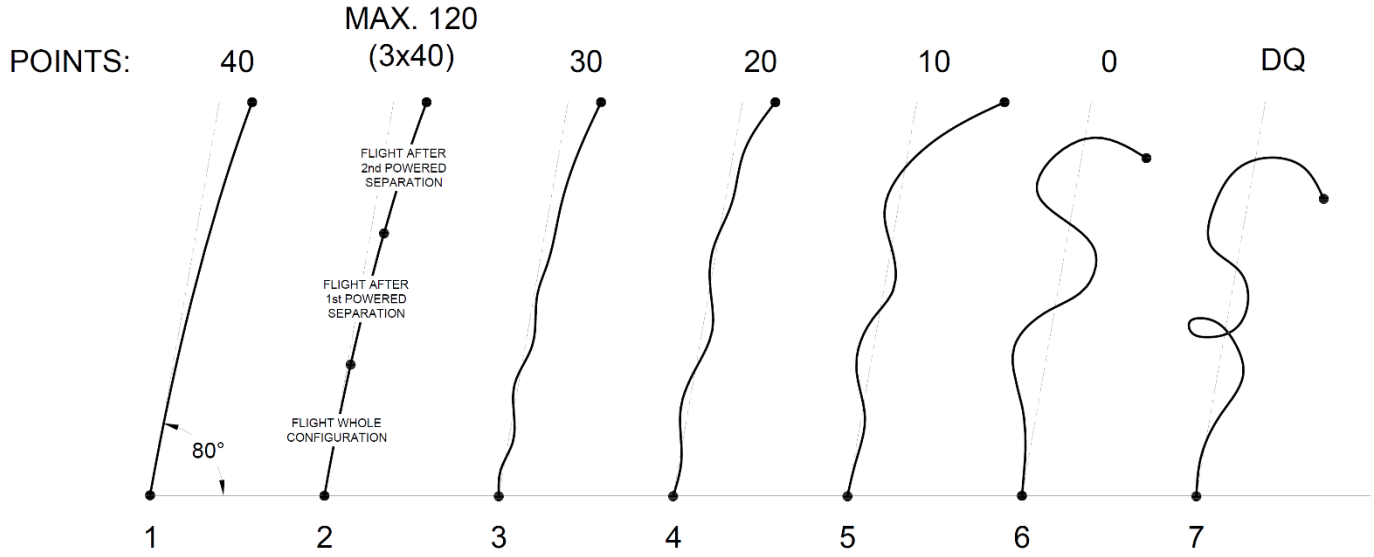
		adherence of the part to scale and subtract points accordingly. ** If prototype is finless, select the second largest measurable diameter over 20 mm and check here ( )	
			Total 350

	Criterion	What to consider	Points	
Flight Characteristics	Launch failure	Subtract 10 points for each failed launch.	0 or minus	
	Realism of launch	Compare the launch with the launch of the prototype, if it differs(e.g. the launch is abrupt for a slow start and vise versa), subtract points.	10 – 0	
	Flight of the whole configuration	Consider the realism of flight compared to all presented data from the prototype. Consider if the flight was vertical or in a stable straight line. Rotation only if prototype rotated. Give points for each part (whole configuration and if done, after powered separation(s)) in comparison with fhe flight chart.	40 – 0	
	Flight after 1st powered separation		40 – 0	
	Flight after 2nd powered separation		40 – 0	
	1st Special Effect	Consider only the special effects presented in flight card at static judging. As special effect conider booster separation, ejecting satelites, deplying shields, scale launchers, gliding recovery, etc. Count only effects which emulate the actions of the prototype. Subtract points for effects if e.g. booster/interstage or shield deployment was late in flight compared to prototype. Do not give any point for not observed effects. Maximum 20 points / effect and maximum 5 effects.	0 – 20	BUT MAX. 80 POINTS FOR ALL SPECIAL EFFECTS
	2nd Special Effect		0 – 20	
	3rd Special Effect		0 – 20	
	4th Special Effect		0 – 20	
	5th Special Effect		0 – 20	
	Motors	Give a bonus if all functional motors are placed in scale nozzles in the first stage	15 or 0	
		Give a bonus if all functional motors do not change the outline of the entry.	15 or 0	

		Total	**240**

Flight chart:

Compare the flight of the analysed portion with the schematic below and give the points closest corresponding to it.



1. straight flight or near straight without any kind of oscillations – 40points

2. schematic of a flight of a three staged entry without any visible deviations from path during powered separation – 3x 40 = 120points

3. straight or nearly straight flight with small oscillations – 30points

4. more curved flight from flight path or/ and with visible oscillations – 20 points

5. flight deviating from flight path or/and with big oscillations – 10 points

6. unstable flight, but without presenting safety issues – 0 points

7. very unstable flights with looping, possible safety issues – DQ of whole flight

Reason

For a longer time (4 years) it was analysed and observed that current issues and complexity occur in the current state of Judging of scale models.

