

EFRA of **RADIO OPERATED**
MODEL Automobiles

Members Handbook 2019

www.efra.ws



EFRA Race Calendar 2019

V1412		European Championship EC	EFRA Grand Prix Final Worlds	Open Entry Euros WC or EC Warmup Race	Electric Track	Electric Buggy
Week	Date	Largescale Track	Largescale Buggy	Ignition Track Ignition Series 1:8 & 1:10 IC TR, Vigo, Spain	Ignition Buggy	Electric Track
11	Mar					
13	Mar					
15	Apr					
17	Apr	27-28 LS TC GP Lesaillo, Switzerland				
18	May					
21	May	25-26 LS TC GP Leipzig, Germany				
22	Jun					
23	Jun					
24	Jun					
25	Jun	22-23 LS TC GP Groningen, Netherlands				
26	Jun					
27	Jul					
28	Jul					
29	Jul					
30	Jul					
33	Aug					
35	Sep	30-01 LS TC GP Zagreb, Croatia				
36	Sep					
37	Sep					
38	Sep					
40	Oct	28-06 LS TC WC Villa Real, Portugal				
44	Nov					

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† Hon. Life Vice President	Andre Van Der Linden		
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E.F.R.A. Associated Members

Associated Member

A-Main Hobbies

MSE MUGEN SEIKI Europe Vertriebs GmbH

MODELCARGO Racing

Associated Electronics Inc

Intellect Battery Co. Ltd.

LRP electronic GmbH

Modern Creations International Company Limited

MYLAPS Sports Timing

O.S. Engines Mfg. Co., Ltd

Xray s.r.o.

PROLINE

Neidhart SA

Tianco

JSP Group Intl BVBA (ex. Corally)

Process Measurement & Analysis Ltd. (Optipower)

Freemax Metal Products Co., Ltd

Graupner GmbH & Co KG

Muchmore Racing Co. Ltd.

Xtreme di Boni Cristian

Marrone Racing Tyres Hotrace

Schumacher Racing Products

Xiamen 3-Circles Battery Co., Ltd

UFRA-dp SA

Vampire Racing RUDDOG Distribution UG

Shepherd Micro Racing GmbH & Co. KG

WWW

www.amainhobbies.com

www.mugen.eu

www.modelcargo.com

www.teamassociated.com

www.intellect-battery.com

www.lrp-electronic.de

www.silverbackrc.com

www.mylaps.com

www.os-engines.co.jp

www.hudy.net

www.prolinerracing.com

www.teamorion-avionics.com

www.orcarc.com

www.corally.com

www.optipower.uk.com

www.arrowmax-rc.com

www.gm-racing.de

www.www.much-more.co.uk

www.matrixtires.it

www.hotracetyres.com

www.racing-cars.com

www.3-circles.com

www.ufra-tyres.ch

www.vampire-racing.com

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2. CONSTITUTION OF THE EUROPEAN FEDERATION OF RADIO OPERATED MODEL AUTOMOBILES EFRA

1. Name

The name of the Federation is the European Federation of Radio Operated Model Automobiles (hereinafter referred to by the acronym EFRA).

2. Objectives

The objectives of the Federation are:

- a) The promotion of international Friendship and Co-operation, particularly (but not exclusively) on the continent of Europe, through and for the construction, competition and sport of radio-operated model automobiles.
- b) The establishment of uniform International rules and regulations for such construction and operation.
- c) The co-ordination of races and competitions, national and international and the keeping of records thereof and the distribution of information relating thereto.
- d) The representation of its member countries in the world federation IFMAR (International Federation of Model Auto Racing) which coordinates model car racing in the world and organises World Championship races. EFRA is recognised by IFMAR as its representative for Europe and it's affiliate members. EFRA in turn recognises and supports the authority of IFMAR in all matters relating to the worldwide organisation of model car racing.

3. Membership

- a. Membership of EFRA shall be open to the National governing body of Radio Controlled Car Racing in each country in Europe and those countries considered by the Executive Board to be acceptable in terms of proximity to Europe.

Any application for membership must contain such information as the executive board of the Federation may from time to time require and must be accompanied by the then current annual membership fee. All membership applications shall be submitted for acceptance before the next General Meeting of EFRA. All membership applications shall be deemed as provisional until formally accepted by the General Meeting. Such acceptance shall require a simple majority of votes.

Pending such acceptance however a provisional member shall be entitled to be represented at all EFRA sponsored events.

Any question that may arise regarding if the Applicant is in fact the governing body of the country it wishes to represent, or whether such country is in fact a country for the purpose of these rules, (as distinct from a province, country etc,) shall be decided at the General meeting of EFRA by a simple majority. A General Meeting may, by a two thirds majority of the membership, cancel the membership of any member.

At least one month notice of any proposal to review a membership shall be given to all members and the executive shall, if so requested, transmit to all members any defence or explanation which the member in question wishes to put forward.

- b. Manufacturer Associate Membership.

1. Associated Membership to EFRA is available to bona fide manufacturers of RC model goods against an annual Associated

Membership fee as decided by the EFRA AGM and published on the EFRA website.

Associated membership is valid from January 1st. for the calendar year. An Associated Membership carries no voting rights at:- AGM, General Meeting, Section Conferences or any Team Managers or International Jury meetings.

2. Benefits and rights of Associated Members:
 - Attend and participate to manufacturer meetings organised by EFRA
 - Attend General meetings as observer.
 - Address the General Meeting subject to authorisation or invitation (a request stating the topic to be sent to the General Secretary in writing in due time to be included in the agenda).
 - Submit proposals regarding the sport of RC racing for the General Meeting or Conference agendas.
 - Participate at Section meetings.
 - Participate in workgroups or specific taskforces when invited to do so by EFRA. Subject to authorisation by EFRA: expose products, where it is possible, without trading rights at meetings. A nominal fee may be applicable and EFRA does not provide exposition accessories, stands or furniture.
 - Receive early notification about proposed constructional rule changes.
 - One page advertising in the concerned section of the electronic (pdf) version of the EFRA handbook. (Advertising of acceptable quality, pdf format A4 to be provided by the member)
 - Be advertised as Associated Member on the EFRA website (appropriate company logo to be provided)
 - Being listed in the EFRA handbook as an Associated Member (subject to the application being received in due time).
 - Considerable discounts on approval fees.
 - Associated Members have specific advertising rights as detailed in [3] below.
 3. Associated Members of EFRA are allowed to use a specific EFRA logo and state that they are an Associated Member of EFRA in any advertising or on any products. EFRA will supply a specific logo to be used for this purpose when a company becomes an Associated Member. In the event of a company ceasing or resigning from being an Associated Member, then all references to EFRA and the use of any EFRA logo in advertising or on products must also cease.
 4. Where EFRA has a homologation/approval process for any specific products, then an Associated Member is allowed to state that a specific product is approved by EFRA, using the wording: "EFRA Approved". EFRA will supply a specific logo for this purpose. Other wording such as: "EFRA Legal, accepted, preferred, recommended, etc." is specifically NOT allowed. This only applies to products that have been officially approved by EFRA and are included on an EFRA homologation/approved list. Any product not included on an official EFRA approved list must not bear any wording relating to EFRA approval, although it can portray that the manufacturer is an Associated Member of EFRA.
- Associated Members that contravene this ruling can be banned for up to two (2) years from holding EFRA Associated Membership, or applying to

obtain approval of any further products. It is also possible that any existing approved products could be removed from any approved lists. No refund or indemnities whatsoever will be granted.

If any existing EFRA approved product is altered in any way resulting that the product no longer complies with EFRA rules, then the same penalties apply.

AM's should gain permission from EFRA before using "EFRA Approved" on any product.

5. Manufacturers not having Associate Membership.
 - a Manufacturers or Companies that are not Associated Members of EFRA are specifically NOT allowed to include any EFRA logo/trademarks in any advertising or on any products. This includes the use of any EFRA Logo or any wording that could be construed to relate to any membership recognition by EFRA. This does not preclude any non- Associate Member from having products approved by EFRA and included on the relevant homologation/approved list.
 - b Manufacturers or Companies that are not EFRA members, but have specific products approved by EFRA, are allowed to portray in advertising or on the specific product, the wording "EFRA Approved" for that specific product. This only applies to products that have been officially approved by EFRA and are included on an EFRA homologation/approved list. Any product not included on an official EFRA approved list must not bear any wording relating to EFRA approval, either in general advertising or on the product. Wording such as: "EFRA legal, preferred, recommended" etc., is specifically not allowed.
 - c Any unauthorised reference to EFRA by non-Associate Members is subject to a ban from any approvals or becoming an Associated Member for up to three (3) years. No claims what so ever can be made against EFRA in such case and EFRA retains sole rights to accept or refuse applications for membership or approval of products at any time.

If any existing EFRA approved product is altered in any way resulting that the product no longer complies with EFRA rules, then the same penalties apply.

Manufacturers/companies that are not Associated Members of EFRA should gain permission from EFRA before using "EFRA Approved" on any product.

4. Organs of the federation

4.1.a General Meeting

The Federation shall hold an Annual General Meeting in the month of November. A Special General Meeting shall be called if either the Executive Board of EFRA so resolves, or a request in writing signed by the Representatives of at least 1/3 of the member countries, is received. Notice of every General Meeting shall be given at least one month beforehand with general particulars of the business to be conducted, and details of any proposed alterations to this constitution or to the racing or construction rules and regulations. The Business at an Annual General Meeting shall be: a) The election of Officers whose terms of office have expired, proposals for official posts must be lodged with the General Secretary at least 45 days before the General Meeting. The main Officers will form a Committee Board as follows:

Committee Board

1. The President
2. Vice President
3. General Secretary
4. Section Chairmen
5. Treasurer

Candidates for any Board position, can only be proposed by recognised officials of an EFRA Member Federation or by the existing Board of EFRA. EFRA reserves the right to refuse any such proposal from an EFRA Member Federation. The position of Vice President has to be from within the existing EFRA Board following any elections at the AGM and will be decided annually by the existing Board members. All candidates for office properly proposed under the provisions of this constitution shall be introduced to the General Meeting prior to the Section conferences. The meeting shall be given the opportunity to question candidates for election.

Each section shall also elect a Vice Chairman who shall deputise in the event of the Chairman's absence. One officer will be elected every two years to act as liaison between EFRA and IFMAR to maintain continuity of policy. The post of IFMAR liaison officer may be combined or separate from other post.

To carry out the task for Public Relationships one officer will be elected for two years.

- b) Election of President will take place at the Annual General Meeting each year. General Secretary, Treasurer and Section Chairmen shall hold office for 2 years and be elected at the Annual General Meeting.
- c) To decide the date and venue of future European Championships. The Meeting may (but is not bound to) fix such dates and venues for up to three years ahead, from applications made in writing to the Executive not less than 45 days before such meeting.
General particulars of any such applications shall be included in the notice covering the meeting and the selection of the venue will be decided in the Section Meeting and approved by the AGM.
The voting system to select the venue is as follows: Each member country has one voting form with 3 choices. All 3 must be used.
1st choice will receive 4 points.
2nd choice will receive 2 points.
3rd choice will receive 1 point.
The two sites receiving the highest total number of points will go forward to a second ballot where a simple majority will decide the chosen site.
In the event of a tie, the relevant official may use his casting vote.
All balloting will be secret, but results will be published.
- d) To decide the dates and venues of other EFRA-approved events during the following year, including the next Annual General Meeting if not decided previously.
- e) To consider any matter or proposal which the Committee Board or the relevant official wishes to bring before the Meeting, particulars of which shall be included in the notice of the Meeting
- f) To consider any matter or proposal of which a member has given notice in writing up to the 31st of August. Particulars of such shall be included with the notice of the General Meeting as required by Section 4 above.
The Committee Board will examine all proposals received for discussion at the Annual General Meeting and where necessary prepare them for

presentation by eliminating duplication and contradiction. Where proposals concerning Section matters that have a broader effect on General Rules or Constitution matters are received, the Committee Board will endeavour to resolve conflicts and present appropriate proposals to the General Meeting. The catalogue of proposals recognised to be presented at the upcoming AGM should be sent to all EFRA members representatives/secretaries at least 4 weeks before the meeting.

Proposals from EFRA Members for IFMAR Constitutional and Racing Rule changes must first be submitted to the EFRA Annual General Meeting and shall be subject to the same rules and procedures as those in force for EFRA matters.

This procedure does not remove the absolute right of any Member to make proposals directly to the General Meeting, these direct proposals will be recorded on the minutes and will be voted in the next General Meeting.

- g) To deal with any matter which, under these Constitution Rules failed to be dealt with by a previous General Meeting.

4.1.b. Voting

- a) Following any proposal at a General Meeting each member country shall have one vote which shall be exercisable by a person duly authorised in writing by his governing body in such country.
- b) Each country shall also be entitled to one vote at any section meeting for which the country has paid the section membership fee, exercisable by a person duly authorised as provided for above.
- c) No proxy votes shall be allowed.
- d) Section meetings shall form part of the AGM. Voting procedures for the Section meetings shall be as for the AGM. Decisions of the Section meetings relating to the Technical Rules or Financial affairs of general concern to EFRA shall be ratified by the AGM.
- e) Any amendment to the Constitution of the Federation shall require a two-thirds majority of the Annual General Meeting.

Other proposals unless otherwise specified herein, shall require a simple majority only. The President or the relevant official shall, in the event of a tie, have a casting vote.

A resolution in writing, signed by the authorised representatives of all members, shall have the same effect as if it had been duly passed at a general meeting.

- f) In the case that more than 1/3 of the Member federations of the effected section or the Executive Committee feel it is necessary, a postal vote can be allowed.

If there is a need to request a postal vote from all Member Federations, then a time limit of 30 (thirty) days shall be set for the return of the required voting form.

The decision made by postal vote shall be effective 30 (thirty) days after it has been published to all Member Federations, subject to the respect of the standard time frame.

Postal votes should only be used in the case of unforeseen circumstances and should not apply to any decision taken at the last AGM.

- g) Before a voting process will be started, the total number of votes being present will be recorded. The voting result will be published to the auditorium and recorded in the minutes. Number of votes in favour and number of votes against and abstentions.

- h) Correspondence: The official address of the Federation shall be the address of the General Secretary. Every member country shall furnish to the Executive Board an address for correspondence and any communications directed to that address shall be deemed to have been duly delivered by course of post.
- i) The official language of the Federation is the English language.

4.2. Committee Board

The President or in his absence the senior Committee Board member present, shall take the chair at the General Meetings and in the event of a tie, be entitled (but not bound) to exercise the casting vote.

The Treasurer shall be entitled to demand and receive all money due to the Federation and shall keep proper accounts thereof.

All offices under the Federation shall be honorary but the officers shall be entitled to reimbursement of expenses properly incurred, but subject always to consideration and approval of AGM.

The committee board are empowered to employ paid assistants for secretarial and other duties within budget limits, which are defined and approved at the AGM and subject to the provisions of section 7 of this constitution. These paid assistants shall not hold EFRA committee-positions.

PRESIDENT:

- 1 Maintain contacts with IFMAR and other International Organisations Officials.
- 2 Co-ordinates the efforts of the different E.F.R.A. Section Chairmen and provides advice when problems occur.
- 3 Takes the chair at the E.F.R.A. AGM and at E.F.R.A. Committee meetings.
- 4 Proposes appointment of Honorary Officers to the E.F.R.A. AGM.
- 5 Visits important races.
- 6 Forms an Executive Working Committee with General Secretary and Treasurer to deal with all matters that affect the day to day running of E.F.R.A. general business.
- 7 Liaises/meets with Officials from Members.

GENERAL SECRETARY:

- 1 Takes the minutes at E.F.R.A. Committee meetings and the E.F.R.A. Annual General Meeting.
- 2 Publishes a record of the minutes of these meetings.
- 3 Updates lists of Member Countries and other interested parties such as Manufacturers, Magazines and Contact addresses.
- 4 Deals with the main correspondence from/to all Member Countries and maintains file copies of all relevant correspondence.
- 5 Co-ordinates the arrangements for the E.F.R.A. Meetings, i.e. Annual General Meeting. Liaises with the hotel, Member Countries and provides full details of the timetable of the AGM.
- 6 In conjunction with the President and Section Chairmen draws up the Agenda for the AGM and other EFRA meetings.
- 7 Co-ordinates the racing calendars of the E.F.R.A. Sections and arranges for the publishing of these calendars.
- 8 Keeps a record of the results of all E.F.R.A. sanctioned races.
- 9 Maintain copies of all Member Country Officials address changes for updating the E.F.R.A. database.
- 10 Visits important races.
- 11 Forms an Executive Working Committee with President and Treasurer to

deal with all matters that affect the day to day running of E.F.R.A. general business.

- 12 Liaises/meets with Officials from Members.
- 13 Arrange for the completion and return of E.F.R.A. contracts applicable to EC events being organised the following year.

TREASURER:

- 1 Maintains a complete set of records of the Financial aspects of E.F.R.A. business.
- 2 Produces a full set of accounts as at the end of the financial year for presentation and acceptance by the Member Countries at the E.F.R.A. Annual General Meeting. Expenses can be split down into amounts of approx. 3000 €
- 3 Keeps abreast of all facets of bookkeeping and the financial situation of E.F.R.A.
- 4 Before the 15th January following the AGM send invoices to all E.F.R.A. Member Countries regarding annual subscriptions, sanction fees for E.F.R.A. GP and EC events, entry fees for EC events.
- 5 During the year send invoices to Member Countries or persons when requested to do so.
- 6 Maintains a watching brief of outstanding invoices and one month after the date of maturity of the invoices he sends reminders to those Member Countries who have not paid their invoices.
- 7 Every three months produces a report for all Committee Members giving details about the financial situation and status of all debtors.
- 8 Pays the expenses declarations of the Committee members within a week of receipt.
- 9 Refunds all the deposits as soon as the Section Chairman sends his approval.
- 10 Visits important races.
- 11 Forms an Executive Working Committee with President and General Secretary to deal with all matters that affect the day to day running of E.F.R.A. general business.
- 12 The Treasurer has to present the accounts and all assigned documents to the auditors prior to the AGM.

SECTION CHAIRMEN:

- 1 Effectively manages the Section for which he is elected at the AGM.
- 2 Provides information to other E.F.R.A. Officials as and when requested.
- 3 Attends the GP organised ahead of an EC and reports upon the track, the accommodation and the organising committee.
- 4 Attends the EC relevant to his section.
- 5 As soon as the race calendar of the next year has been published he oversees the distribution of the information of the Section events in appropriate language.
- 6 Issues race meeting sanctions after fully examining the information sent by the applicants following the decision made at the Section Meeting and the approval/acceptance by the AGM.
- 7 Updates the list of "A" registered drivers when needed and decides upon the validity of an EFRA Registration.
- 8 Co-ordinates the entries for EC and WC and settles re-allocations in co.operation with the Member Countries and the organisers.
- 9 Decides if the deposits paid for GP and EC events may be refunded and

- requests the Treasurer to refund any monies due.
- 10 Collects the results of all the E.F.R.A. sanctioned races.
- 11 Makes a report of the past racing season to be presented at the AGM.
- 12 Is a full member of the E.F.R.A. Committee with a seat in all E.F.R.A. Committee meetings.
- 13 Takes the Chair at the Section Meetings during the AGM.
- 14 Arranges for the minutes of the Section Meeting to be recorded and provides a copy of these minutes to the General Secretary.
- 15 Presents decisions made at the Section Meetings to the main AGM.
- 16 The Section chairman (or the EFRA appointed deputy) has the authority to provide clarification on the interpretation of rules.

4.3 Executive Committee

The President, Treasurer and General Secretary will form an Executive Working Committee to deal with all matters that affect the day to day running of E.F.R.A. general business. In regards of section business, they must be informed of the day to day running of the different sections.

4.4 Other officers

PR OFFICER:

- 1 Maintain contact with the EFRA Executive.
- 2 Carry out the promotional and communication work as decided by the AGM and EFRA Executive Committee.
- 3 Attends EFRA AGM and Committee meetings when needed.
- 4 Co-ordinates the production and distribution of the regular news.

IFMAR LIAISON OFFICER:

- 1 Maintains direct contact with IFMAR bloc officials.
- 2 Acts as a central co-ordinator for all matters between E.F.R.A. and IFMAR.
- 3 Provides information to/from IFMAR/FEMCA/ROAR/FAMAR to all Sections within E.F.R.A.
- 4 Puts forward proposals drawn up and approved by the E.F.R.A. Committee or by the AGM to IFMAR.
- 5 Attends EFRA Committee meetings when needed and AGM.
- 6 He attends IFMAR Meetings as the full representative of E.F.R.A.

HOMOLOGATION OFFICERS:

EFRA has a homologation or registration process for various products that are used in EFRA races.

For the various task officers are appointed. Products for homologation or registration are bodies, mufflers, batteries, INS boxes. Other products may be added in the future.

The aim for homologation or registration is to protect the products of manufacturers, to avoid products that are unsafe or do not follow international agreements (f.i. GBS for bodies) or environmental laws.

The task of the homologation officer is the following

- 1 Receives and acknowledges the products from Manufacturers wishing to have their products homologated or registered by E.F.R.A.
- 2 Passes invoice order to the E.F.R.A. Treasurer.
- 3 Checks the products against pictures, drawings or measurements or agreements provided by the Manufacturer. A 10% tolerance is acceptable in some occasions.
- 4 If the product is acceptable under E.F.R.A. standards, he sends a certificate to the Manufacturer. The certificate will bear the homologation or registration number which the Manufacturer must use to mark the product. Should

- there be any discrepancies, he will advise the Manufacturer in writing as to the exact reasons why the product was refused.
- 5 Copies of the homologation certificate and detailed drawings are passed to the General Secretary and IFMAR Liaison Officer.
 - 6 Retains the original products for specification purposes during the life of the certificate and 2 years more.
 - 7 Advises the E.F.R.A. Treasurer of homologation or registration expenses incurred.
 - 8 At no time and under any circumstance will the product received for homologation or registration, including drawings and specifications be shown to or handed over to anybody involved with the manufacturing of model cars or parts for model cars.

AUDITORS:

- 1) The position of auditors is to be appointed by EFRA member countries and voted at each AGM for a period of duty of one year.
- 2) This position will be covered by two delegates, not belonging to the same national federation, nor being member of the same federation as the treasurer.
- 3) They have the right to inspect all actions or bookkeeping, which are in conjunction with EFRA's finances.
- 4) They must present their written report to the AGM. The EFRA Board must have knowledge about their comments prior to the AGM, so that board members may prepare their reactions.

4.5 Honorary officers

- a) EFRA may if it so wishes elects an Honorary Life President and Honorary Life Vice President to the Federation on proposal from the Committee Board. Such persons shall be granted these Honorary titles in recognition of exceptional service to EFRA or Model Car Racing in general. There shall be only 1 Honorary Life President but there may be as many Life Vice Presidents as the Federation wishes. Election shall be by vote at the Federation AGM following proposal in accordance with the provisions of this Constitution.
- b) Such Honorary Officers are elected to view the activities of EFRA in the light of their experience and provide help, advice and guidance should it be needed. They shall have the power to ask the Executive Committee Board to call an Extraordinary General Meeting should circumstances arise that threaten the well-being of EFRA.
- c) The Honorary President and Vice Presidents can address the EFRA Committee Board and AGM but may not have a vote.
- d) In the event of the resignation or other circumstances that prevents a properly elected EFRA Official from carrying out his or her duties, the Honorary Life President or a Vice President may be asked by such EFRA Officers as remain to deputise until such a time as the elected Officer is available or an Officer is elected. Such a request shall be by simple majority vote of the remaining EFRA Officers.
- e) In the event of Honorary Life Officers being called upon to assist the Committee Board they will be entitled to reimbursement of any necessary expenses incurred. A Honorarium will not be paid.

5. Subscription

The Annual subscription of the Federation shall be fixed by resolution of a General Meeting. Such subscription shall become due on the first of January of each year. If not paid within three months thereafter, representatives of a

country in default may not, until payment take part in any activity of the Federation or be sponsored by; if not paid within twelve months, membership of the country in default shall cease.

To recover its active membership the member must pay the duly invoices pending.

The accounts will be closed on the 30th of September each year.

6. Technical Rule Changes

The date for introducing any construction/technical rule changes affecting General Rules will be decided at the Main AGM.

The date for introducing any constructional/technical rule changes within a Section, will be decided at the Section meetings.

Any important rule changes by any Section that effect more than one Section, including the date for introduction, will not become valid until approval of the Main AGM.

If the date for introduction of any construction/technical rule change is not specified at either a Section meeting or Main AGM, then the change will become effective twelve (12) months after the rule change has been approved.

When deciding dates for introducing rule changes, due consideration should be given to: - Making existing equipment obsolete and any manufacturing processes required allowing the change. In all cases, changes for safety issues should be given priority.

3. EFRA SANCTIONS

3.1. EFRA Sanctions

3.1.1. The object of EFRA Sanctions is to obtain uniform racing and organisational standards for major European events in all classes of radio-controlled model car racing.

Major European events are:

-European Championships

-EFRA Grand Prix

-International races with EFRA sanction

National Organisations are advised to adopt these standards and rules for use at Premier level national championships

3.1.2. To ensure the quality of these major events the minimum standards set by EFRA described here, must be met. The EFRA Section Chairman will authorise the events after the applicant has proved able to meet the minimum standards of EFRA.

3.1.3. To receive an EFRA sanction, an application must be done to the section chairman through the national federation.

3.1.4. The National Association of the host country will hold prime responsibility for the organisation and well running of the event. They have a duty to monitor the organisation of the event from the moment the EFRA Sanction is obtained until the official results of the race are sent to EFRA.

3.1.5. If the minimum standard is not met during the event, despite having an EFRA Sanction, then EFRA must consider to not returning the deposit(s) in fully or in part.

3.1.6. The Executive Committee is given the power (authority) to apply suitable sanctions in case of refusal of a race-organiser to co-operate with EFRA following consultancy with the relevant EFRA officials involved.

3.1.7. The European Championships will preferably held during the summer months between the last full week in June until the middle of September. Changes to this pattern may only be made at the AGM or EFRA committee meeting.

3.2 European Championships

NOTE:- Rules 3.2.3 & 3.2.4 do not apply to Open Entry EC's

3.2.1. Each section may run a maximum of 4 European Championship events per year and in the event of there being more than 2 classes, it is the sections responsibility to decide which class shall be raced as secondary to the main class in any year. The section shall decide at the section meeting.

3.2.2. The venue of the European Championships is to be decided by the EFRA AGM, 2 years ahead. The applicant National Association must submit all details (as per a to q below) to the valid Section Chairman and the EFRA Secretary by 31st August latest. The Section Chairman and the EFRA Board will evaluate the proposed venue, facilities, personnel and dates. A list of acceptable applications will be presented to the section.

Accepted applications must be presented at the EFRA AGM Section meeting by the National Association in electronic format, preferably PDF, and a paper version must be given to each EFRA member country.

The Section Meeting will decide the venue after the presentations.

Each application must contain:

a. The organiser's name, address, fax and telephone number and email address.

b. A single contact point for all correspondence/enquiries

- c. Diagram of track indicating length, width and direction of racing
- d. Drawing of the venue (preferably photograph) showing track, rostrum, pit area, timekeeping and general facilities
- e. Details/location of the venue
- f. Map of the area showing proximity of airports, port, roads, etc.
- g. Basic details of race timetable and dates
- h. List of race officials
- i. List of approved frequencies and list of specific frequencies that cannot be used.
- j. Practice facility (dates available, closed dates prior to the event)
- k. Details of accommodation (at least three (3) local hotels/motels of different grade which must include daily rate including all taxes, if applicable and alternative accommodation e.g. camping. In case of camping at track site, the organiser has to deal directly with the campers. Team managers cannot be asked to take any responsibility for booking, payments, etc.
- l. Any special accommodation deals, including all taxes, if applicable.
- m. Information on transport available between hotel/s and track.
- n. Voltage used in host country. Drawings of plug types.
- o. Advice on whether each competitor is required to bring or mail one passport sized photograph of him/ herself and any mechanics or Team Manager for attachment to identity badges
- p. Marshalling details if needed (availability of marshals for practice/qualifying/finals).
- q. Web address of the organizing club

The Section Chairman will investigate the applications and must advise or propose acceptance to the AGM. The Chairman is entitled to reject applications when information is inadequate or unsatisfactory.

- 3.2.3. The host Club proposed by the National Association must have successfully organised one Major EFRA European event with EFRA Sanction, in the last 4 years before the application, preferentially on the proposed track.

The year before a European Championship an EFRA Grand Prix will take place. The EFRA Referee present at this GP in the previous year before the EC will check that all EFRA Standards are met, if due to any reason he finds that required EFRA Standards are not reached he will inform directly on that subject to the EFRA Section Chairman & the EFRA General Secretary. At that year an observer of the organizer of the next European Championship must be present at least 3 days at the previous European Championship of the same kind.

Any of those 2 last requirements can be waived by a Section Chairman decision. An EFRA Major European event must be held on the same track two (2), maximum four (4) months before the EC.

The AGM Section meeting may waive any of these requirements.

- 3.2.4. The National Association of an EFRA country hosting a European Championship or World Championship is subject to a special fee to EFRA, to cover the extra expenses of the EFRA involvement in that race. This fee is established by the AGM (3.5)

- 3.2.5. For a European Championship, a contract will be signed by EFRA, the National Federation and the Organiser. It must be received by EFRA by 31st January. If after the 31st January any of the classes of an European Championship event is having an allocation under a 25 % of the maximum number of entries with a minimum of at least 5 countries, then EFRA, after consulting with the organizer may consider the cancellation or the change of status of event.

- 3.2.6. At the AGM section meeting preceding the event the host country of European Championships will be asked to demonstrate to the meeting that they have the organisation and facilities needed to stage the event. They should also confirm that the club involved will be able to honour any promises or obligations made by their successful application the previous year.
- 3.2.7. The section meeting may decide to re-allocate the event to a "safe" venue of it's choice if rule 3.2.6. is transgressed
- 3.2.8. As soon as practical after the decision confirming the organiser of an European Championship, the host club should be sent a copy of the EFRA handbook.
- 3.2.9. At the latest, 100 days before the European Championships in question, there should be a meeting between the National Federation contact and the host club to confirm that everything is running according to the Handbook. Minutes of this meeting required to be forwarded to relevant section chairman and general secretary within 10 days (English language).
- 3.2.10. A member Association cannot organise a National Championship race on the same days of a European Championship in the same class/section.
- 3.2.11 OPEN ENTRY EUROPEAN CHAMPIONSHIPS Open entry EC's are determined by the section conferences annually.
- 3.2.11.1 For each entry the organiser will pay EFRA €5 - the total amount will be settled with the deposit.

3.3 EFRA GRAND PRIX

- 3.3.1. EFRA Grand Prix have the status of "Open EFRA International Championships" of the organising country.
- 3.3.2. Each EFRA member-country may organize 1 (one) official EFRA Grand Prix per year per class. Each section may run a maximum of 3 (three) EFRA Grand Prix per year.
For large scale section only: Limit strictly to 4 EFRA GP per year, (4 EFRA GP instead of 3 will allow a right to make mistakes, or an absence on 1 EFRA GP).
An EFRA Grand Prix must have an EFRA Sanction. To obtain such, an application must be sent to the EFRA General Secretary to be received at 31st of August the latest.
At the AGM must each presumptive organizer make a presentation containing relevant information such as pictures of the accommodation, hotel information, camping and charges to be paid, details of facilities such as water, electric power, W.C. and showers.
For each entry the organizer will pay EFRA € 5,- . The total amount will be settled with the deposit.
- 3.3.3. Following proposals from the sections will the EFRA Race calendar be finalized and presented at the AGM during the Sunday morning session. As soon as practical after the decision confirming the organizer of an EFRA GP, the host club should be sent a copy of the EFRA handbook. Any EFRA Grand Prix Organizer who changes a date following an AGM decision will lose the EFRA Sanction for official EFRA Grand Prix status. Only an enforced change beyond the control and influence of the organizing club is liable to be accepted for discussion by the EFRA Committee.
- 3.3.4. The dates of the 3 EFRA GP of each year must be respected by the different national calendars, National Championships in the same class will only be allowed to organize on the same date as an EFRA GP if approved by the valid Section Chairman.
- 3.3.5. Organisers of EFRA Grand Prix are subject to a special fee payable to EFRA. This fee is established by the AGM (see 3.5).