To many points have to be considered twice as well the judge needs to return to the points during judging. By easing the table to only the points which are mostly needed, we will gain more time to judge quality of the models.

With three dimensions to measure, the organizer does not to get a big dimensions measuring team, but the scale judging team can manage all work in time. This largely saves time and money for the organizer.

Flight as well is an important aspect, and to focus only on the major aspects which matter in a scale model – the judges will get by far more quality judging.

The presented proposals also gives explanation to unclarified questions like bonus points for motor establishment in the first stage and flights.

Data

Current over 100 models at World and European Championships take much time to be judged so they have to work long to make all in time. The current table lowers to many aspects to be judged, but does not lower the quality of judging.

w) all– rule change + clarification **SLOVAKIA**

Delete part four, Annex 2 and Annex 5 and replace them with the text below

PART FOUR - CONTEST ORGANISATION REQUIREMENTS

4.1.0. Before the beginning of any Space Modelling competition, the organiser is obliged to provide conditions for competition in accordance with the provisions of the FAI Sporting Code, *CIAM General Rules*. The requirements for organization of an contest are listed below:

4.1.1. General requirements for contest field:

a) Provide a contest area divided in two sectors for seniors and juniors (if both classifications exist in a contest). Each sector shall be composed of the launch boxes 5 x 7 metres marked by plastic, marking ribbon. The whole launching area shall be protected by marking ribbons from the access of non-authorised persons.

b) Provide an official clock (digital with big ciphers if possible) posted next to the score board for timing of the rounds.

c) Provide a public-address system (which may be a megaphone at the events with smaller participation) for countdown and to inform competitors.

d) Provide tent(s) for model preparation for flights by competitors and/or model repair in case of bad weather. A separate tent shall be provided for the computer centre with a printer for result calculations and for the FAI Jury.

e) Organisers of World and Continental Championships must provide lockable plastic boxes with the names of the participating countries. After all the motors have been submitted for testing and samples tested, all the motor boxes shall be impounded in a separate, secure room. The boxes shall be guarded during transportation to the field by special official(s) and delivered to the time-keepers at the relevant launching box that shall control delivery of the motors to competitors.

f) The organiser of a space models international contest listed in the FAI Contest Calendar shall provide and use a software approved by CIAM to produce uniform documentation of the contest. This relates to bulletins, results lists, jury reports and other accompanying documentation required by CIAM. It shall contain:

g) Basic version: Templates for Bulletins 0 to 3, list of the contest officials, result tables for individuals and teams for all space models classes, template for jury report, contest calendar for the current year.

i) Advanced version: Basic version with its on-line presentation, on-line registration of participants, on-line presentation of the results in real time during the contest with automatic sorting of placings, downloadable pdf versions of the presented documents after the contest and downloadable excel versions of result tables.

ii) Sophisticated version: Advanced version completed with checking of on-line registrations in the FAI data base, selecting contests per year, per country and per class, some statistical calculations and presentations etc.

This software shall have a tutorial for those who use it. The updated version if needed shall be approved by CIAM at the end of preceding year for the next year.

4.1.2. Scale Events:

a) Provide a light, dry and warm room large enough for static judging of scale models, for relevant number of entries with bright overhead lights and with tables for turn in, static judging and dimension measuring in classes S5 and S7 with static judging forms according to Volume for Scale models.

b) The static judging area will be equipped with dimension measuring devices (for measurement of length, diameters, thickness and weight) and a PC with a qualified operator. Access to the static judging area during static judging will be restricted to all persons except for static judges, dimension measuring team, PC operator, contest director and FAI Jury.

4.1.3. Altitude Events:

a) Provide the necessary number of CIAM approved electronic altimeters with software for altitude classes S1, S2 and S5 with proven qualified personnel. All electronic altimeters shall be impounded prior to the beginning of the competition and supervised by a special official, qualified and equipped with the relevant devices, to check and calibrate impounded equipment when necessary. If electronic altimeters are not available, Triangulation Method (Annex 6) can be used in Category 2 contests if the organiser provides at least two altitude measuring devices (theodolites) for altitude classes S1, S2 and S5 with proven qualified personnel and an appropriate radio communication system for data transfer from the tracking stations to the computer centre.

b) Tracking by Theodolites at Open International: Organiser of an international altitude event must provide altitude measuring devices in compliance with the rules for Triangulation method and qualified personnel for altitude measuring. He also must provide radio communications between tracking stations, RSO and the computer centre in the field. Altitude measuring team shall do test tracking on duration and/or scale models on the day preceding the competition day(s) for altitude events to check tracking and data reduction systems. The head of the altitude measuring team shall present test altitude measuring results to the Jury to prove altitude measuring team readiness and necessary accuracy of measurements and get Jury approval, before the official flights begin in an altitude event.

c) Electronic altitude measurements with an electronic altimeter shall use the new Sporting Code Volume EDIC – Electronic Devices in Competition – Section 2 - Technical Guidance Notes and Technical Specification for Altimeters Used in Space Modelling Competition V.1.0 for the documentation regarding specifications and guidance.