3.3.6. If EFRA Grand Prix results shall be used as the basis for awarding points to the competitors, a general classification shall be published at the end of the racing season. The sum of the 4 best results of the season to be the final score of each driver. Points shall be given as follows:

EFRA GP1 (Less than 30 drivers)

50	46	42	38	34	32	30	28	26	24
22	21	20	19	18	17	16	15	14	13
12	11	10	9	8	7	6	5	4	3

EFRA GP2 (30 to 60 drivers)

75	71	67	63	61	59	57	55	53	51
49	48	47	46	45	44	43	42	41	40
39	38	37	36	35	34	33	32	31	30
29	28	27	26	25	24	23	22	21	20
19	18	17	16	15	14	13	12	11	10
9	8	7	6	5	4	3	2	1	1

EFRA GP3 (60 drivers plus)

100	96	92	88	84	82	80	78	76	74		
73	72	71	70	69	68	67	66	65	64		
63	62	61	60	59	58	57	56	55	54		
53	52	51	50	49	48	47	46	45	44		
43	42	41	40	39	38	37	36	35	34		
33	32	31	30	29	28	27	26	25	24		
23	22	21	20	19	18	17	16	15	14		
13	12	11	10	9	8	7	6	5	4		
3	2	1	(1 for places greater than 83)								

EUROPEAN CHAMPIONSHIP

300	280	260	240	220	210	200	190	180	170
165	160	155	150	145	140	135	130	125	120
115	110	105	100	99	98	97	96	95	94
93	92	91	90	89	88	87	86	85	84
83	82	81	80	79	78	77	76	75	74
73	72	71	70	69	68	67	66	65	64
63	62	61	60	59	58	57	56	55	54
53	52	51	50	49	48	47	46	45	44
43	42	41	40	39	38	37	36	35	34
33	32	31	30	29	28	27	26	25	24
23	22	21	20	19	18	17	16	15	14
13	12	11	10	9	8	7	6	5	4
3	3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2	2

1 for places greater than 140

WORLD CHAMPIONSHIP

500	450	400	350	320	290	260	230	200	170
160	155	150	145	140	135	130	125	120	115
110	105	100	95	90	89	88	87	86	85
84	83	82	81	80	79	78	77	76	75
74	73	72	71	70	69	68	67	66	65
64	63	62	61	60	59	58	57	56	55
54	53	52	51	50	49	48	47	46	45
44	43	42	41	40	39	38	37	36	35
34	33	32	31	30	29	28	27	26	25

24	23	22	21	20	19	18	17	16	15
14	13	12	11	10	9	8	7	6	5
4	4	4	4	4	4	4	4	4	4
3	3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2	2

1 for places greater than 140

3.4. INTERNATIONAL RACES WITH EFRA SANCTION

3.4.1. For important international events other than European Championships and EFRA Grand Prix, an EFRA Sanction can be requested, in writing only. The EFRA Sanction will be an official recommendation of EFRA to the special event, to ensure a minimum standard. These races may not be called EFRA Grand Prix.

3.4.2. Organisers of international races with an EFRA Sanction are subject to a Sanction-fee. This fee is established by the AGM.

3.5. EFRA SANCTION FEES

3.5.1. The EFRA Sanction fee is established annually by the AGM and published in the minutes of the meeting.

3.5.2. EFRA will invoice the applicant for the EFRA Sanction fee from the 1st of January of the year the race is scheduled. The invoice must be paid to EFRA within 30 days of the invoice date.

3.5.3. The organising country-member must pay all fees for World Championships, European Championships, Grand Prix's and International Races at the beginning of the year of the Championship within 30 days of the invoice date.

3.5.4. A deposit is payable for all E.C's and sanctioned G.P's. Copies of the result and the referees report should be send to the EFRA General Secretary and Section Chairman.

3.5.5. Non-payment of charges invoiced by EFRA by the due date, may lead to withdrawal of the EFRA Sanction and therewith the official status of the event.

3.5.6. If a Grand Prix is cancelled for whatever reason, the sanction fee is not returnable.

3.5.7. FEES (all amounts quoted in Euro)

Membership Fees

Annual Subscription	300
Section Fee	75
Full membership	700 (annual including all sections)
None-active Membership	250
Associate membership	1000

Sanction Fees:-

European Championship	460
International Race	200
Grand Prix	200

Retention bond:- See Rule 3.6.8.

Entry Fees:-

European Championship	120
European Championship 2 classes	170
Grand Prix (maximum)	50

EFRA Handling fees:-

European Championships	20 (For 2019, then to be reviewed)
GP	15 Euro per. entry
International Race	5 Euro per. entry
World Championships + 10% of the IFMAR fees	

Homologation Fees

Mufflers	120	(50% discount for Associate)
Bodyshells	500	(50% discount for Associate)
Large Scale Bodyshells	500	(50% discount for Associate)
INS-Box	800	(50% discount for Associate)
Batteries	500	(50% discount for Associate)
Brushless 05 Motors	50	Per Motor Class.

All transport costs for homologations to be paid by the manufacturer.

After 5 years a body will disappear from the list unless the manufacturer asks for a license for another period of 5 years. The fee for an extra period is 40% of the normal homologation fee.

All above fees applicable starting November 2018.

3.6. ALLOCATION PROCEDURE FOR EUROPEAN AND WORLD CHAMPIONSHIPS

3.6.1. For European and World Championships, member countries can apply for allocated places in the Sections for which they have registered and paid. A member country that is 'new' to any Section for the following year can apply for allocated places, providing they have officially informed the EFRA General Secretary they will be registering for the particular Section prior to the AGM. Within each Section (or Class), each member country to be registered for the Section is entitled to have at least one (1) place allocated at the AGM which must be confirmed by 21st January.

Application for places to be submitted to the Section Chairman before or at the AGM.

The first twenty (20) direct nominated allocations from the Section ranking lists existing in Sections 1/10 IC Track and Large Scale are subject to the approval of their National Federation for these drivers.

3.6.2. At the Annual Conference, each Section establishes the allocations for the next years Championships (additional to the entitled one (1) place), from the official applications of the registered member countries submitted to the Section Chairman.

Final Numbers MUST be confirmed to the relevant Section Chairman by 21st Jan. latest, following the conference. Any places not confirmed by this date can be reallocated to member countries that have places on the reallocation list.

3.6.3. When determining the allocations for each country; host country places and defending Champion places (3.6.6 & 3.6.7), together with any Section rules relating to current World Champions should be established first. Then the following points should be considered, in order of priority:-

- a. total number of drivers;
- b. international results at E.C./W.C./ Grand Prix;
- c. places taken up at the last E.C.;
- d. participation in international racing;
- e. length of membership of EFRA.

Separate procedure exists for Electric Sections (see Appendix 3, 7.2.5.)

3.6.4. At the Annual Conference, the Chairman will propose the allocations-list to the Meeting. The Meeting may, within reason, discuss the proposed list and may ask for changes. In case of disputes, the Meeting can decide the dispute on a simple majority vote.

3.6.5. The procedure for allocating entries is also used for re-allocation unless otherwise stated so. 40 days before the EC and 60 days before a WC the places not taken up by the Countries will be reallocated by the Section Chairman. The

registration must be done at the EFRA web site 40 days before the EC. Failing to register this data in time may lead to re-allocation of the corresponding places. The Meeting may recommend preferential re-allocation of places to countries with small initial allocations. Preferential re-allocation places must be specified in the allocations list.

3.6.6. For a European Championship the host country is allowed 2 extra places in addition to their original allocation.

3.6.7. The defending section/class Champion is allocated 1 place with the sole exception of the B class Champion who is allocated 1 place at the immediate next year European Championship A.

3.6.8 For each European Championship, places will be allocated at the AGM. Federations MUST then confirm their Final Numbers for each event to the relevant Section Chairman no later than 21st January following the AGM. NOTE: ALL EFRA; invoices, payments or deductions will be based on the Confirmed Final Numbers submitted by 21st Jan. for each event.

EFRA will invoice the Federations according to the Confirmed Final Numbers (21st Jan.) with the amount being as detailed in GR 3.5.7 for the current year. Invoices will be sent to the Federations by the end of February and must be paid to the EFRA Treasurer no later than end of March. EFRA will receive 20 euro from each entry fee, based on the total of Confirmed Final Numbers (21st Jan). EFRA will pay the organising Federation 75/80% of the remaining entry fee (after the 20 euro deduction), based on the Confirmed Final Numbers. This amount (75/80%) will be paid to the Organising Federation at least one month before the event, unless a written agreement has been received by the Treasurer to effect payment in a different manner. The remaining 20/25% of the entry fees (after the 20 euro deduction) will be retained by EFRA as a 'performance bond' to cover any expenses for : Referee, Time-Keeper, Race Director or any other key positions if EFRA deem it is necessary to appoint such positions. Any balance from the 'performance bond' will be paid to the Organising Federation after the correct completion of the event.

EFRA will inform the Organising Federation the Confirmed Final Numbers that will be paid by 1st. Feb.

The Section Chairman is responsible for controlling all event allocations and must inform the EFRA Treasurer the Confirmed Final Numbers for EFRA to: invoice Federations and pay the correct number of allocations to the Organising Federation.

NOTE: The above 'performance bond' can be varied at 20-25% at the discretion of the Section Chairman.

3.6.9 European Championship places (not including Open EC) that are allocated at the AGM and confirmed as Final Numbers (by 21st. Jan.) that are not paid by end of February may be reallocated to other countries by the Section Chairman. Real located entry fees will be paid to and retained by EFRA. EFRA will invoice each reallocated entry to the member countries without specifying the drivers name etc. No money can be paid at the event. Reallocation entry fees will be 150% the specified entry fee (GR 3.5.7), unless:

- a) The final number of places allocated to the country concerned is still less than, or the same as, the Final Number agreed (submitted by 21st Jan.).
- b) The country concerned has places on an official Reserve List due to the event being oversubscribed and such places were requested at the time when the Final Numbers were confirmed (21st. Jan.). If additional reallocated places are awarded that increases the total number of entries

at the event to more than the Confirmed Final Numbers (submitted by 21st Jan.), EFRA will pay the organising country the additional numbers.

The Section Chairman is responsible for controlling all event allocations/reallocations and must inform the EFRA treasurer the Confirmed Final Numbers including any reallocated places for each Federation, for EFRA to invoice the Federations concerned and to pay the correct number of allocations to the organiser. At EC events where places are allocated/reallocated, any places not filled by the stated deadline dates (due to cancellations or reduced entry numbers) can be allocated to late entries subject to the agreement of the Section Chairman. Such places must be requested by a member Federation and will be charged at the 150% rate. Late entry requests may be declined if all entry details have been 'frozen' and submitted to the organiser.

- 3.6.10 For an IFMAR World Championship or IFMAR sanctioned event, places will be allocated at the AGM. Federations MUST then confirm their Final Number 'required' for each event to the relevant Section Chairman no later than 21st Jan. following the AGM. (It should be noted that numbers "required" by Federations may not be possible to award, based on the number of allocations granted to EFRA).

The entry fees are payable in € at the actual exchange rate. in advance to the EFRA Treasurer. The entry fee is established by IFMAR and is subject to a 10% EFRA surcharge. The EFRA Treasurer will invoice member Federations separately for all WC allocations by the end of March and these must be paid by the end of April, or within one month of invoice in the case of re-allocations. Re-allocations will be charged at the normal entry fee rate. Once requested by a member country, no WC allocations can be cancelled or fees repaid.

- 3.6.11 All contractual correspondence between EFRA, Organiser and Federation Rep related to EC's and WC's should be sent by registration mail or by a means which has traceability.

3.7. LEGAL LIABILITY

- 3.7.1. EFRA is unable to, and will not, accept any legal liability for any event for which it has granted an EFRA Sanction and accepted a sanction fee.

- 3.7.2. The organisation of EFRA is responsible for maintaining Rules and Procedures as agreed by the EFRA member countries, for which all EFRA sanctioned events must comply with. EFRA Officials cannot and will not accept any legal liability resulting from any situation that may take place at an EFRA Sanctioned event at which they are acting in an advisory or supporting role. EFRA or their officials are not responsible for any claims relating to; injury, damage or loss of equipment or any other financial loss resulting from any procedures or equipment used by the organiser at any EFRA sanctioned event. EFRA is not responsible for any claims for any financial loss as a result of an EFRA sanctioned event having to be cancelled or curtailed. Competitors or 'their guardian' can be requested to sign an agreement to these conditions before taking part in any EFRA sanctioned event.

4. INTERNATIONAL DRIVERS REGISTRATION

4.1. OBJECT OF THE INTERNATIONAL DRIVERS REGISTRATION:

Starting 2019, EFRA will not be issuing any EFRA Licences. Instead, member Federations are authorised to approve driver Registration on the EFRA website database for persons that are current members of their Federation. Registration approval is for one calendar year ending on 31st. Dec. Federations must review each year.

A drivers Registration number should remain unchanged from year to year and must not be used for re-issue to other drivers. Each number is a personal number.

4.1.1. International driver's registration is to enable organisers to compose the qualifying heats so that novice or less experienced drivers are not mixed up with the top International drivers, in the interest of both groups.

4.1.2. Drivers can register their personal data on the EFRA website database (www.efra.ws), but will not be considered an EFRA Registered driver until their National Federation has approved the registration.

4.1.3. All competitors at European Championships and World Championships (all events previously requiring an EFRA Licence) must be registered on the EFRA entry system database.

Application for entries at EC's or WC's must be made by the National Association that have granted and approved the EFRA Registration, using the entry system on the EFRA website (www.efra.ws). The registration will have a unique number issued by the Federation and must include the two letter country code of the National Federation with the Registration Number.

Each National Federation shall be entitled to issue and/or approve EFRA Registration to :-

- 1) It's Federation Members that have current membership, that are deemed acceptable by the Federation.
- 2) To the nationals of other countries represented in EFRA, providing :-
 - a) The driver can produce definitive proof of residing in the country issuing and approving the registration.
 - b) That their parent National Federation (the country of their passport) gives its prior agreement to the issuing of the registration. This can only exist on an annual basis and will cease to be in force at the end of each year.
 - c) That their parent National Federation has cancelled any approved EFRA registration originally issued if such exists.

No person that is authorised by their parent National Federation (country of passport) to apply for EFRA Registration by another National Federation, shall hold EFRA Registration from their parent National Federation valid for the current year.

If for very special reasons, an EFRA Registered driver wishes to change the nationality of his registration during a year, he would only be able to do so after having obtained his parent National Federation's consent and once his parent registration has been cancelled.

A National Federation cannot grant any EFRA Registration to a foreigner belonging to a country not yet represented in EFRA. This can only be done by the EFRA Board in exceptional circumstances.

Event Organisers will register the EFRA Registration Numbers of all drivers and record these in all results.

- 4.1.4. All competitors at EFRA Grand Prix and other EFRA sanctioned events (not including EC's or WC's) must have a valid National Licence issued by their National organisation. National Licence must be verified at the event registration. The organiser will register the numbers of all drivers and record these in the final results.

Drivers with EFRA Registration take precedence over non-EFRA registered drivers at EFRA Grand Prix in the event of over subscription.

- 4.1.5. Nationality of a competitor or driver:
All EFRA drivers, irrespective of the nationality of their registration, participating in any IFMAR World Championship or EFRA European Championship event, shall retain the nationality of their passport in all official documents, meetings, information bulletins and prize-giving ceremonies.

- 4.1.6. Any European driver holding EFRA Registration (or previously licence) for the past years in any class, and who has participated in an EC in any class for the past years, is not entitled to participate in a World Championship in any class for another International Bloc.

Any driver found doing this, will not be allowed EFRA Registration for the next 2 years.

- 4.1.7. If IFMAR does not hold a Large Scale Off-Road World Championship event in any year:- Then drivers from other Blocs within IFMAR can apply for EFRA Registration and pay the entry fee directly to EFRA for an entry in the Large Scale Off-Road European Championship event of that year. This only applies to Large Scale Off-Road.

4.2 CANCELLATION OF INTERNATIONAL EFRA REGISTRATION.

- 4.2.1. Member Federations have the absolute right to issue, approve or cancel International Registration.

- 4.2.2. EFRA additionally reserves the right to cancel or withdraw International Registration from any driver who:

a) Has been adjudged to have flagrantly and repeatedly broken EFRA or IFMAR rules.

NOTE: The issue of Warnings for driving offences during a race would not in normal circumstances constitute grounds for cancellation of International Registration.

b) Has been excluded from his National Federation. Note: See rule 8.14.10.

- 4.2.3. Cancellation of EFRA International Registration must be authorised by the EFRA Executive Committee. Any appeal in the decision must be received in writing by the EFRA secretary within 30 days.

- 4.2.4. The driver must be given 14 days notice in writing of any such hearing which will normally be included in the Agenda of an Executive Committee Meeting.

- 4.2.5. The driver has the right to appeal within 14 (fourteen) days of the decision.

4.3 TEAM DRIVING:

- 4.3.1. In a case where team driving, unsporting behaviour or conduct by persons that is construed as being prejudicial to a fair race are suspected, the official referee will consult with the race director (or vice versa). In cases where both officials agreed that such action have occurred and they have been unable to act, they

will report to the most senior EFRA official present, or otherwise the Section Chairman, who may take any action apart from issue penalty or sanction. The senior EFRA official, or Section Chairman will present the full circumstances of any such report to the EFRA Committee at the next meeting opportunity.

- 4.3.2 Any driver directly involved must be called to represent himself/herself at a meeting of the EFRA Committee and will be given due notice according to rule: 4.2.4. Any failure to attend or otherwise represent himself/herself will be taken into consideration.
- 4.3.3 For instances of team driving, gross misconduct, serious unsportsmanlike behaviour, conduct prejudicial to a fair race, the EFRA Committee may exercise its right to refuse the subject attending or participating in any meeting or event for incremental periods of six month up to a maximum period of five years.

5. GENERAL REQUIREMENTS EFRA EVENTS

5.1. GENERAL REQUIREMENTS TRACK

- 5.1.1. Access: approach by car must be possible to within at least 100 mtr. of the pits.
- 5.1.2. Parking: parking for competitors must be available within 100 mtr. of the pits.
- 5.1.3. Spectators area barriers must separate spectators from the track and the pit area.
- 5.1.4. Public conveniences: water and toilets for both competitors and spectators must be provided.
- 5.1.5. Refreshments: a place should be provided for this purpose.
- 5.1.6. Electricity: 230V must be available in the drivers area for charging batteries and using solder iron. The organiser can allow the use of other electric equipment if power supply is sufficient.
- 5.1.7. Hotel and camping: sufficient and reasonably priced hotel and camping facilities within 20 minutes of the track must be available.
Wherever possible, it is preferable that camping should be at trackside. Any charges must be fixed before arrival of competitors and mentioned in the invitations.
- 5.1.8. An EFRA Press Area must be put in place by the Organizer of any EFRA European Championships, that must be protected against bad weather and must be equipped with tables, chairs, electricity supply. EFRA Press Area must have a Quality of Service (QoS) capable unrestricted internet connection, which is shared using QoS between EFRA Media Partner and other media representatives. Sharing is done in way, that EFRA Media Partner has up- and downstream bandwidth, which fulfils the requirements of yearly revisited specifications agreed at AGM together with EFRA technical representative and EFRA Media Partner. These requirements will be announced during AGM and published in meeting minutes.
- 5.1.9. Track requirements are specified per appendices.
- 5.1.10. A dedicated smoking / vaping area must be provided.

5.2. ACCOMMODATION REQUIREMENTS

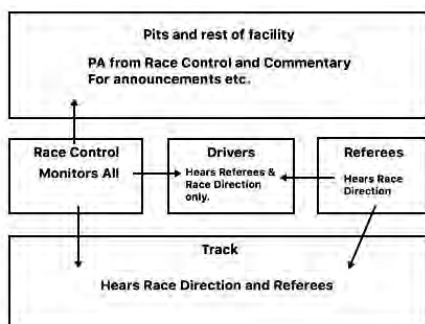
- 5.2.1. Drivers pitting area must accommodate all drivers and be equipped with tables, chairs and protection against bad weather (outdoor racing). The driver's rostrum must be easily accessible from the driver's area. Based on the Final entry list supplied by the Section Chairman, the organiser will allocate pitting spaces so that drivers from the same country pit together, providing the pitting area allows.
- 5.2.2. The driver's rostrum must accommodate 10 drivers with minimum 80cm space for each driver.
Width of the rostrum must be minimum 1.25 mtr.
Height of the rostrum - floor to be:-

Standard	Between 2 and 3 mtrs
1:12 Electric Track Section	Between 1 and 3 mtrs
1:10 Electric Off Road Section	Between 1.5 and 3 mtrs

Access to the rostrum must be by a solid stair, with a minimum width of 1.20 mtr. The use of individual stands on the rostrum is only valid for people under 160 cm and on their own risk. A strong parapet is mandatory. The rostrum must be protected or capable of being protected against bad weather.
A sand box and a fire extinguisher must be placed on the rostrum when the transmitter impound is placed there.
- 5.2.3. The driver's rostrum must be placed in a position that provides equal view of the track to each of the drivers at any place on the rostrum, during practice and

racing. The view may not be obstructed by any object (pillar, flagpole, other drivers etc.). The distance from the front of the rostrum to the nearest part of the track is recommended to be between 2 and 4 mtr.

- 5.2.4. Timing and lap counting area must be located at a slow part of the track, with a good view of the track for all lap counting officials. The number of the car must be readable for at least 2 seconds from that area. Car numbers must be used as provided by the Organisers. EFRA will supply EC organizers with car numbers, it's compulsory to use the provided numbers
- 5.2.5. Timing and lap counting area must not be accessible to competitors or spectators.
- 5.2.6. A result board must be positioned at a convenient place not far from the timing and lap counting area and accessible to all competitors. The result board must be protected against rain and wind. An electronic score board is recommended.
- 5.2.7. A suitable public-address system must be provided. It must be capable of fulfilling the referee's requirements on the rostrum (7.1.24), making clear announcements to the pit area and able to make safety announcements on the track area. It must have some means over riding any commentary in the track and pit area. It is not allowed to feed any commentary to the rostrum and pit lane.



5.3. SAFETY

- 5.3.1. The safety of the spectators is of prime importance and must be considered when laying out track and spectators area.
- 5.3.2. The safety of officials, helpers, competitors and accompanying people is of equal importance, but it is assumed that they are more aware of any potential danger.
- 5.3.3. Spectators, competitors and officials must be efficiently protected against the cars by adequate barriers.
- 5.3.4. When dots are used as barriers to prevent shortcutting of corners, they must be placed in a way that cars cannot "fly" into the public when they hit the dot at full speed.
- 5.3.5. Technical inspection must always include the bumpers (no sharp edges allowed), or other protruding parts of the cars. They may never be placed or designed in such a way as may cause serious injuries in case of an accident.
- 5.3.6. First-aid supplies: The minimum should be available in case of necessity. It is recommended that there also is equipment to clean eyes in case of accident with splashing glue, methanol, petrol etc.
- 5.3.7. First-aid: a first-aid officer should be present during events to which large crowds will be attracted.

- 5.3.8. Police and ambulance services must have easy access to all areas both public and restricted.
 - 5.3.9. A public liability insurance, against accidents, and legal liability is compulsory for all events. The cover must be applicable to all competitors and officials, irrespective of their nationality or sporting status.
A copy of the insurance certificate should be presented to the Section Chairman prior to the event.
 - 5.3.10 Mobile phones are not allowed to be used on the rostrum, pitlane or on the track. Other transmitting devices, except those who are needed by the organiser, are not allowed to be used. With the exception of the drivers radio equipment and the equipment mentioned at 8.6.2.b).
 - 5.3.11 In the case of a race which is interrupted for more than 60 minutes for reasons beyond the control of the organizers (e.g. bad weather conditions with safety risks for all persons at the meeting), the referees together with the Race-director will decide, after consulting with the EFRA Representative (if present) whether to cancel or continue the meeting.
If the planned number of practice rounds, qualifying rounds and finals not being possible to complete, then priority will be given in the order of one Controlled Practice Round.
Minimum number of Qualifying Rounds as detailed in Section rules.
Finals. (Finals take precedence over additional Qualifying Rounds).
 - 5.3.12 In the interest of safety any battery pack carried on a model car must be able to be disconnected quickly in an emergency.
Note: Direct soldering of battery packs is not acceptable.
All racing batteries, car and radio equipment, irrespective of the kind of material of its composition, must be charged in a Lipo sack at all times.
LiPo sack is defined as a receptacle designed for the purpose of charging LiPo/LiFe batteries and of a suitable construction as to contain a LiPo/LiFe fire.
- 5.4. LAPCOUNTING AND TIME KEEPING AND COMPUTER REQUIREMENTS**
- 5.4.1. Independent systems must be used simultaneously at EFRA Sanctioned events.
 - 5.4.2. For European Championships only, EFRA will check both systems.
 - 5.4.3. These systems must satisfy the requirements of EFRA and therefore must be proposed and explained in the application.
 - 5.4.4. Both systems will be operated by the organising club.
 - 5.4.5. The first system must produce a record of all the individual lap times of all cars and the number of laps and final times after finishing.
 - 5.4.6. The second system will be used as a back up system and must produce a record of all individual lap times and the number of laps and final times after finishing.
 - 5.4.7. Lap times and final times must be recorded in hours, minutes, seconds and 1/100th of seconds. At least 1 (one) Lap Recording System must be capable of this.
 - 5.4.8. Electronic systems are used, printouts must be kept with the record sheet, on which the final result is written down.
 - 5.4.9. The results from the first and second system are compared and in case of differences, the time-keeping official should examine the data produced and in particular the lap time-sheets. The final decision on the result is the responsibility of the Timekeeper.
 - 5.4.10. Race director and/or lap counting official at EC's must have a suitable working personal computer with proper, race proven programs to sort the lap times, print results from heats, final positions after each series of races within 15 minutes.

- 5.4.11. The time-keeping official is responsible for publication of the final results. He must store all the data produced by the 2 systems until the end of the meeting. They can be used in case of protest against the result.
- 5.4.12. Electronic systems must be connected to a reliable power source (Preferably not a generator). Connecting plugs must be firm and not easy to disconnect. When 2 electronic systems are run simultaneously, they should not be connected to the same power source.
- 5.4.13. For timekeeping accommodation requirements, see 5.2.5. and 5.2.4.
- 5.4.14. The official result sheets containing results of all heats, semis and finals, must be sent to the EFRA Section it concerns within 10 days of the race.
- 5.4.15. The clubs that apply for an EFRA event must guarantee (mandatory), that the software to be used for time-keeping provides the capability of online streaming of the lap times (lap by lap, in real time). The software used must also have the capability to store, and show online, through the hole event, the reports (including general classification) after the different heats or finals.

5.5 CLASSIFICATION OF DRIVERS

- 5.5.1. Qualification for finals will be based upon each driver's best single score achieved during the qualifying heats, or upon points achieved during qualifying rounds/ heats as detailed by Section/Class rules. General rules
- 5.5.2. In the case of more than one driver recording identical best results at the end of qualifications, the next best result is taken unless otherwise stated at class/ section rules.
- 5.5.3. In the case of more than one driver recording identical best results in a final the driver starting with the highest number is classified as the fastest. (e.g. if numbers 5 & 2 are equal then 5 is deemed as the highest final placing)
- 5.5.4. In the case of more than one driver recording identical best results in a final and having used all possibilities to sort them out without success, the qualification order will decide.

6. ORGANISATION OF EFRA EVENTS

6.1. RACE ORGANISATION REQUIREMENTS

- 6.1.1. Preliminary Checks: Before applying for an EFRA sanctioned event, the host club must:
- a) Be confident they can offer foreign competitors a race that is worth the travelling and expense in all respects;
 - b) Have the track available from at least Friday-morning prior to the race (09.00 till 18.00 hours minimum), unless stated differently by section appendix;
 - c) Be sure the track and accommodation comply with the rules as described in chapter 5 and the section appendix;
 - d) Have enough experienced volunteers to organise the race, and set up a committee for this purpose to cover: lap counting and timekeeping, technical inspection, and race control facilities, organise marshalling and to arrange hotel accommodation and publish race results in the internet as the race advances.
 - e) Have the necessary authorisation to hold the race, i.e. from the owner of the track or property, with regard to noise, spectators, refreshments, chargeable entries etc.
 - f) have the right insurance for an international event.
- 6.1.2. Request for EFRA Grand Prix and European Championship (see chap.3) The organising club must request the race through its National Association, who will forward this request to EFRA as described in paragraph 3.2.2. and 3.3.3. The National Association may reject such a request even before sending it to EFRA, they being in the first instance responsible for such a race.
- 6.1.3. Request for EFRA Sanction or other major international meetings are made in the same way. Such requests can be made to EFRA at any time of the year but before 31 August of the previous year.

6.2. INVITATIONS AND FORMS FOR EUROPEAN CHAMPIONSHIPS

- 6.2.1. The host Federation shall provide sufficient copies of the necessary information to the EFRA Section Chairman not less than 120 days before the event. The information shall include a program to be approved by the Section Chairman, a plan of the track, directions to the track, hotel accommodation etc. The invitation must state whether the race is to be run in a clockwise or anti-clockwise direction. The Section Chairman must make sure that all EFRA contact addresses receive this information, together with the entry forms, not less 90 days before the event. The information should, at the same time, be published on the EFRA website www.EFRA.ws.
- 6.2.2. For European Championships the National Federation is responsible for registering their national team at the EFRA tool, at the latest 40 days before the event. They may submit a waiting list for up to 4 drivers additional to their country allocation for reallocation purposes. Those extra 4 names must be clearly pending on EFRA approval.
- 6.2.3. 55 Days before the event any places not taken will be re-allocated by Section Chairman, using the procedure established at the AGM. The reallocation will be published to all the participating countries 40 days before the event at the latest. If the re-allocated places do not fill the entire series of heats, the host country may provide the remaining drivers. The entry fee for such will be the normal allocation fee.
- 6.2.4. Only drivers with an international EFRA Registration can participate in a European Championship.

- 6.2.5. Organisers must confirm the entries of all competitors participating in the race, 30 days before the event at the latest, to both the National contact address and each competitor and through publication on the official website of the event.
- 6.3. INVITATION AND ENTRY FORMS FOR EFRA GRAND PRIX ETC.**
- 6.3.1. Invitations, Entry forms and time tables with additional information must be published on, or linked from, the EFRA web site at least 60 days before the event. This information must be at least in English language.
- 6.3.2. The National Association distributes the entry forms to the interested drivers, completing the entry form and sending it to the organizing Club is the responsibility of the individual driver. The organizer may request payment of the entry fee in advance. If this is requested the entry form must specify the methods of payments. Among those an IBAN number with all data needed for international Bank transfer is required; other methods of electronic payment (e.g. credit card or pay-pal) are also acceptable.
If payment in advance is requested the entry is not confirmed until payment is done. Only due to exceptional circumstances the payment might be refunded in the event of a no-show previously communicated.
Closing date for the entries must be marked on the entry form but should not be later than 7 days before the event.
- 6.3.3. The maximum number of entries at an EFRA Grand Prix may not exceed 120 under normal circumstances or 144 in the event of heats and finals of 12 drivers or more.
- 6.3.4. Drivers who cannot take part because of over-subscription should be notified by the organisers.
- 6.4. PROMOTION AND SPONSORING**
- 6.4.1. EFRA events must be organized in such a way that the sport is well represented to both the spectators and the competitors. Enough advertising must be made in the area to draw spectators and to interest the Press in the EFRA event. An event website for EC's should be made. Live feed of results and probably picture's/ film is advisable.
- 6.4.2. When sponsors are attracted, they may only be offered advertising space on cars or drivers (shirts or jackets), when the sponsors name does not conflict with any manufacturer of cars, radio equipment, engines (related to the model car sport), present or represented in the race.
Sponsors may not demand from the organisers the exclusive use of their name or their product by all competitors during the event.
- 6.5. CONVENIENCE AND SECURITY**
- 6.5.1. For European Championships, public convenience and refreshments must be available to all competitors from the first day of the event onwards.
- 6.5.2. For EFRA Grand Prix, public convenience and refreshments must be available to all competitors from Friday onwards.
- 6.5.3. All possible action must be taken to avoid any danger for public or competitors (see 5.3.). The police must be advised of the meeting.
- 6.5.4. The Pit area must be secure. All possible care must be made to safeguard both the drivers and their equipment.
- 6.5.5 : Animals in pits and working areas are strictly forbidden.

7. RACE OFFICIALS

7.1. REFEREES List see chapter 1

7.1.1. The main task of Referees is to observe the racing and in particular good sportsmanship during racing.

He will ensure that the current EFRA rules are observed by everybody.

The referee for a Championship should be nominated at least 60 days previous to the event.

7.1.2. Referees are part of the International Jury when a meeting is called by the Race Director. The Referees will advise on any dispute regarding procedures associated with driving, marshalling or rostrum area behaviour.

7.1.3. Two EFRA referees, (see approved list) appointed by the section chairman after consultation with the national federation, are required for all EFRA EC's with allocated places. At least one of them must be from abroad and will be head referee. The hosting federation must provide suitably qualified substitute(s) to assist and stand in.

For GP's and open EC's one EFRA referee will suffice (see approved list). A second referee, known by name and approved by the national federation but not necessarily on the approved list may be accepted. The hosting club must provide a suitable qualified substitute to assist and stand in. EFRA does not pay any referee expenses for GP's or sanctioned International races.

7.1.4. EFRA referees are appointed by EFRA for a period of two (2) years after being proposed by their National Federation. The EFRA Referee form must be used and the registration year will be indicated on the Referee list, chapter 1.

EFRA referees must be experienced and unbiased people with a good knowledge of the English language and EFRA rules. They must have acted as Referee at least at National level in that class before being proposed by their National Federation. Each Section will prepared a list of approved Referees from those proposed together with an indication of their experience level.

EFRA Referees are divided in 3 categories

Grade C: Grand Prix or International Meetings

Grade B: European Championships

Grade A: World Championships

Grade A and B EFRA Referees must, after proposed by National Federation, receive the sanction of the appropriate Section Chairman.

Appointment to be made by the EFRA Executive Committee.

7.1.5. EFRA will pay the travelling costs (agreed in advance) of one Non-National Referee appointed by EFRA to European Championships with allocated places at the AGM. All other costs (Hotel, meals, sundries etc.) to be covered by the organiser. EFRA will retain a 'performance bond' (rule 3.6.8) from the Entry Fees paid to the Organiser/Federation to cover these costs and any balance will be paid to the Organiser/Federation at the end of the year, or when all costs have been ratified and the EFRA officials have confirmed the event was to EFRA standards. It is assumed that the Organiser will reserve adequate and decent hotel accommodation for the EFRA appointed Referee and provides comfort at trackside (lunches, refreshments, dinner-party ticket etc.). If the accommodation reserved by the Organiser is deemed unsuitable, the EFRA Referee has the right to seek an alternative. The EFRA Referee is entitled to claim a maximum of 100 Euro (or equivalent) for Hotels, meals, sundries per 24hr. period. Higher costs will be the responsibility of the Referee. All costs claimed, must be duly documented on the expense claim to EFRA with receipts

provided. The EFRA Referee will inform the Organiser/Federation of the costs that will be claimed prior to leaving the event. The organiser has the right to settle some/all of these costs direct, therefore reducing any claim by EFRA against the 'performance bond'.