4.1.4 Rocket Glider Events:

a) for S8A - S8F a landing area in accordance with Volume S paragraph 11.2. and 11.5.c).

b) for S8P a landing line with landing circles in accordance with Volume S paragraph 11.7.5 and relevant subparagraphs.

c) Refer also to CIAM General Rules C.16.2 Radio Control.

4.2CONTEST ORGANISATION – MODELS PROCESSING AND LAUNCHING
See *CIAM General Rules* for details. Moreover the following additions apply:

4.2.1 WORLD CHAMPIONSHIP EVENTS for SPACE MODELS
See CIAM General Rules C.15.2.2 Class S Space Models

4.2. NUMBER OF MODELS
See CIAM General Rules C.10.2 Class S Space Models

4.2.3 OFFICIAL ENTRIES

4.2.4 Entry

Before the first flight in any competition event, at least one model must be inspected and marked by the judges. If a second model is allowed in an event, the second space model may be inspected and marked during the competition event. Two or more competition events may not be flown simultaneously by the same model.

4.2.5 Model Marking and Identification

See CIAM General Rules C.11.2 Class S Space Models.

4.2.6 Builder of the Model

The judges shall make every reasonable effort to ensure that each competitor has completely constructed the model entered in the competition with “construction” to be interpreted as the action required to complete a model starting with no more prefabrication than the amount used in the average kit. Models that are completely prefabricated or require only a few minutes of unskilled effort for their completion shall be excluded from competition. Materials and design may be obtained from any source, including kits. The space model must be prepared for flight by the competitor and optionally assisted for flight by one helper. The helper may be a competitor within the same event. For junior competitors, the Team Manager must provide supervision.

4.2.7 Official Flights

A flight is considered official if the model or any part of the model leaves the launching device, loses contact with the launching device after ignition, or becomes airborne, except in the case of a catastrophic failure according to the provisions of Rule 4.6.3., in which case the flight is not considered official. An attempt is defined at the point where the RSO starts the countdown. A misfire (failed motor ignition) is not considered as an attempt.

4.2.8 Number of flights

In each event, except otherwise stated, each competitor shall be given an opportunity to make three (3) official flights, time and weather permitting. In Scale (S7) two (2) opportunities will be given, time and weather permitting.

4.2.9 Definition of an Unsuccessful Attempt

An attempt is classed as unsuccessful if the model or any part of the model leaves the launching device and at least one of the following cases occur:

a).....model collides with another model during the flight,

b).....proven frequency interference for radio controlled models,

c) catastrophic failure according to the provisions of the rule 4.6.3,

d) “no close” or “track lost” for altitude models.

If this happens on the first attempt in a round, the competitor is entitled to a second attempt in the same round.

4.2.10. Definition of a Re-flight

A competitor shall be allowed a re-flight when he is prevented from making an official flight through no fault of his own. In such cases he or his team manager should notify the RSO immediately. Permission for a re-flight shall be given by the RSO, or in case of a protest, by the FAI Jury. A re-flight shall be made under flight conditions similar to those under which the other official flights for that class were made, but before the official results are announced. If a re-flight is allowed, the competitor shall not be penalised by the loss of a round.

4.3. LAUNCHING – AUTHORITY AND FACILITIES

4.3.1. During all operations concerned with the launching and flight of space models, all authority for the safety and conduct of operations on the flying field shall be vested in a Range Safety Officer. Adequate

opportunity and facilities will be provided so that all competitors in each event at a competition may obtain motors and prepare their models simultaneously for flight under the observation of officials.

4.3.2 Flight Permission

All space models presented for operation on the flying field shall be permitted or denied flight by the Range Safety Officer or his duly authorised deputy on the basis of his considered judgement with respect to the possible safety of the model in flight.

4.3.3 Launching Device

A launching device or mechanism must be used that shall restrict the horizontal motion of the model until sufficient flight velocity shall have been attained for reasonably safe, predictable flight. A launching angle of more than 60 degrees from the horizontal must be used.

4.3.4 Assisted Launch

a) A launcher shall not impart any velocity change or change of momentum except for that caused by the space model engine(s) contained in the space model. A launcher shall not include any stored energy feature (pyrotechnic, chemical, mechanical, pneumatic, etc.) that imparts velocity change or change of momentum to the rocket. No part of the launcher shall lose contact with the launcher assembly.

b) Pressurization (piston) launchers that use the exhaust gas from the space model motor(s) contained in the space model to accelerate the space model may be used unless prohibited for an event. No other materials or devices may be added to or included in the launcher to augment the pressure produced by the space model motor(s) contained in the space model.

For the S1, S2, and S5 events, pressurization (piston) launchers shall not be used. For these events, the nozzle(s) of the space model motors(s) contained in the model must be exposed to the atmosphere.