7.1.6. REFEREES DUTIES

At EFRA events at all times during the qualifying heats, both referees in turn will watch and observe the racing from start to finish.

During the finals both referees must observe the racing from start to finish. The host Federation must provide suitably qualified substitutes to stand in for these referees should they be called away from their duties. The expenses of these substitutes must be clarified in advance between host Federation and the organising club.

7.1.7. Both referees always work together, they take decisions and issue warnings and instructions. The referees may take action after an initial warning, but in all cases a maximum of 3 warnings means automatic disqualification.

7.1.7 a The Referees will agree on any time or other penalties to be awarded following consultation with the Race Director taking into account the likely advantages to be gained by Jump Starts etc. on individual tracks. They will also decide the practical limits for numbers of pit lane mechanics. This will normally be limited to:

a) 1 mechanic plus Team Manager during qualification

b) 2 mechanics plus Team Manager during finals.

If space permits these numbers can be adjusted upwards.

7.1.8. POINTS OF OBSERVATION

7.1.8a. Bad sportsmanship during racing, i.e. impeding the progress of other participants, deliberate slowing down (including deliberately slowing down and/or coasting past any noise testing equipment with the intention of avoiding the checks) or waiting for another car, deliberate crashing into another car, deliberate cutting of corners and reckless driving in general.

7.1.8.b Team driving, conduct unbecoming or interfering with the fair outcome of a race (refer to rule 4.5 UNSPORTMANSLIKE BEHAVIOUR)

7.1.9. Unsporting behaviour of drivers and mechanics involved in the racing.

7.1.10. Incorrect use of the entry and exit to the pits.

7.1.11. Repairs and refuelling outside the pit area.

7.1.12. Cars that do not conform to the regulations before the start is given or during the racing (i.e. loss of the bodyshell, exceeding the noise-rules due to loss or damage of the silencer).

7.1.13. Cars that are in an undriveable or dangerous condition due to damage or malfunctioning of the car.

7.1.14. Starting procedure, i.e. writing down start line infringements and if necessary reporting these to the time-keeper.

7.1.15. It is not the duty or the responsibility of the referee to check that the cars confirm to the technical rules. This is always the responsibility of the Technical Inspector. The Section Chairman (or the EFRA appointed deputy) checks the methods used for technical inspection.

7.1.16. REFEREES AUTHORITY

7.1.16a. The referee issues warnings in the event of infringements of any of the points as described under 7.1.8.-11 and ultimately may even issue a black-flag (disqualification) when his warnings are not effective.

7.1.17. Warnings and instructions are announced by the referee himself and he keeps a record of the warnings and instructions issued (referee-notes). 3 Successive

warnings lead to disqualification (black flag). Instructions issued by the referee must be observed immediately.

- 7.1.18. Warnings for bad sportsmanship (7.1.8.-7.1.9.) are announced with the words: "FIRST WARNING TO CAR NO.....FOR BAD DRIVING".
- 7.1.19. Warnings for mis-use of the pit are (7.1.10 and 7.1.11) are announced with the words: "FIRST (SECOND) WARNING TO CAR NO.....FOR MIS-USE OF THE PIT AREA".
- 7.1.20. Instructions for repairs (7.1.12 and 7.1.13.) are announced with the words: "CAR NO.....REPAIR BODY, SILENCER, CAR ETC".
- 7.1.21. The warnings and instructions issued by the referee are indisputable and final and may not be interfered with by anyone. Under no circumstance may a warning or an instruction from the referee lead to the interruption of the whole race.
- 7.1.22. Appeals against the decisions of the referee must be addressed to EFRA General Secretary, after the meeting and in writing. EFRA is not obliged to act on such a complaint, but will seriously study it and answer.

7.1.23. REFEREES FACILITIES

Referees must be offered a place from where they can observe the track from the view as seen by the drivers. At an EFRA EC must this place be on the rostrum. The place must be separated from the drivers area, to assure a quiet and undisturbed working environment. Protection must be given against bad weather (walls, roof etc).

- 7.1.24. The place must be equipped with 2 chairs, a table, a microphone and a monitor to watch the race order. With the microphone the Referee must be able to announce his warnings or instructions at any time during the race. A system of preference for the Referees microphone over the announcers microphone must be provided by organisers.
- 7.1.24a. Referees should be able to communicate verbally with each other, the Race Director and Lap Counting Supervisor.
- 7.1.25. It may be assumed that the referees comfort is provided for by the organisers (lunch, refreshments, dinner-party etc.).

7.1.26. REFEREES REPORT (EFRA REF: REFEREE 92-1/7)

- 7.1.26a. Both referees make up their official EFRA report directly after the race, provide a copy to the Race Director, and send copies of it to the Section Chairman and General Secretary. The report should contain general information about the organisation, accommodation and races.
Referee notes with issued warnings etc. should to be included.

7.2. TIME KEEPING SUPERVISOR AT EUROPEAN CHAMPIONSHIPS

- 7.2.1. For all European Championships, EFRA will approve a Time-keeping Supervisor to check the systems provided and operated by the organising club.
- 7.2.2. EFRA will not be responsible for the costs.
- 7.2.3. EFRA approves the equipment of both Time-keeping systems.
- 7.2.4. The organising club must provide experienced lapcounters and a suitable accommodation for the Time-keeping Supervisor.
- 7.2.5. The Time-keeping Supervisor is responsible for recording all the individual lap-times and total laps plus finishing time of all drivers during all heats, semi-finals and finals.
He is not responsible for the classification of the results, nor for the selection of drivers for semi-finals and finals.
- 7.2.6. After the finish of any heat, semi-final or final, the results of the first and second time-keeping system are compared by the Time- keeping Supervisor and in case of differences between the 2 systems, the Time-keeping Supervisor

investigates both results and takes the decision on the final result. Only the results approved by the Time-keeping Supervisor may be published to the competitors and are official.

- 7.2.7. In case of protests against results, the Time-keeping Supervisor together with the Race-Director will check on the questioned result and will take the decision.
- 7.2.8. All results, written, printed or otherwise, in their original condition are property of EFRA and kept by the EFRA Time-keeping Supervisor until the end of the event (see 7.2.1.). After the event all relevant data will be sent to EFRA (rule 5.4.14). Copies of the original data are left with the organisers.

7.3. RACE OFFICIALS

7.3.1. Mandatory Officials.

In EFRA Sanctioned races it is mandatory to have the following Official positions held by different persons:

- a. Race-Director
- b. Time-keeper
- c. Technical Inspector

Other Officials have to deal with:

- d. registration of entrants, checking EFRA Registration, collection of fees;
- e. supervise transmitter impound;
- f. giving start and finish signals;
- g. lap-counting and time-keeping;
- h. recording and publishing results;
- i. separation of public/drivers area and track
- j. supervising the marshalling around the track;
- k. track marshalling.

7.3.2. Qualification of Officials.

All Officials must be properly trained and experienced persons, with the main positions held by persons with international experience and a good knowledge of the rules and the English language. All main Officials must be able to converse in English.

7.3.3. Selection of the Officials.

For EFRA Sanctioned races, the organising club may select all the Officials. The Race-Director must be approved by the National Association. For European Championships the Race-Director must be known and approved by EFRA as well.

7.3.4. All Officials, except Referees and the Time-keeping Supervisors, are subordinate to the Race-Director, who issues detailed instructions for all jobs.

7.3.5. No Official is allowed to take part in a race.

7.3.6. Officials should be clearly distinguished from competitors and spectators by wearing a band or otherwise.

7.3.7. No Race Official is empowered to make interpretations of any EFRA Constructional or Procedural Rule either during technical inspection or racing without full approval of the International Jury. During the meeting of the International Jury which is convened for the purpose of approving any such interpretations, it is the duty of the Section Chairman (or the EFRA appointed deputy) to provide authoritative guidance on the interpretation of any rule in question.

7.4. INTERNATIONAL JURY

7.4.1. The international jury consists of the section chairman if present, all Team-Managers or their deputy of the countries present, the Race Director and the 2 EFRA Referees. All decisions are taken by simple majority, one vote per person

and no proxy votes. In case of parity of votes, the Section Chairman has the deciding vote. The result of each decision must be published in writing.

- 7.4.2. During a meeting of the International Jury, at least 2/3 of all countries must be present at the meeting. The Team Manager or his deputy must be present.
- 7.4.3. Responsibilities of the International Jury:
 - a. to adjudicate in unforeseen situations.
 - b. to adjudicate in the case of protests if needed.
 - c. to amend the schedule.
 - d. to check that the race is run according to the official EFRA rules.
- 7.4.4. When necessary, the Race-Director calls an International Jury meeting. The Referees may also call an International Jury meeting to settle disputes or protests against unforeseen situations. A written agreement of 3 Team Managers have the power to call an International Jury meeting. The Race-Director must provide a room or other place for the international jury to meet in seclusion.
- 7.4.5. The international jury is not responsible for the organisation and the well running of the race.
- 7.4.6. The International Jury may only adjudicate in the interpretation of the official EFRA rules. It may not either alter or ignore the rules and may not instigate it's own rules.

7.5. TEAM MANAGER

- 7.5.1. The Team Manager or a nominated deputy, approved by the Race Director should be present during all official racing and is a member of the International Jury. The Team Manager is appointed by his national association.
- 7.5.2. Responsibilities of the Team Manager are:
 - a. To register on behalf of his team providing the organisers with all driver's EFRA Registration and frequencies.
 - b. Be present at the technical control. either before, during or after the end of the race, in which team members participate.
 - c. Look after the welfare and behaviour of his team and take care they receive proper accommodation in the pits area.
 - d. He must attend the Team managers meeting(s) prior to the start of the race.
 - e. He is the link between his team and the race direction by receiving all information referring to.
 - time table changes
 - frequency changes
 - results after every qualification round, sub finals, semi-finals and finals
 - other information referring to the race.
 - f. He is allowed to stay in the pit area when a race of one of his team members is in progress.
 - g. He will receive a list with frequencies from Race Control for his drivers before the official race (timed practice) starts, so he can check that there are no discrepancies
- 7.5.3. At Championships, Team-Managers preferably do not take part in the race. They must speak English.

8. GENERAL RACE PROCEDURE

8.1. PRACTICE AT EUROPEAN CHAMPIONSHIPS

- 8.1.1. At European Championships, at least 1 series of organised practice in heats per class is compulsory. It is compulsory to run at least the last round of the organised practice with official starting, official time keeping with the results published, as in official racing.
- 8.1.2. Results scored during organised practice could determine the start order (when using delayed start) in Round 1 of the qualifying heats.
- 8.1.3. Organised practice must be seen as a last rehearsal and test for both the organisers and the drivers and therefore all EFRA rules have to be followed seriously.
- 8.1.4. Free practice for all drivers CAN be allowed prior to the organised practice. During free practice a frequency board must be in use. In order to give every driver the same free practice and organised practice time a ticket system may be used under the control of the Race Director.
Whether it is free, organised or timed practice, the identity of each driver must be carefully checked upon arrival on the rostrum.
- 8.1.5. Free practice on the day of racing may be allowed by the organisers till 30 minutes before the start of the first heat. This is not compulsory.
- 8.1.6. Free practice may only be allowed between the start of the first heat and the finish of the main final at the discretion of the organiser. Free practice is not mandatory. If free practice is planned it must be well known to everybody fairly in time.
- 8.1.7. A driver, not taking part in the organised practice, may not complain later to the organiser in case of radio-interference etc.
- 8.1.8. During Free and Control Practice driver's must follow Race Control instructions - may be given in a written paper prior to the event start -, specially all instructions related to marshalling and technical inspection - e.g. go to his marshalling position after a practice, or mark chassis prior to the start of the qualifying. If a driver does not follow those instructions he will lose his best qualifying result

8.2. PRACTICE AT OTHER EFRA SANCTIONED RACES

- 8.2.1. At least one day of practice in heat format for all drivers who wish to take part is recommended; normally Friday.
- 8.2.2. During the free practice the frequency board must be in use.
- 8.2.3. An organised practice of only one series of only one class is optional. This organised practice should be used as a last rehearsal and test and must include official time-keeping (see 8.1.1.).
- 8.2.4. Practice on the race-days may be allowed till 30 minutes before the start of the first heat and after the prize-ceremony, but is not compulsory.
- 8.2.5. When the organizer has started organized practice, all drivers must respect the time schedule and the heats set. If a driver is caught cheating, for instance taking part in two different practice heats the driver will be disqualified from the race.

8.3. ARRANGEMENT OF THE HEATS

- 8.3.1. For arranging the heats the organiser must consider the skill of each driver. If the section has a grading system for registration, only drivers with the same grading may compete in the same heats.
- 8.3.2. One arrangement of heats may be used for one class only and must be different for following classes, with the purpose of finding different opponents.
- 8.3.3. Organisers may only change the composition of a heat when there is a serious and obvious problem that cannot be solved otherwise.

- 8.3.4. Prior to commencement of Qualifying Rounds, drivers should be re-grouped for qualifying heats taking into account controlled practice results and/or upon the Race Officials observations. For EFRA GPs, the reseeding has to be based on controlled practices from Friday and Saturday.

8.4. REGISTRATION

- 8.4.1. At European Championships drivers registration must take place on the day prior to the race. Registration will be done by the National Team Manager. During registration the drivers EFRA Registration is checked. The registration numbers will be registered by the race organiser.
- 8.4.2. At EFRA Grand Prix and other EFRA sanctioned races, drivers registration may take place up till 30 minutes before the start of the first heat.
- 8.4.3. Driver's registration must involve:
- paying the entry fee (G.P.s only, if not previously collected in advance);
 - checking the required drivers license;
 - receiving a list with the heat arrangement/timetable, including the frequencies used;
 - receiving other necessary information
- 8.4.4. At every EFRA event, pre-registration may be requested by the organizers. Limit date for pre-registration must be 72 hours before the official limit time for registration. Pre-registration must involve:
- Name of driver
 - Country
 - The required drivers license
 - EFRA License number
 - At least two (2) frequencies
- And may involve: Payment in advance, Sending a picture for accreditation.

8.5. FREQUENCIES AND FREQUENCY CHANGES

- 8.5.1. Frequencies authorised by the governing body of the country concerned will be used.
- 8.5.2. In case of more than one driver using the same frequency during practice, the time for each driver must be divided equally.
- 8.5.3. In case of 2 drivers using the same frequency who qualify for the same semi-final or final, the faster qualified driver will keep his frequency and the other must change.
- 8.5.4. When a frequency change is required, up to 10 minutes time must be allowed following notification to carry out the change.
- 8.5.5. Slower qualifying drivers, who cannot or will not change their frequency, will not take part in the semi-final or final for which they have qualified.
- 8.5.6. If a driver must change his frequency before the start of a semi-final or final due to an error of the organisers, he will be allowed up to 10 minutes time to carry out the change.
- 8.5.7. If a driver finds his radio-equipment defective or has made an error in the selection of his crystals, the race will not be delayed beyond the schedule (see Racing Formats).
- 8.5.8. All frequencies and frequency changes must, at all times, be authorised, in writing, by the respective countries team manager and designated Official before the frequency is approved or the change is made.
- 8.5.9. No frequencies will be published on heat sheets and other public information. The frequencies used by the drivers will only be known to the race-officials.
- 8.5.10 A minimum of 10 kHz between frequencies must be used. A Frequency spacing of 20kHz between the competitors is recommended.

8.6. TRANSMITTER AND TRANSMITTER IMPOUND

There can be 2 different kinds of transmitter:

- a) Transmitters with a crystal that can be changed. See rules 8.6.1 / 8.6.3 / 8.6.6
 - b) Transmitters using a software decoding system that seeks for a free channel. Anybody using these kind of transmitters cannot ask for a delay for radio interference.
- 8.6.1. Transmitters (as in 8.6 a) must be constructed in such a manner, that the crystal can be changed and all competitors must have at least one alternative frequency available. Voltage supply to the transmitter must not exceed the manufacturer's type approval or National authority recommendations. Any driver found to be using external or additional battery packs must have proof that it conforms to the radio manufacturer's specifications. No changes or additions are allowed on the antenna unless authorised by the original manufacturer.
- 8.6.2. Electronic driving aids : Steering and driving/brake can only be operated by direct action of the driver using the Radio. The use of traction control devices, active suspension devices and any steering control aided by gyroscopes or 'G'-force sensors is strictly forbidden. Sensors are only allowed for the purpose of passive data recording and not for adjusting the performance of the car whilst in motion. It is not allowed to use any form of telemetry with active transmission. Clarification: It is not allowed for any wireless signals to be transmitted from the car to an external source during the race that is judged to give the driver a competitive advantage during that particular race! Drivers found using any of the above forbidden items/devices will be subject to disqualification from the event where the items are used and can be banned from all EFRA and IFMAR events for a period of 5 - 10 years.
- 8.6.2.b) Radio communication is allowed between Driver and Mechanic.
Radio Communication Rules:
- a: Only designated public service bands with a maximum power output of 500 mW are allowed.
 - b: Radio communication can only be used by the driver their pit crew, only while their driver is on the drivers' rostrum for the duration of the race.
 - c: A single ear piece or one sided head set type that is not audible to others and does not reduce the ability to hear the referees' calls must be used.
 - d: All equipment must comply with the local & country radio communications rules.
 - e: Not allowed, any 2.4 GHz radio equipment.
 - f: Radio equipment cannot be used at any other time within or around the complex.
 - g: Race management has the right to test, decline or withdraw the use of any and all equipment without question.
 - h. The equipment must not be carried whilst marshalling.
- Note: Rules, b, c & f, do not apply to race management.
- 8.6.3. Spare transmitters must have the crystals removed and if possible must be kept out of the pits.
- 8.6.4. Transmitters may never be taken onto the track during racing.
- 8.6.5. Transmitters will be under the control of the Race Organisers.
- 8.6.6. At European Championships, the organizers must have the ability to verify that transmitters as detailed in 8.6 a) are operating correctly on the frequency that has been designated. EFRA will advise on any equipment that is needed.
- 8.6.7. Transmitter impound is not mandatory. It's up to the Race director in accordance with the EFRA representative to have an impound or not.