4.3.5 Launching Procedure

a) Launching or ignition must be conducted by remote electrical means with a launch system that has a safety interlock in series with the launch switch and a launch switch that returns to the “off” position when released. When launching all persons shall be at a safe distance that depends on the space model class, weather conditions and number of spectators.

b) All persons in the vicinity of the launching must be advised that a launching is imminent before a space model may be ignited and launched, and a minimum five (5) second “count down” must be given before ignition and launching of a space model.

c) If a space model does not launch when the button of the electrical launch system is pressed, the launch system’s safety interlock shall be removed or the system shall be disconnected from the battery, and 20 seconds must pass after the last launch attempt before anyone approaches the space model.

4.3.6 Radio Controlled Space Models – Organization of Starts

a) For transmitter and frequency control see *CIAM General Rules*, paragraph C.16.2.

b) Competitors must be called at least five minutes before they are required to occupy the starting area.

c) Once the competitor has been given permission to start, he may delay no longer than one minute before attempting launching.

d) If using an AM/FM transmitter, the competitor must have ability to fly on at least two frequencies.

e) In World and Continental Championships because of increased safety, reduced harmful radio-interferences and simplified organisation of the RC events, spread spectrum 2.4 GHz radio devices are strongly recommended. When all the RC radio devices are spread spectrum 2.4 GHz, they must not be

impounded.

4.4. TIMING AND CLASSIFICATION

4.4.1. The timing of flights is limited to a maximum determined by the individual class and size of motor used. The total flight time is taken from the time at which the model or any part of the model leaves the launching device to the end of the flight.

4.4.2. The total time of the three flights of each competitor is taken for the final classification unless otherwise defined by the rules of a particular class.

4.4.3. In order to decide the winner when there is a tie, additional deciding flights shall be made immediately after the last flight of the event has been completed. There shall be no more than two fly-off rounds to determine the winner. The maximum time of flight in the first fly-off round shall be increased by two (2) minutes on the maximum time of flight of the previous round. The second fly-off round will be timed to the completion of the flight for final results. There shall be only one attempt for each additional flight. The times of the additional flights shall not be included in the final figures of classification for teams, they are for the purpose of determining the winner and for awarding the prizes attached to the title. The organiser will decide the time during which all competitors must launch their models. In the case of a tie in the team classification, the best individual score (classification) will be used.

4.4.4. For World and Continental Championships a round is defined as the amount of time allocated by the organiser for a national team to prepare and launch their models for one official flight per team member (one hour is recommended).

4.4.5. The flight is considered ended when the model touches the surface of the earth, encounters an obstacle which definitely terminates its flight or when it definitely disappears from the timekeeper's sight. If the model disappears behind some obstacles or in clouds, the timekeepers are to wait for ten seconds; should the model not reappear, timing will cease and the ten seconds will be subtracted from the flight time.

4.4.6. a) The flights must be timed by two timekeepers during the first competition rounds and, in the fly-off, each flight must be timed by at least three timekeepers – the additional timekeepers preferably to be picked from among the competitors – with quartz controlled electronic stopwatches with digital readout recording to at least 1/100th of a second.

b) All timekeepers must be equipped with binoculars.

4.4.7. The timekeepers must remain within a circle of 10 metres radius centred on the competitor's launching device during the flights and time the flights independently of each other.

4.4.8. The time recorded is the mean of the times registered by the timekeepers, rounded to the nearest whole number of seconds to the resulting mean time (0.5 second rounded up to the second above) unless the difference between the times registered shows evidence of an error in the timing, in which case the organiser will determine, with the FAI Jury, which time will be registered as the official time or what action should be taken.

4.4.9. Instructions for using binoculars:

a) The binoculars must have a magnification of at least 7. At World and Continental Championships, at least one of the binoculars at the competitor's launch pad must be mounted on a tripod.

b) The timekeeper will adjust the binoculars before timing, so as to suit his eyesight. To do this the focus will first be adjusted with the centre knob, and then by separate adjustment of the adjustable eyepiece. The distance between the eyepieces will be adjusted so as to give a circular field of view.

Note: Binoculars with no central focusing device will be adjusted by altering each eyepiece in turn.

c) ..... After adjustment and scale, readings will be noted. This should simplify readjustment if needed.

d) The timekeepers must not use the binoculars whilst the model is being launched. Use of the binoculars is suggested after about one minute of flight.

e) Use of the binoculars must not be left until too late in the flight, when there is a risk of not finding the model with the binoculars.

4.4.10 Electronic altimeters produced and approved in accordance with the provisions of the Sporting Code Volume EDIC – Electronic Devices in Competition – Section 2 - Technical Guidance Notes and Technical Specification for Altimeters Used in Space Modelling Competition V.1.0, which register the whole space model's flight trajectory and have time scale recording to at least 1/100th of a second, which is equivalent to quartz controlled electronic stopwatches with digital readout required for timing in paragraph 4.4.8 of these rules, can be used for timing in space models contests. Qualified personnel and procedure of calibration, preparation for flight and readout of data is the same as for altitude measurements.