- 8.6.8 Should the Race Director and Organiser decide not to have a compulsory Transmitters Impound, then such decision can be changed following a request of at least 3 Team Managers present.
If a Transmitter Impound is not mandatory, then drivers can only switch on the transmitter when on the rostrum, or under supervision at Technical Inspection. In event of drivers marshalling, there must be a place next to the rostrum where they can place their transmitters while acting as marshals.
- 8.6.9. Transmitters are impounded immediately after a request by the Race Director or other Official. When impounded for the first time, transmitters are marked with heat-number or with identification number of the driver and are stored accordingly.
- 8.6.10. The transmitter impound must be close to or if possible on the rostrum. Transmitters must be protected against bad weather and stored in a safe and secure manner to prevent any damage to the transmitter.
- 8.6.11. Transmitters are only released for the next race immediately prior to the race start and must not be removed from the official area's or switched-on until the previous race has been declared finished. Transmitter-impound must take place immediately after the driver has completed his race or has finished driving and is leaving the drivers rostrum.

8.7. TECHNICAL INSPECTION

- 8.7.1. Admission Inspection must always take place in an area protected from intrusion and before the start of the first heat. Cars must be presented for inspection as requested by the Officials any time during the meeting. Random checks on technical specifications can be done during the whole race. During Technical Inspection only the Driver or Mechanic and the Team manager are entitled to be present in addition to Race Officials. Under all circumstances it is the responsibility of the driver that his car is within the EFRA rules during a race meeting. If a car is found illegal during heats, sub-finals or final, the drivers result will be made void and the car has to stay in technical inspection until the result is published and the protest time is over.
- 8.7.2. At European Championships admission inspection must take place before the controlled timed practice.
- 8.7.3. Technical inspection must include a thorough check-out of the car, weight limit, motor, muffler, tank, batteries, tyres, homologation of bodies, spoiler and overall dimensions. At European Championships, also of the transmitter (see 8.6.2.).
Any tank found illegal after a heat or final shall be removed from the car and inspected for a second time after an initial "cool down period" of app. 15 minutes. This period of 15 minutes is only necessary in case the temperatures are above 20° C. The use of artificial aids to cool the car, tank and/or the fuel in the cool down period is forbidden. Only EFRA approved equipment for measuring are allowed. Only for IC track: Any tank found illegal after a heat or final will remain installed in the car and inspected for a second time after an initial "cool down period" of app. 15 minutes. This period of 15 minutes is only necessary in case the temperatures are above 20° C. The use of artificial aids to cool the car, tank and/or the fuel in the cool down period is forbidden. Only EFRA approved equipment for measuring are allowed.
- 8.7.4. Only one car per driver per class will be accepted. When transmitters are checked, spare-transmitters may also be presented for inspection.
- 8.7.5. When a car or a transmitter does not comply with the rules, changes may be carried out before presenting it for final admission.

- 8.7.6. Cars which have passed Technical Inspection must be marked with the drivers identification number, consisting the registration Entry number. This number must be applied inside the chassis plate.
- 8.7.7. For each competitor the race has officially started after technical inspection and admission of his car.
- 8.7.9. At European Championships, all cars of finalists go into a "Parc Fermé", immediately after the finish of the final and are inspected. Cars must remain with the Officials, untouched by drivers or mechanics. Any race distortion must be ignored. Inspection must be at least on:
- engine (motor)
 - tank capacity (batteries)
 - battery-pack and weight
 - chassis (dimensions)
- 8.7.10. Point 8.7.9. may be applied at EFRA Grand Prix or other EFRA sanctioned races, but is not compulsory.
- 8.7.11. The marked part of the car, normally the main chassis, may be changed. This would be subject to any technical criteria detailed within each Section. The original marked part must be left with the organisers until racing has finished
- 8.7.12. If a car is found to exceed the limits of dimensions on checking immediately after a race positive proof of race damage may prevent disqualification. If a car fails to pass the technical inspection, the driver's result/time is only discarded from that heat. In a final, or sub-final, it will mean last position of that final.
- 8.7.13. The car shall be measured for width, length and height using equipment as detailed in each Sections Technical rules. The equipment should be constructed preferably from metal, or alternatively from high quality board suitably stiffened to prevent distortion.
- The car must freely fit such equipment with any steer able wheels set in the straight ahead position, and comply with any maximum dimensions due to suspension movement that may exist in the Section rules.
- The measurement of the wheelbase may be made by simple measurement of axle centre distances with suspension in any position but Race Directors should be prepared to make more exact checks in cases of doubt or protest. If is suggested that the wheels are removed and the wheel spindles are firmly placed on the blocks whilst accurate measurements are made.
- 8.7.14. The equipment used for technical inspection by the organiser must be made available to competitors at all reasonable times.
- 8.7.15. All lists of approved equipment, (i.e. Bodies, mufflers and batteries) must be available on EFRA's webpage from the 1st of March every year. This is the finale lists for this year and no changes will be made before the next year. Equipment homologated during the year will not be put on the list until 1st of March next year.

8.8. TEAM MANAGER MEETING

- 8.8.1. A Team Managers Meeting must be held prior to each race and per class. It must be held in English. The Race Director must call the meeting, Team-managers, Referees and other Officials must be present.
- 8.8.2. Team Manager meeting have to be completed at least 1 hour before the start of the first timed practice and the following points must be covered as a pre-race briefing:
- security and safety items;
 - starting procedure, explanation;
 - disciplinary questions;
 - other items concerning the contestants;

- changes in the organisation or procedures;
- presentation of the main Officials and Referees.
- details of the penalties that may be awarded and the circumstances that they will be awarded under.
- details of the number of mechanics etc. authorised to enter the pit lane during racing.

Team managers are links to distribute this info to their respective drivers All Team Manager Meetings must have its correspondent "distribution information time" advised to be 20 minutes.

8.9. FLAGS

8.9.1. If flags are used then: Starting flag: the national flag of the country where the race is held.

Finish flag: chequered flag.

Black flag: the car in question must immediately stop in the pit to receive instructions

8.9.2. The use of the black flag by the Referee (see 7.1.8.-9.):

- drivers who impede the progress of other participants;
- unsporting behaviour;
- participants driving in a manner deemed to be dangerous.

8.9.3. The use of the black flag by either the Referee or the Race Director (see 7.1.12..13.):

- Vehicles judged to be in an undriveable or dangerous condition; after repairs have been carried out and after the Race Director or the Referee have approved the repair, they may continue their race;
- Vehicles which lose their bodies or other parts must immediately stop and carry out the necessary repairs after which they may re-start.

8.9.4. The black flag is operated by the Flagman (Starter), who receives his instructions to do so from either the Race Director or the Referee. Under no circumstance may he use the black flag on his own authority.

8.9.5. No response to the black flag (verbal or physical) within three (3) laps will lead to disqualification of the concerned participant of the whole event.

8.10. PENALTY CAUSES

Time penalties should be awarded as stop and go penalties where possible. The Referee and/or Race Director should inform the driver and the penalty should be announced through the sound system and the driver should bring the car into the pit lane in the immediate next three (3) laps where it will stay the amount of time that the race organiser has decided depending on track layout. The 'stopped' time should be announced at the Team Managers Meeting. It will not be allowed any repair or refueling during the penalty being served.

In the case that there is no possibility to call a driver for a stop and go penalty (e.g. during the last 2 -3 laps of the actual heat or final), the Referee and or Race Director will announce that a time penalty of 10 seconds will be applied. (Large scale: 1 lap). When a 10 sec. penalty is applied, the Organiser will ensure the following criteria is applied:-

- 1) The competitor receiving the 10 sec. penalty will have his actual Race Time (time on track) reduced by 10 secs.
- 2) Organiser to check results to establish the time of the last lap using the Penalised Race Time.
- 3) The organiser will amend the published time for the penalised driver to show a time of -- "the number of seconds over his Penalised Race Time, added to the normal Designated Race Time for drivers not receiving a penalty".

Examples:- Designated Race Time is 10 mins. (600 sec.). Driver X receives time penalty of 10 Sec., therefore his Penalised Race Time is 590 sec.

- 1) X crosses the timing loop at 595 sec. at the end of lap 12. His corrected time will be published as 12 laps in 605 sec.
- 2) X crosses the timing loop at 589 sec. on lap 12. He can continue and completes lap 13 at 620, (31 sec lap).

His corrected time will be published as 13 laps in 630 sec.

8.10.A Penalties in time, laps or even disqualification issued by EFRA Referee:

- 8.10.1. Unsporting behaviour (see 7.4.);
- 8.10.2. Deliberate corner-cutting;
- 8.10.3. When a car is re-entering the race other than from the point at which it left the track (not in case the engine has stopped and has to be re-started. Then the car re-enters the race from the pits);
- 8.10.4. When repairs are made to the car other than in the pit area off the track;
- 8.10.5. If the car is pushed over the finish-line (must finish under its own power);
- 8.10.6. Not returning to the pits after finishing a race;
- 8.10.7. Driving in the opposite direction of the race direction at any time.

8.10.B Penalties in time, laps or even disqualification, issued by the Race Director:

- 8.10.8. If orders of Race Officials are not obeyed;
- 8.10.9. If acting contrary to the EFRA Rules;
- 8.10.10. If a driver changes his complete car for whatever the reason;
- 8.10.11. If a driver changes his frequency without permission of the Race Director;
- 8.10.12. If a driver does not return his transmitter to the transmitter impound immediately after the finish of the race;
- 8.10.13. Penalties in time or laps may be issued by the time-keeping Official in the case of early starts (see starting procedures).
- 8.10.14. The bad behaviour and deportment of any competitor or assistant person to a competitor during the whole event, which could injure the image of the sport, may become subject to National or International (EFRA) sanction;
- 8.10.15. All Warnings and penalties must be noted on the result sheet and on the result board for the drivers (preferably in red).

8.10.C Drugs

- 8.10.16. If drugs or alcoholic impacts a competitor, competitor mechanics or an Official, the penalties for a competitor will be immediate disqualification. An official and competitors mechanics will immediately be taken out of service.
- 8.10.17. Any driver, representative or mechanic behaving abusively may be expelled from the meeting (a meeting may be one or more days and consist of more than one event/class).
Any incidents that are likely to bring the sport into disrepute can be subject for further action from the Executive Committee.

8.11. PROTESTS

- 8.11.1. Only drivers participating in the race may enter a protest.
- 8.11.2. At European Championships a protest can only be made through the Team Manager.
- 8.11.3. Protests may concern:
 - the Organisation (act against the rules);
 - Officials (act against the rules);
 - Results (only when proof can be presented showing the result is wrong);
 - Other competitors (acting contrary to the rules to the disadvantage of the one entering the protest or the one the Team Manager is representing).
- 8.11.4. Only written protests, handed over to the Race Director within 20 minutes after

the publication of results of the heat or occasion to which it concerns, will be considered.

- 8.11.5. 100 € or equivalent in the host countries currency has to be paid to the Race Director, on behalf of EFRA, who will only then accept the protest. The time of receipt of the protest must be recorded.
- 8.11.6. The protest must contain relevant information for the Race Director to be able to discuss the protest and decide.
- 8.11.7. The Race Director together with either the Referee(s), the Timekeeping Supervisor or the International Jury, will deal with the protest and decide. This decision is final.
- 8.11.8. The decision must be made within 30 minutes after the acceptance of the protest. Only for important reasons and when the International Jury has to meet, may the decision be delayed to 60 minutes max.
- 8.11.9. When a protest concerns semi- or finalist, either the decision must be taken 10 minutes before the start the latest, or the start must be delayed until 10 minutes after the decision.
- 8.11.10. After the final race, there will be a "protest period" of 20 minutes after the provisional results have been published in writing on the score-board. For this purpose, the publishing time of the provisional results must be noted down on the result-sheet. During these 20 minutes, protests against the results may be presented to the Race Director who will then act according 8.11.7 and 8.11.8. If no protests are presented within the 20 minutes "protest period", the provisional results become official and final and may be announced.
- 8.11.11. Appeals to EFRA against the decisions of the International Jury may only be made if submitted to the Race Director in writing with a further appeal fee of 500 € (or equivalent) before the end of the event.

Appeals are only allowed against decisions of rule interpretation or of decisions made by the international jury after protest and not the fact of rules (see rule 7.4.6).

In cases where the international jury has adjudicated in cases of protest the decision of the jury is maintained until the appeal is considered.

In cases where the international Jury has made an interpretation of the rules the decision is suspended pending consideration of the appeal.

Appeals against the decision of referees shall also be made in writing to EFRA (see rule 7.1.22) and will not alter or interfere with the race in progress and will not suspend any decision of the referees.

Appeals to EFRA must be considered at the next Executive committee meeting or before the next AGM and are always to be considered as final.

- 8.11.12. If protest is upheld, the protest-fee of 100 EUR must be remitted immediately.
- 8.11.13. The Race Director may, without a protest being made, correct results which he may deem necessary, after consultation with his organising staff and referees.
- 8.11.14. Protests against the decisions of the Referee, concerning the racing, are not possible. The Referees decisions are indisputable (see 7.1.21 and 22).

8.12. LAP COUNTING PROCEDURE

- 8.12.1. At EFRA sanctioned events, the lap counting is to be done automatically by means of an automatic lap counting system and a transponder fitted inside the cars body shell. All competitors must supply their own Personal Transponder and are responsible for ensuring that the organizer is advised of the unique number.
- 8.12.2. The fitting of the correct transponder inside the cars body shell, and ensuring

- it has adequate signal strength is the responsibility of the driver.
- 8.12.3. If a driver loses the transponder during the race, or if a transponder malfunctions after starting the race-clock, the lap counting supervisor must try to count the laps and time manually. If a competitor chooses to use a transponder which is not the same manufacture of the timing decoder being used, then the competitor must accept full responsibility for any laps or times that are not recorded. In such cases, the time-keeper is not required to perform a manual count or adjust times, but may do so at his/her discretion.
 - 8.12.4. If a driver forgets to fit the transponder during the race, the Race Director and the lapcounting supervisor will decide whether the laps are counted or not. There is no appeal against their decision.
 - 8.12.5. Transponders must be moved to a better position in the car on the race-directors instruction, if lapcounting problems occur. Failure to comply may result in lost laps.
 - 8.12.6. It is the responsibility of each competitor to ensure that no parts of his racing equipment generates any form of signal that in any way interferes with the automatic lap counting system. If it is proven, that interference is being caused, the Race Director must instruct the driver to modify the offending item and if this does not prove possible, the driver will be excluded from the racing.
 - 8.12.7. The result of a heat, subfinal or final should consist of the number of laps and the time of the last finish line passing in minute, seconds and 100 of seconds.
 - 8.12.8. The organiser of EFRA events must put a minimum of screens in the pit lane, boxes and visitors area in order for everyone to be able to follow the races on site.

8.13 PRIZES AND PRIZE CEREMONY

- 8.13.1. Immediately after the finish of the race and before the drivers leave the drivers rostrum, the unofficial winner must be declared for the public and a symbolic first place award is presented. This award must be returned to the organisers immediately after the unofficial ceremony.
- 8.13.2. Immediately after the official result is published, the prize-ceremony must be held.
- 8.13.3. Winners are not entitled to claim prizes by right.
- 8.13.4. Prizes must be announced in the race-program. The actual prizes must correspond with the prizes as announced. They must be of a reasonable value according to the standard of the race.
- 8.13.5. Cash prizes or any other means of payment (paper tickets or coins of an obvious exchangeable value) are strictly forbidden.
- 8.13.6. Gifts not exceeding the price of an one-eight scale car kit may be given.
- 8.13.7. EFRA will award the first three drivers of each official European Championship with a golden (first), silver(second) and bronze (third) medal.
- 8.13.8. The best driver under 17 years will also receive an EFRA award.