4.5. ALTITUDE DATA

For measuring and calculating altitudes, the methods that may be used are based on the principles of triangulation, or electronic or radar tracking.

4.5.1. Triangulation Method

Triangulation Method is described in Annex 6 of these rules. It is the oldest method for space models altitude measurements, is simple and cheap and is acceptable for lower levels of contests, but because of its slow procedure of tracking and results calculation as well as its limited accuracy, may be used only in Category 2 contests when and where electronic altimeters are not available. It is suitable for contests with smaller number of competitors and shall not be used for record attempts. It is also suitable as an educational tool for juniors.

For the description and parameters of Triangulation Method, refer to Annex 6.

4.5.2. Electronic or Radar Tracking

Altitude data derived from electronic or radar devices is valid only if evidence is presented regarding proper calibration and correction.

4.5.3. Electronic altitude measurements with an electronic altimeter shall use the new Sporting Code Volume EDIC – Electronic Devices in Competition – Section 2 - Technical Guidance Notes and Technical Specification for Altimeters Used in Space Modelling Competition V.1.0 for the documentation regarding specifications and guidance.

4.5.4. Radar Altitude Measurements

Subject to the radar equipment to be used for radar altitude measurements, the organiser of the event shall announce a special request for the type of reflective surface or responders to be used in a particular event.

4.6DISQUALIFICATION

4.6.1 Judges may disqualify any model at any time which, in their opinion, does not comply with the competition rules or which the Range Safety Officer or his authorised deputy feels may not be reasonably safe in operation.

4.6.2 Judges may disqualify any competitor on the grounds of failure to practise or observe reasonable safety measures, published or otherwise, for poor sportsmanship, for failure to abide by the orders of the Range

Safety Officer or his authorised deputy or for misconduct in general.

4.6.3 A model experiencing a catastrophic failure which, in the opinion of the judges, was not due to or caused by improper design, construction, or pre-flight preparations of the model, shall not be disqualified from competition. A model suffering such a catastrophic failure and thereby rendered incapable of additional flights may be replaced by another model. For Scale models S5 and S7, experiencing a catastrophic failure, see rule 9.12.

4.6.4. By reason of flight characteristics, a model may be disqualified for a flight but is not necessarily disqualified for the entire event.

4.6.5 In the S4 classes, the model must reach a stable flight within 30 s from the moment the model or any part of the model leaves the launching device, otherwise the flight is disqualified.

4.6.6 In S3, S6 and S9 classes, the recovery system must deploy correctly within 30 s from the moment the model or any part of the model leaves the launching device, otherwise the flight is disqualified.

4.7. SAFETY STANDARDS FOR SPACE MODEL CONTESTS

4.7.1 Materials

Space models shall use only lightweight, non-metal parts for the nose, body, and fins and shall not use any internal heavy metal part that could cause injuries to persons or damage to property.

4.7.2 Motors

Space models shall only be flown with space model motors that have been certified by a National Airsports Control, and these motors shall not be tampered with or used for any purposes except those recommended by the manufacturer.

4.7.3 Ignition System

Space models shall be launched with an electrical launch system and electrical motor igniters. The launch system shall have a safety interlock in series with the launch switch, and it shall use a launch switch that returns to the "off" position when released.

4.7.4 Launch Safety

Space models shall be launched from a launch device that is within 30 degrees of vertical and is of sufficient length to ensure that the space model flies nearly straight up. They shall be launched only after a 5-second countdown that is audible to all persons nearby and only if all persons are at least 4 metres away. When launching space models with multiple stages, with clusters of multiple motors, or with motors exceeding 20 N-sec, all persons must be at least 8 metres away and the launch device must be at least 10 degrees away from vertical. If the safety or stability of a space model is in question, it shall only be flown after warning spectators and clearing them away to a safe distance and direction as determined by the RSO.

4.7.5 Fire Safety

Space models shall not eject any materials such as recovery device protection that may burn or smoulder and shall use containment tubes for fuse-type dethermalizers, so that the space models do not present a fire

hazard. Launch devices shall have a means to prevent the engine's exhaust from directly hitting the ground, and any dry grass close to the launch pad shall be cleared before launch.

4.7.6 Flight Safety

A space model shall not be launched into clouds or create a hazard to aircraft and shall not be used as a weapon against ground or air targets. Space models shall not eject any materials such as recovery device protection that are not flameproof and shall use containment tubes for fuse-type dethermalizers, so that the space models do not present a fire hazard upon landing. Launch devices shall have a means to prevent the motor's exhaust from directly hitting the ground, and any dry grass close to the launch pad shall be cleared before launch. No attempt shall be made to recover space models from power lines, tall trees, or other dangerous places.