8.14 EVENTS ORGANISED BY ASSOCIATED MEMBERS

- 8.14.1. Events organised by associated members under endorsement of EFRA may not be subject to prize money or to starting premiums.
- 8.14.2. Applications for such events should be sent to both the President and the Secretary of EFRA at least 6 months before the start of the event
- 8.14.3. Such events may not have the title nor be referred to as Grand-prix, European or National Championships.
- 8.14.4. At least one official EFRA representative must be present. EFRA does not pay any expenses and all costs are to be supported by the organising associate member. This EFRA representative will be integrated in the officials listing and

have the right to be present at all meetings and have access to all parts of the premises as an observer and auditor.

- 8.14.5 The relationship between the associated member and EFRA shall be that of independent identities for all purposes, and in no event shall persons employed by either party be held or construed to be representatives of the other.
- 8.14.6 Racing formats and classes may be different from those described in the EFRA handbook. The parts of the EFRA rules that will be applied should be clearly stated as well as the deviations on technical rulings. However the parts in the EFRA handbook referring to Legal liability, safety, security, conveniences, frequencies and drugs can under no circumstances be waived as being part of the rules fully in force.
- 8.14.7 The organizer accepts full responsibility for all necessary authorizations and to comply with local laws and regulations. The Associate organiser at its sole cost and expense shall procure and maintain during the term of this event with insurers of recognised responsibility for all insurances needed policies with adequate coverings.
- 8.14.8 Whenever prizes in merchandise are given they must be spread over at least 15 participants and have to be comparatively within reasonable proportion to each other
- 8.14.9 The Associated member will defend, indemnify and hold EFRA harmless from and against any and all liabilities, damages, losses, claims, fines, penalties, assessments, demands, actions, suits and judgments, including all fees, costs and expenses incidental thereto, that may be charged to, asserted against or incurred by EFRA by reason of any loss, damage or injury of any kind or nature whatsoever in any manner or to any extent resulting from or arising out of the articles or services covered by the endorsed event except to the extent resulting solely and directly from EFRA's gross negligence or wilful misconduct.
- 8.14.10 EFRA Registered drivers are allowed to participate at events organised by EFRA Associated Members, but their EFRA International Registration may be withdrawn if they participate at International events not recognised by EFRA. Note: The valid EFRA Section Chairman is the only person that has the right to determine events not recognised. His decision is final and cannot be protested.

8.15. MARSHALLING

Positions for marshals must be spread equally around the track and may not obstruct the vision of the drivers.

The positions must be numbered. When a position is located at a dangerous part of the track (i.e. the straight or a fast corner), this position must be equipped with protection for the Marshal (a wall, tyres, a gate etc.).

The marshal's position must be furnished with gloves and/or other protection and a safety jacket which is compulsory to wear. For IC events, it is mandatory (safety reasons) that the marshal position is also equipped with a plastic or wood baton as an aid to kill a running engine.

- 8.15.1 Only drivers taking part in the competition may and must marshal the heat following their own, (subject to 8.15.4). The first heat will be marshalled by the drivers of the last heat.
Other than running marshals, all other marshals must remain at their posts until replaced. No other persons, except officials are allowed on the track while the race is in progress.
- 8.15.2 Failure to marshal or provide a competent substitute will result in the loss of the driver's best qualifying time if qualifying by Fastest Time is in operation. The loss of the best points score will be the result if qualifying is it is by the Round by Round system.

If competitors are required to marshal Finals, then failure to marshal in a Final will result in being placed last in the appropriate Final. Failure to marshal is clarified as: not being at the correct marshalling point 30 seconds prior to the start of a controlled practice, qualifying heat or final.

A substitute marshal is only allowed if the driver is physically disabled

- Notification of the substitute must be made to the Race Director prior to the start of the race which the driver is racing in.
- If a substitute is being used for the whole event, notification must be made prior to the beginning of the first Time Practice Round.
- The driver who is substituted must stay at the Race Director's disposal in a designated area (not in the pit) up to the end of each race where he is substituted.

Failure to comply with these provisions will result in the same losses as if a driver does not comply with his marshalling duty. Designated marshals who repeatedly fail to marshal will be excluded from further participation at the event on the basis of Unsporting Behaviour and their Federation will be informed to take corrective action.

- 8.15.3 The organisation of drivers marshalling for the final will be the responsibility of the organiser. The main system for such will be the following one: For finals, large teams provide the most marshals, maximum 2, smaller teams 1 and very small teams none (but may volunteer to help). Marshals will be allocated designated points. Team Managers to ensure that these points are covered at all times by drivers. Only drivers taking part in the competition may and must marshal finals unless a substitute is allowed by the Race director due to physical disability. Alternative secondary systems like: Each driver taking part in a final must provide a marshal for his car number position or Drivers not bumping-up to the next sub final will marshal the positions of their car number in the immediate next sub final (descent from rostrum and go to marshal), or the driver marshal the precedent final on his side of the Christmas tree with the non-filled spots to be covered by the club can be used following a decision made by the Race Director together with the referees and the Section Chairman if present.
- 8.15.4 The organiser must provide a marshal for any unfilled position i.e. previous heat had less drivers or marshals missing.
- 8.15.5 It is the Team Manager's responsibility to ensure that drivers marshal finals. Country allocations will be decided pro-rata. Team Managers who do not fulfil their duties regarding the organisation of marshals will be reported to their Federation with the intention that they are not nominated at future events.
- 8.15.6 For large scale racing Marshals are not allowed. Mechanics will act as Marshals out from the pit lane. This rule cannot overrule national insurance regulations.
- 8.15.7 All marshals must wear safe and sensible footwear that will not become detached when performing marshalling duties. (Sandals are not acceptable).

9. STARTING PROCEDURES

- 9.1. Purpose of the EFRA qualifying system is to create more equal chances for the drivers.
- 9.1.1 The Race Director will appoint a suitably qualified person(s) to perform the duties required by Race Control in respect of all procedures required for the operation of the timing software and a Start Official to be responsible for the start and finishing procedures of all cars in Qualifying and Finals.
- 9.2. Starting procedure for qualifying It can be either:
- a. Staggered Start: All cars are released one by one by the starter at an interval of approx. 1 second (track lay-out depending). Missing the starting procedure means that the car has to start his race from the pits or the starting line after the last car has started from the designated starting area.
 - b. Flying Start: Cars will be driven at the track from the moment the track is declared "Open" for practice or warm-up, there will be no call for starting procedure. The Start Official will give a 2 minutes warning to the start, this will be announced through the sound system, you will also get the time "1 minute to the start", "30 seconds to the start" and "10 seconds to the start". An audible signal and the mention "clock is running" will indicate that the heat has started. During this procedure timing cant be adjusted.
- Common conditions: Each car will have its own timing. The total time will be the one designed in each class appendix.
- 9.3. Staggered Start: Timing/counting starts for each car separately the first time that car passes the start-line. For any cars not starting when directed, the latest that their individual clocks will be started is when:- Either:
- a) Any of the cars complete a full lap. Or:
 - b) Maximum one (1) minute after the designated first car was called to start.
- The actual starting position has to be a few meters before the start-line.
- Flying Start: Timing/counting starts for each car separately the first time that car passes the start-line or as maximum as when a 150% of a standard lap-time for the track has passed since the clock is running.
- 9.4. The position of the lap-timing antenna (loop) within the track at EC events must have the approval of the EFRA Section Chairman (or the EFRA appointed deputy).

10. RULING

10.1 PRECEDENCE

- 10.1.1 As long as appendix rules concerning specifications and race procedure do not clash with EFRA's spirit regarding fair racing they take precedence over the general rule governing the same item.

APPENDIX 1

1/8th and 1/10th SCALE I.C. TRACK CARS Combined

1. ALLOCATIONS FOR EUROPEAN CHAMPIONSHIPS.

- 1.1. The allocations for the EFRA European Championships 1/8th. and 1/10th. 200 mm scale will be established by the section meeting and published in the minutes.
- 1.2. For allocation and re-allocation procedures see Gen. 3.6. and 6.2.
For BOTH CLASSES: Allocations will only be offered for EC and WC events to those member countries that have written to request places.
- 1.3. All countries receive re-allocated places in the order of the Allocation-list, unless stated otherwise in this list.
- 1.4. The number of entries for EFRA European Championships is 100 with a maximum of 120. Accommodations for at least 100 drivers must be available. If the number of entries exceed 100, the accommodation must be sufficient for all participants.
- 1.5. Applications for all EC's must be done in writing by using the applications forms to be presented at the annual AGM section meeting.

2. RACING FORMAT EFRA EUROPEAN CHAMPIONSHIPS AND GRAND PRIX.

- 2.1. European Championships are held in following classes:
 - a) The European Championship Sportscars/GT-P/Group-C ECA and ECB will be held on the 4th weekend of July. The European Championship 1/10th Touring Car Sedan bodies ECA and ECB will be held on the 3rd weekend of August. In the year there is an IFMAR World Championship outside the EFRA Bloc, dates between EC and WC must be separated with at least 4 free weekends between the finals. In the years there is an IFMAR WC in the EFRA Bloc, there will be no EC-A (see schedule IFMAR, www.ifmar.org).
It will be open to 64 drivers in the following order: current World Championship (if European) in 1/8th IC on road and 1/10th 200mm IC, current European Championship in 1/8th IC and 1/10th 200mm IC, 25 EFRA A drivers and 35 drivers (or numbers of drivers necessary) to complete 64 allocations. 35 drivers will bump up in Controlled Time Practice during the event. One special EFRA medal will be awarded to the fastest driver under 17 year in each class. So, everybody of 16 years during the race dates, or younger can compete for this medal. One trophy must be awarded by the Organiser for each class.
 - b) The Euro B 1/8th Sportscars/GT-P/Group-C will be open to: All drivers who want to attend the race, except drivers who have been included in European Championship "A". The Euro B for 1/10th will be open for: All drivers who want to attend race except drivers who have been included in European Championship "A". For both classes: The winner of the B-EC will become EFRA 'A' driver immediately and will retain A-Registration for 2 years.
 - c) The EFRA ranking list is based on the overall result of the EFRA GP Series. The total result of this list will decide upon A and B driver just before European Championship.
 - d) European Championship 1/8th Track 40+ and 1/10th 200 mm 40+. This will be one combined event. EC 40+: Open to all drivers of 40 years, including those who become 40 that year and older.
 - e) EFRA GP series. EFRA GP Series will be held in the first part of the year (March-June). Minimum 2 and maximum 3 GP's will determine EFRA A and EFRA B drivers. The first 25 drivers will be EFRA A drivers, the rest of the

drivers will be EFRA B drivers in the current year. EFRA GP series (1/8th and 1/10th 200mm) are run in combined events. EFRA GP meetings will use the points system, with the drivers best 2 meetings out of the 3 to count. If EFRA GP series is held with only 2 meetings, all the races will count. EFRA GP series will follow GP point system (see 3.3.6). To solve Overall Result of the EFRA GP SERIES in case of tie, driver with single highest finishing position in either of the best Rounds that counted will be awarded the tie (1+3=4 beat 2+2=4). If tie continue then discarded round will solve the tie.

f) **NATIONS CUP.** At every European Championship A EFRA will hold a Nations Cup, with drivers competing as a team representing their countries. When race is over, the best two (2) drivers of each country will represent their country at this Nations Cup. Both results will be added together by points (according to the rule 3.3.6) and give the result of their National Team.

2.2. Free practice for an EC is only allowed from the Wednesday preceding the Race. It will not be allowed for competitors in the event to practice for 10 days before this Wednesday (see also Gen. 8.1.). For 1/8th and 1/10th due to A&B held at the same event: Pit lane refuelling may be forbidden during free practice at an EC if it is necessary to facilitate a quicker turn-around of drivers (every five minutes).

2.3. Free practice for Grand Prix events must be allowed at least from Friday preceding the event (see Gen. 8.2.).

2.4. General Qualifying format for EC's and GP's:

5 Rounds of Qualifying will be run, irrespective of the number of drivers. Qualifying is 4 minutes + last lap for 1/8th and 1/10th. A point system will be used to establish the qualifying result. The number 1 ranked driver after completion of the qualifying heats will move up directly to the main final and take the pole position on the starting grid. The drivers ranked 2nd to 5th will compete in a 'super-pole' final after completing the last Round of Qualifying.

Super-pole: Drivers ranked 2nd to 5th will drive the 'super-pole' individually on the track, for 6 consecutive laps including warm-up on controlled tyres. Procedure for Super Pole will be: 5 minutes warm up all participants together to clean the track. Then, one by one 3 minutes warm up for each driver in flying start system, and 6 consecutive laps. (Remark: when warm up time is over and driver cross the starting line, he cannot enter in the pits).. The 'super-pole' running order will be 5, 4, 3, 2. The driver that scores the fastest lap will also move up straight to the 'Main' Final and take the second position on the starting grid.

The other drivers from the 'super-pole' will start in the semi-finals as per qualifying ranking. Depending on time available all finals higher than 1/64th can be shorter than 20 minutes (for instance 10 minutes).

See also 2.6 The number of Rounds to count is as follows:

1 Qualifying Round completed	1 by laps and total time.
2 Qualifying Rounds completed	1 best by laps and total time.
3 Qualifying Rounds completed	2 best point scores to count.
4 Qualifying Rounds completed	2 best point scores to count.
5 Qualifying Rounds completed	3 best point scores to count.

Any Qualifying Round has to be completed for any Heats in that Round to be awarded points that count. Fastest competitor (based on laps & time) in each Round will score zero (0) points, second place 2 points, third place 3 points, fourth place 4 points etc.

If two (or more) competitors achieve an equal time in any Round they will be awarded equal points. The next competitor not included in the tie will be awarded points corresponding to his position in the particular Round.

(NOTE: drivers not recording a time or having a time disqualified in any Round score points for last place in that Round)

Overall Qualifying positions are decided by each driver 'best' (lowest) points being added together, based on the number of Rounds to count as shown in above table. In the event of a tied position, the driver with the single highest finishing position in either of the best Rounds that counted will be awarded the tie (e.g. 1+3 = 4 beats 2+2 = 4). In the event of a continuing tie then the laps and times from the best points Round will be compared. The driver with the fastest laps and time will be awarded the tie. In the case of a continuing tie, then the times from the second best scores will be compared. Only counting Rounds will be used to decide Qualifying positions (or ties), all other Qualifying Round scores and times will be discarded.

If the intended maximum number of Rounds cannot be completed, due to weather or unforeseen circumstances, the number of Rounds to count will follow the same format as the table above.

Rain procedure: Only rounds ran under the same conditions will count. Same conditions means: no differences in average lap time by more than 20%. The Race director together with the referee will make the final decision.

- 2.5. The time schedule should not be rigid but adapted to the number of entrants. As a guideline at EC's with 100 or more entrants the schedule should be as follows:

Wednesday: Free or Controlled Practice

Wednesday & Thursday: technical inspection All cars must pass technical inspection before Controlled Timed Practice.

Thursday: Controlled Practice, Controlled Timed Practice and Qualifying 1 & 2 in the afternoon.

Friday: Qualifying Rounds 3 to 5, 'Super-pole' (for 2,3,4 and 5 Top Qualifiers), lower finals up to 1/64.

Saturday: 1/32 upwards, 1/16th, 1/8, 1/4 final; Practice 2 direct Qualifiers, 1/2 final, final.

For EFRA GP series as a guideline:

Friday: Free or controlled practice.

Saturday: Controlled practice, Controlled timed practice, Qualifying and 'Super-pole'.

Sunday: Finals

The time schedule and the number of heats can be adjusted by the race director with agreement from the EFRA representative due to weather and unforeseen conditions and the number of total drivers at the event.

For EFRA European Championship, the race director should seed the Controlled Practice heats, Controlled Timed Practice heats based on the EC from last year.

For EFRA GP series, the race director should seed the Controlled Practice heats and Controlled Timed Practice heats according to last EFRA GP series meeting.

The heats shall contain a maximum of 12 drivers. These Controlled Practice heats will be of 10 minutes duration. The Controlled Timed Practice heat will be of 4 minutes duration. The ranking from controlled timed practice will be used to make the heats for the qualification heats. The schedule of all practice heats including each practice heat starting time will be carried out by the organisation of the event and it should be given to the Team Managers (only in EC) & published for general knowledge.

- 2.6. General format for sub-finals and main final at EC and GP:

The lower finals are 20minutes up to 1/64 finals. Time for all finals higher than 1/64th to be set at team managers meeting. The duration of the main final is 45 minutes.

Sub-finals: The best 3 in each sub-final move up to the next final.

Semi-finals: The best 3 in each semi-final move up to the main final, plus the best 2 remaining drivers from the 2 semi-finals combined. When racing conditions are different in the two semi-finals, the best 4 of each semi-final move up to the main final.

Starting order for the drivers who moved up to the main final is based on number of laps and time for positions 3 to 10. In different circumstances it will be number 1 from the A semi-final who gets the number 3 and the number 1 from the B semi-final who gets the number 4 etc. Semi-final B is the first final to start on the Saturday afternoon.