4.7.7 Launch Site

Space models shall be launched outdoors, in an open area free of hazards to the safety of fliers or spectators and whose size is appropriate to the power of the models and to the weather conditions, as determined by the RSO, and with wind speeds no greater than 9 metres per second.

4.7.8 Recovery

Space models shall be so constructed to be capable of more than a single flight and shall contain a means for retarding the descent of all parts of the model to the ground so that the space model’s structure may not be substantially damaged and so that no hazard is created to persons and property on the ground.

4.7.9 Recovery Safety

No attempt shall be made to recover space models from power lines or other dangerous places.

4.7.10 Recovery Device Dimensions

In classes S1, S5 and S7, the minimal recovery device dimensions are: 25x400mm for streamer and 4dm2 for parachute recovery for parts under or equal to 20 grams of mass. Streamer recovery might be used to a maximum weight of 50 grams, where the minimal streamer area is 3dm2 for parts heavier than 20 grams. For parachute recovery, the minimal area is 7dm2 for every 50 grams the part weighs (e.g. 150g part has to have a minimal parachute area of 21dm2). An area tolerance of maximum 10% is allowed. The RSO, Judges and Jury may request to have the recovery device area re-measured if there is a doubt. If the recovery device is not matching the minimal allowed size, the flight is considered DQ.

For selected masses, the minimal parachute (with approximate diameter) and streamer areas are:

Part mass (g)	Minimal streamer area (dm^2)	Minimal parachute area(dm^2)	Minimal diameter for area - round parachute (dm)	Minimal side for area - square parachute (dm)
0 – 20	1	4	2.26	2.00
21 – 50	3	7	2.99	2.65
51 – 100	-	14	4.22	3.74
101 – 150	-	21	5.17	4.58

151 – 200	-	28	5.97	5.29
451 – 500	-	70	9.44	8.37
951 – 1000	-	140	13.35	11.83
1451 – 1500	-	210	16.35	14.49

4.8. SPACE MODELLING JUDGES AND OFFICIALS

4.8.1 This Paragraph describes how Space Modelling Judges and other officials will officiate at the World or Continental Space Modelling Championships. Judges must acquaint themselves with the FAI Sporting Code, CIAM General Rules and Volume S - Space Models.

4.8.2 JUDGES TASKS - Range Safety Officer and Assistant Range Safety Officer

Range Safety Officer is a person, who must be a member of a National Airsports Control and who must be 18 years of age or more. Deputy Range Safety Officers who meet the above qualifications may have this authority delegated to them by appointment from the Range Safety Officer, but this delegation or partial authority does not relieve the Range Safety Officer of overall responsibility and authority on the flying field.

Organiser of an international contest will appoint a person to act as Range Safety Officer (RSO) from the FAI nomination list of judges – specialised in space modelling. He may appoint other qualified persons to act as his deputies in accordance with the rules. In case of World or Continental Championships, the organiser of the contest shall submit the name of the RSO to CIAM or CIAM Bureau for approval. RSO may not be from the organising NAC. When there are junior and senior classifications at the same place and at the same time, the organiser shall appoint two RSOs, one for senior and the other for junior classification. They shall be not of the same nationality but shall have one language in common. Their duties are:

a) All space models presented for operation on the flying field shall be permitted or denied flight by the Range Safety Officer or his duly authorised deputy on the basis of his considered judgement with respect to the possible safety of the model in flight.

b) The RSO and his deputies are the only persons who can disqualify a flight in the FAI First Category events (World Air Games, World and Continental Championships and International sporting events approved by CIAM).

c) Announces the start and stop of each round/event.

d) Responsible for the check-in and out of judges' stop watches, binoculars, electronic altimeters and other tools.

4.8.3. Scale judges

The organiser of an international contest shall appoint three scale judges from the nomination list of Space Models FAI Judges. In case of World or Continental Championships, there will be appointed five FAI judges and one reserve judge of different nationalities, including the Chief Scale Judge. Their names will be submitted to the CIAM or CIAM Bureau for approval. The Chief Scale Judge may not be from the organising NAC. He shall organise work of the judging panel and shall represent it. An extra judge (who may be the reserve judge) shall be appointed as the chief of the dimension measuring team.

In World and Continental Championships a panel of five judges shall award their points independently. The highest and the lowest score shall be neglected and the average of the remaining three scores shall give the final score. In World Cups and/or in Open International-non World Cup events a panel of three judges not necessarily from different countries shall give points.

Duties:

a. Will award scale static and flight points in accordance with scale judging guide. Scale Judges who judge flights for flying characteristics shall continue to judge even if the RSO declares a DQ, in case any protest is upheld by the FAI Jury and the points given for flight characteristics shall then count.

b. Will be responsible for giving copies of the scale judging forms used to record a competitor's points in Scale (S7) and Scale Altitude (S5) to each competitor in these events, before the end of the contest.

4.8.4. Timekeepers and Field officials

Each team shall have the right to provide a timekeeper for the following classes of World and Continental Championships: S3, S4, S6, S8, S9; with the organiser to be responsible for providing lodging and food only. Teams must nominate only skilled timekeepers and the timekeepers must bring binoculars, binocular tripods and watches for their own use. The organiser must use these timekeepers as a priority, before allocating duties to the timekeepers of the host nation or other timekeepers. Timekeepers may be called upon to make decisions on flight adherence to rules and safety in the FAI Second Category events (other international sporting events organised by or under the authorisation of NACs. Competitors may act as timekeepers.

The timekeepers must familiarise themselves with the colour and shape of the model in order to recognise it during the flight.

Duties:

a. Impound, safeguard, and distribute certified contest motors.

b. Impound, safeguard, and distribute FAI approved payloads.

c. Impound, safeguard and distribute electronic altimeters.

d Maintain stocks of flight cards as needed for the competitors.

e. Check models and recovery devices for proper identification.

f. Measure the size of recovery devices, if needed.

g. Know the maximum time limit for each duration type round.

h. Determine flights adherence to rules and safety. (safety rulings will also be made by the RSO or his deputies).

i. Declare disqualifications and note rationale on flight cards.

j. Time and record duration data onto flight cards.

k. Ensure completed flight cards are sent for data reduction.

l. Check-in and out stop watches, binoculars, and clipboards as needed to perform their duties.

4.8.5. Special Judge Duties:

c. The steward or the judge will also monitor radio frequencies to detect interference and communicate this information to the pilot.

d. Altitude competitions with electronic altimeters require that all electronic altimeters be impounded and kept under the control of a steward and be issued to the competitor at the flight time and then returned.

4.8.6. Safety and Rule Compliance Officials:

a. Will give models and recovery devices a pre-flight safety and rule compliance inspection and mark each part.

b. Attest to the appropriateness of submitted FAI payloads.

c. Supervise calibration of electronic altimeters.

4.8.7. ..... Landing Safety Officer (LSO)

Organiser of an international S8 contest will appoint a person to act as Landing Safety Officer (LSO). The LSO can be from the organising NAC. When there are junior and senior classifications at the same place and at the same time, the organiser shall appoint two LSOs, one for senior and the other for junior classification.

4.8.8. Electronic Altimeter Test Officials:

a) Will attest to the certification of team submitted electronic altimeters.

b) Will give electronic altimeters to competitors and after flights readout, register and safely store results during the competition and when competition is finished to present them on an electronic memory to the organiser of the event.

Reason

The current proposal presents a full merge of all competition related paragraphs. The main purpose is to ease the rules and sorted them logically so the whole competition procedure from the start to the end is presented. This as well helps to delete parts where the same situation is described several times and thus can cause confusion and errors as it was in the past.

15. FAI WORLD AND CONTINENTAL CHAMPIONSHIPS 2025 – 2028

VERY IMPORTANT: Each NAC/country/Delegate presenting a bid prior to voting for the award of the Championships may give a presentation of the championship organisation, lasting a MAXIMUM of 2 minutes only. Bidders are requested to distribute important information prior to the meeting, to each of the NACs/delegates by electronic means. This is to enable Delegates to review the contents of the bid, so that they may make informed decisions at the meeting. During the meeting, only questions will be accepted.

Validity Status: The Bids status listed in the below tables is relevant to the date of completion of this Plenary Meeting agenda. At the Plenary Meeting, the Bids will be relevant to the actual status at the time of the meeting.

Date of table status: 12 February 2025

FAI WORLD CHAMPIONSHIPS

2025 FAI World Championships for…	Awarded to	Location and Actual Dates
F1A, F1B, F1C Seniors	ROMANIA	
F1E (Seniors and/or Juniors)	CZECH REPUBLIC	
F3A (Seniors and Juniors)	USA	
F3B (Seniors and Juniors)	GERMANY	
F3CN (Seniors and Juniors)	ROMANIA	
F3D, F3E (Seniors and Juniors)	GERMANY	
F3K (Seniors and/or Juniors)	GERMANY	
F3P (Seniors and Juniors)	SWITZERLAND	
F5J (Seniors and Juniors)	ARGENTINA	
SPACE MODELS (Seniors and Juniors)	SERBIA	

2026 FAI World Championships for…	Awarded to	Location and Actual Dates
F1A, F1B, F1P Juniors	NORTH MACEDONIA	
F1D (Seniors and/or Juniors)	USA	
F2A, F2B, F2C, F2D (Seniors and Juniors)	Australia (firm)	To be Awarded in 2025

F3F (Seniors and Juniors)	Spain (firm)	To be Awarded in 2025
F3J (Seniors and/or Juniors)	SUI (firm)	To be Awarded in 2025
F4CH (Seniors and Juniors)	**UK**	
F5B (Seniors and Juniors)	Offers invited	

2027 FAI World Championships for…	Bids From	To be Awarded in 2025
F1A, F1B, F1C, F1Q Seniors	**MONGOLIA**	**Early Awarded**
F1E (Seniors and/or Juniors)	Romania (firm)	
F3A (Seniors and Juniors)	Offers invited	
F3B (Seniors and Juniors)	Offers invited	
F3CN (Seniors and Juniors)	Germany (firm)	
F3D, F3E (Seniors and Juniors)	Offers invited	
F3K (Seniors and/or Juniors)	Bulgaria (firm)	
F3P (Seniors and Juniors)	Offers invited	
F5J (Seniors and Juniors)	**USA**	**Early Awarded**
SPACE MODELS (Seniors and Juniors)	Poland (firm)	

2028 FAI World Championships for…	Bids From	To be Awarded in 2026
F1A, F1B, F1P Juniors	Bulgaria (firm)	
F1D (Seniors and/or Juniors)	Offers invited	
F2A, F2B, F2C, F2D (Seniors and Juniors)	Offers invited	
F3F (Seniors and Juniors)	Offers invited	
F3J (Seniors and/or Juniors)	Offers invited	
F4CH (Seniors and Juniors)	Offers invited	
F5B (Seniors and Juniors)	Offers invited	

FAI CONTINENTAL CHAMPIONSHIPS

2025 FAI Continental Championships for…	Awarded to	Location and Actual Dates
F1A, F1B, F1P Juniors	**ROMANIA**	
F1D (Seniors and/or Juniors)	**ROMANIA**	

2026 FAI Continental Championships for…	Awarded to	Location and Actual Dates
F1A, F1B, F1C Seniors	Bulgaria (tentative)	
F1E (Seniors and/or Juniors)	**ROMANIA**	
F3A (Seniors and Juniors)	**FRANCE**	
F3A Asian-Oceanic (Seniors and Juniors)	Offers invited	
F3B (Seniors and Juniors)	Offers invited	
F3CN (Seniors and Juniors)	Offers invited	
F3CN Asian-Oceanic (Seniors and Juniors)	Offers invited	
F3K (Seniors and/or Juniors)	Offers invited	
F3P (Seniors and Juniors)	Offers invited	
F5J (Seniors and Juniors)	**FRANCE**	
SPACE MODELS (Seniors and Juniors)	Poland (firm)	To be Awarded in 2025

2027 FAI Continental Championships for…	Bids from	To be Awarded in 2025
F1A, F1B, F1P Juniors	Bulgaria (firm)	
F1D (Seniors and/or Juniors)	Offers invited	
F2A, F2B, F2C, F2D (Seniors and Juniors)	Offers invited	
F3F (Seniors and/or Juniors)	Offers invited	
F3J (Seniors and/or Juniors)	Offers invited	

2028 FAI Continental Championships for…	Bids from	To be Awarded in 2026
F1A, F1B, F1C Seniors	Offers invited	

F1E (Seniors and/or Juniors)	Offers invited	
F3A (Seniors and Juniors)	Offers invited	
F3A Asian-Oceanic (Seniors and Juniors)	Offers invited	
F3B (Seniors and Juniors)	Offers invited	
F3CN (Seniors and Juniors)	Offers invited	
F3CN Asian-Oceanic (Seniors and Juniors)	Offers invited	
F3K (Seniors and/or Juniors)	Offers invited	
F3P (Seniors and Juniors)	Offers invited	
F5J (Seniors and Juniors)	Offers invited	
SPACE MODELS (Seniors and Juniors)	Offers invited	

17. CIAM EVENTS HISTORY Data Base

18. CIAM SURVEY – Analysis / Next steps

19. CAT2 EVENTS – ORGANIZER GUIDELINES

20. NEXT CIAM MEETINGS

Bureau meeting on December 2025 dates to be confirmed

Bureau meeting on April 2026 date to be confirmed

Plenary meeting on April 2026 dates to be confirmed.

The plenary will discuss hosting such a meeting at a different place. The NACs that are interested in bidding, have to fill the form in Annex 9 and submit it to CIAM before the Plenary meeting.

The table of Agenda Annexes appears overleaf.

ANNEXES TO THE AGENDA OF THE 2025 CIAM PLENARY MEETING

ANNEX FILE NAME	ANNEX CONTENT
ANNEX 1 (a-b)	FAI Code of Ethics, Nomination Form for Office Holders
ANNEX 2 (a-n)	2024 FAI Championship Reports
ANNEX 3 (a-p)	2024 Subcommittee Chairmen Reports, Technical Secretary, Treasurer Reports, EDIC WG, Scholarship
ANNEX 4 (a-n)	2024 World Cup Reports
ANNEX 5 (a-d)	2024 Trophy Reports
ANNEX 6 (a-h)	FAI-CIAM Awards: Nominee Forms
ANNEX 7	Proposals Supporting Data
ANNEX 8 (a-d)	Scholarship Candidates
ANNEX 9	Plenary Bid Form

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