After Practice direct Qualifiers cars (TQ and Super Pole winner), both cars must be kept in Parc Ferme. Additionally, after the first semi-final all cars will be put in Parc Fermé in technical inspection and they will be released after completion of the technical inspection of the 2nd semi-final. This will give all drivers that proceed to the final equal time for preparation.

2.7 During the race 2 (two) mechanics are allowed in the pit lane.

2.8 When the Qualification has been completed, the TQ, winner of super-pole and the drivers of car number 1 of Semi A, and car number 1 of Semi B must do a press interview with the cars (not only with the body) in a place that the organiser must prepare on the track. This place must be equipped with a table with an EFRA MEMBERS banner and chairs for the drivers. The EFRA official media partner will have preference for the first 5 questions. When the main final has been finished, we will have the same procedure for the 3 first drivers in the final, when the result has been declared official for the race director.

3. TRACK SPECIFICATIONS

3.1. Track surface should be unsealed asphalt or coarse finish with any joints smoothed.

3.2. Minimum length must be 200 metres (advised 240-300 m.).

3.3. Minimum width of the track will be 4 m. between marking lines. (advised for new tracks 4 m between the marking lines). The maximum width is 6.50 m. The marking lines must be 8-10 cm wide and either white or yellow. They must be approximately 20 cm away from the edge of the racing surface.

3.4. Maximum distance from the middle of the drivers rostrum to the furthestmost point of the track must be 60 metres.

3.5. Vision: no obstacles may interrupt the vision from the driver's rostrum to any part of the track.

3.6. A broken line may be drawn in the middle of the straight to aid vision. No lines may be drawn in corners other than the outer marking lines.

3.7. The refuelling and pit area should be clearly distinguishable from the main track and as close as possible to the drivers' rostrum. Exit from and entrance to the main track is advised to be on a slow part of the track.

3.8. Track design must include both right and left hand turns and must have a straight of minimum length 45 metres.

3.9. Outside barriers must provide a positive means of stopping a car which misses a corner or runs out of control. The primary consideration for selection of the outside barriers shall be the protection of the spectators and not the cars.

3.10. Inside barriers must deter corner-cutting and prevent cars reaching other parts of the track. Inside barriers must be positioned and dimensioned to prevent cars from flying over the outside barrier into the public enclosures. The barriers must be smooth. When cones or dots are used, they should not be higher than 5 cm.

3.11. Barriers must be a minimum of 20 cm away from the marking lines on the track.

- 3.12. The inner and outer surrounds to the track must be of grass or other suitable materials such as concrete. The object of these surrounds is to slow down any car that leaves the racing surface. The car must be able to leave the infield or outfield unassisted to minimise the need for Marshall's assistance. Marshal posts must be positioned at 30 m intervals around the track. They may not obstruct vision of the drivers. The post must be numbered. When a post is located at a dangerous part of the track (i.e. the straight or a fast corner) this post must have protection for the marshal (a wall, tyres, a gate, etc.).
- 3.13. A start/finish line must be painted across the track, preferably in front of the time keeping position. The first start line box must be located more than 10 m. away from the following corner.
- 3.14. Only a Le Mans type of start will be used. For Le Mans type of starts, 10 numbered boxes will be located on the edge of the track, at an angle of 20-45 degrees to the track, min. 3m. and max. 4m. apart. The boxes must be 70-100 cm long and 30-40 cm wide.

4. RACE PROCEDURES 1/8 & 1/10:

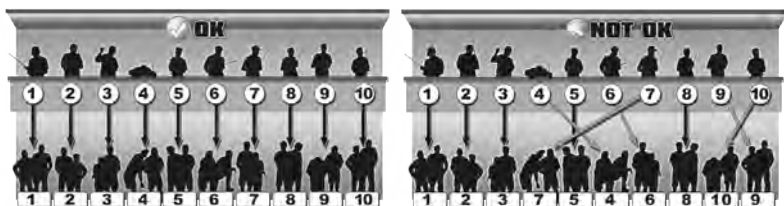
4.1: CONTROLLED PRACTICE AND CONTROLLED TIMED PRACTICE PROCEDURES for all EFRA races:

All practice in EFRA races will be defined with the best result of 3 consecutive laps of the driver. The result will be used in the following procedure:

For EFRA GP series: The race director should seed Controlled Practice and Controlled Timed Practice according to the last meeting of the EFRA GP series. Controlled Practice shall contain a maximum of 12 drivers. These Controlled Practice heats will be of 10 minutes duration. The Controlled Timed Practice will be of 4 minutes duration. The arrangements of the Qualifying heats and the numbering will be defined with the best result of 3 consecutive laps of the Driver, made during 2 controlled timed practice runs.

For EC's: The race director should seed Controlled Practice and Controlled timed Practice according to the EC from last year. Controlled Practice shall contain a maximum of 12 drivers. These Controlled Practice heats will be of 10 minutes duration. The Controlled Timed Practice will be of 4 minutes duration. The results of the Controlled Timed Practiced will determinate allocations to participate in the EC A. This ranking list will not consider drivers who are classified directly in the EC A (25 first drivers for EFRA GP series, current WC 1/8th if European, current WC 1/10th if European, current EC 1/8th and current EC 1/10th). The total amount of drivers for EC A will be 64. Rest of the drivers will race in EC B. EFRA Section Chairman together with Race Director and Referees have the right to switch drivers from Euro B to Euro A under justified situations (deliberate slow down, weather conditions, etc.).

The drivers must stand adjacent to their numbers on the rostrum; the mechanics must remain in their boxes along the pit lane. For all finals, drivers with the lowest starting numbers may choose their position on the rostrum and the mechanics must stand under the driver where this is possible or in the same order.



4.2. STARTING PROCEDURE OF HEATS

Starting for qualifying heats will be from the start line or pit lane, using the staggered start system (one by one). In each Round, the order of starting Heats will be as follows:

Round 1-- 1,2,3,4,5,6,7,8,9,10

Round 2-- 4,5,6,7,8,9,10,1,2,3

Round 3-- 7,8,9,10,1,2,3,4,5,6

Round 4-- 10,9,8,7,6,5,4,3,2,1

Round 5-- 6,5,4,3,2,1,10,9,8,7

4.3. Qualifying.

All Qualifying runs and Finals are run by "time plus completion of lap" system. Qualifying heats are 4 minutes duration. For duration Lower Finals and Main Final see 2.6. The use of a personal transponder is mandatory.

When the time is over, an audible signal is given. A car finishes when it passes the finish line after the finish-signal is given. The car must immediately return to the pits and may not hinder other cars still racing.

In case of doubt (on the finish-line when time is over), a car may race one more lap and finish. Whether he finishes or not when time was completed, is up to the Time-keepers and cannot be disputed.

After returning to the pits, the engine must be stopped immediately and the transmitter turned off and impounded if needed.

4.4. Qualifying, staggered start system:

Qualifying, staggered start system:

1. There must be a minimum 3 min. gap between the end of one heat and the start of the next heat. Also, a minimum of 2 minutes must be allowed between the issuing of the transmitters and the start of the heat.
2. An audible warning will be given at 1 minute and again at 30 seconds prior to the official start, in English and other languages as appropriate.
3. From 30 seconds until 3 seconds the cars must be held at the starting boxes (this could also be the pit lane). If a car is not at the starting box at 3 seconds (due to unforeseen problems) the car may start from the pit lane after other cars have officially started. The race director and referees will monitor for the abuse of this procedure.
4. Cars are released in the right order for the Round by the starter.

4.5. RAIN PROCEDURE DURING QUALIFYING:

1. The Race Director and the Referees are jointly responsible for the decision to stop a race in the event of rain.
2. On the result sheets the Race Director or the appointed official must mark a heat 'WET' when the heat was raced under wet conditions (20% differences in lap times). On the corresponding record sheets, this must also be marked. The Race Director together with the Referees will decide in case of any doubt. Heats are generally considered to be 'WET' when there is any rain or moisture on the track and it is obvious to the Race Director that the cars cannot perform to their maximum capability. The Race Director may decide to postpone qualifying if it is likely that qualifying can be resumed within reasonable time.
3. Due to the points system and when weather and time permits, the Race Director must try to complete as many Rounds as possible under equal circumstances.
4. When continuation is judged to be senseless, or when other drivers should be offered a fair chance to drive under dry conditions, the Race Director

- together with the Referees may decide to end a heat or cancel a complete heat. (4.8.1.).
5. When 1 Round is finished under dry conditions, the Race Director can postpone the qualifying until the track is declared fully dry again. If it is likely that this will interrupt the qualifying for more than 1 hour, the Race Director may decide to open the track for controlled practice.
 6. In case of interruption due rain situation when a round of qualification is running, all this ROUND of qualification will be discarded.
 7. When race director declares the race to be wet, a second car can be used as a rain car in same conditions like in sub-finals and final (see 4.8).
- 4.6. Qualification Order and Finals.
1. After all Qualifying Rounds have been completed the Qualification order is established, by taking the total counted points result of each driver.
 2. In case of more than one driver recording identical best results of qualifications the next best result is taken.
 3. In the case of more than one driver recording identical results in a Final, the driver starting with the higher start number is classified as the faster, e.g. if number 5 and 2 have equal times, 5 is deemed to have the higher final placing.
 4. The Sub-Finals and Main Final are run according to the schedule printed in the official race program, which may only be changed by a team managers majority vote.
 5. After all Sub-Finals and Main Final are completed, a final result list is prepared based on laps and time, bearing in mind the Sub-Final order. In case of rain see 4.7.=
- 4.7. STARTING FOR SUB-FINALS AND FINAL
- Starting for sub-finals and final will be on a 'Le Mans' type grid, with the faster Qualifier starting in front of the slower. Finals, Le Mans start grid:
1. There must be a minimum 3 min. gap between the end of one final and the start of the next final. Also, a minimum of 2 minutes must be allowed between the issuing of the transmitters and the start of the final. For the main final the warm up time will be 5 minutes in any case.
 2. An audible warning will be given at 1 minute and again at 30 seconds prior to the official start, in English and other languages as appropriate.
 3. From 30 seconds until 10 seconds countdown the cars must be held at the starting boxes. If a car is not at the starting box at 10 seconds countdown (due to unforeseen problems) the car may start from the pit lane after other cars have officially started. The race director and referees will monitor for the abuse of this procedure.
 4. For all finals, from 10 seconds until 3 seconds prior to the start, a second by second countdown will be made in English.
 5. For Le Mans Grid Starts: at 5 seconds prior to the start, the Starter will lower the starting flag and at 3 seconds the flag will be fully down. At this point, all cars must be released by the mechanics, who will all step back 1 meter. The cars must remain in the boxes, no part of the car touching the starting line.
 6. From 3 seconds; the verbal count-down stops and the actual start-signal will be given by the Starter after a period of between 0 and 5 seconds has elapsed. If the grid is not to the satisfaction of the Starter, he may require a restart, re-commencing with the count-down from 30 seconds.
 7. The official start signal will be audible by means of a 'hooter' (computer

operated signal), operated by the Starter/Timekeeping supervisor. This signal will also start the Timing Systems.

8. Jump-starts, (i.e. any part of the car touching the starting line) will be penalised with a 'STOP and GO' penalty. The time for this 'STOP and GO' has to be set at the team managers meeting before the actual race starts and will have a maximum of 10 seconds. This penalty is issued by the Starting Official, Race Director or the Referee and must be announced immediately after the start. The penalty will be marked on the result-sheet.
9. Under no circumstances will the race be stopped due to a jump-start.
10. The Starter may only interrupt the race and make a restart in the event that he considers the starting procedure, or the start was not carried out correctly.
11. Delayed start: Providing the starter has not called 30 seconds (the trial lap, see 4.3 is part of the procedure after 30 seconds) for the cars to the start line, any participant of the semi-final and final may request a delay of 10 minutes to carry out repairs on his car. This delay can be granted only once for each semi-final and the final. The track must be open. When 10 minutes timeout are finish, time keeping will call for 2 minutes to start. Any driver asking for a delay will start from the end of the grid (11th position to be painted on the track) or from the pit lane in case he is not within time at the grid.

4.8. RAIN PROCEDURE Sub-Finals:

In case of different weather conditions during Sub-Finals, the final classification will be as follows: Place 4 of Sub-Final A and Place 4 of Sub-Final B will both be awarded place 11th equal in the general classification. Place 5 of Sub-Final A and place 5 of Sub-Final B will both be awarded place 13th equal in the general classification and so on...

WET CAR: When a race director declares the race to be wet, a second car can be used as a rain car. This car cannot be used (shared) by another driver/s in the same event. The rain car has to be scrutinised and be visibly marked as a rain car (different colour or different sticker/marks) in due time before it is used. One rain car cannot be marked for several drivers. Multiple marking of the chassis is not allowed. Removing of existing marks to mark the chassis for another driver is not allowed and will be seen as violation of existing regulations. This rain car can only be used in wet conditions and not in dry conditions. This car cannot be used when the heat or final has already started. Once you start (in time) with a rain car you must finish with this rain car.

4.9. RACE INTERRUPTIONS:

1. In the case of a race which is interrupted for more than 60 minutes for reasons beyond the control of the organisers (bad weather conditions with safety risks for all persons at the meeting), the referees together with the Race-director will decide whether to cancel or continue the meeting.
2. In the case of an interruption of a heat the entire heat will be re-run.
3. In the case of an interruption of a sub-final or main final the following procedure will be used:
 - A. If less than 10 minutes of a final has been run, the results will be cancelled, and a new start given for the total time of the final. Vehicles may be repaired before the new start.
 - B. If more than 10 minutes of the final have been run, the results at the moment of the interruption will be kept. The new start will be given for the time which remains to complete the final. Vehicles may not be

repaired before the new start. The two results will be added to give the final and definitive placing. If the second start cannot be made for any reason, the results from the first part will be used as the final and definitive placing.

- C. When the interruption takes place after 75% or more of the race is past, the results as at the time of the interruption becomes the final result. At the moment of the interruption of the race, the drivers will leave their vehicles on the start-line under the control of the Race Director. They may switch off the radio and stop the engine. There will be no repairs carried out to the vehicle or changing of tyres. Any driver who does not observe this rule will be immediately disqualified.

5. GENERAL TECHNICAL SPECIFICATIONS

All measurements referred in this appendix are minimum or maximum values. All measurements for the motor dimensions to be considered with 2 digits behind the comma, all other measurements to be considered 1 digit behind the comma. Measurements must be within their maximum or minimum values under all Circumstances.

5.1. TYRES/Rims:

Tyres must be black, except for writing on the side wall (exceptions only after EFRA agreement). Foam and/or rubber tyres can be used. Treatment of tyres with any type of additive is strictly not allowed.

TYRE DIMENSIONS FOR 1/8th. :Maximum width of rear tyre: 64.0 mm.

TYRE DIMENSIONS FOR 1/10th. :Maximum width of front & rear tyre (across side-walls): 31.0 mm.

5.1.1 SPECIFICATIONS FOR CONTROL TYRE

Definition of Control Tyre: 1 set (front and rear), 1 brand, 1 diameter front, 1 diameter rear, 1 shore for front and 1 shore for rear.

A Control tyre is mandatory for: Controlled time practice (which are used for seeding), Qualifying, Sub-finals and final. Price will be fixed for all EFRA season and will be revised in each AGM:

Price will be fixed for all EFRA season and will be revised in each AGM:

Price for 2019 1/8th: **20€** per set

Price for 2019 1/10th 200mm: **12€** per set

Diameters for 1/8th: 69.0mm front and 76.0mm rear.

Shore hardness for 1/8th: 32 front and 35 rear (final number of shore after consultation with the organiser).

Diameters for 1/10th: 62mm front, 64mm rear.

Shore hardness for 1/10th: 37 front and 40 rear (final number of shore after consultation with the organiser).

PROCEDURE FOR CONTROL TYRE (specific rules for drivers): -

- Only EFRA chosen supplier controlled tyres can be used (Hand-outs).
- Reused tyres will be allowed.
- Mandatory sets for official race: 8 (eight) sets. With registration drivers must order the number of tyres for free practice they want to get, so the Official Tyre Supplier can provide enough tyres for whole event.
- When drivers arrive at the track, they will have their sets ordered for free practice ready to collect in the Official Tyre Supplier area. For Official sets of tyres (8 sets) drivers will get tickets to be exchanged in Controlled Area.
- Drivers have to pay for sets that they ordered (free practice and official sets) directly at the track to the Official Tyre Supplier.

- If the hand out tyres have any visible defects (bad gluing, visible damage to tyre or rim) the effected tyre(s) can be exchanged before the race start by race control. Production tolerance (including shore hardness) will not be considered as a defect. Tyres must be used as they are supplied and will be given out and fitted in the controlled area. (No modifications to the rims, except the hole for the axle, no shore meters can be used to select tyres)
- During their race time, drivers can use tyres from their box in the controlled area. After finishing their race time, drivers must leave their tyres in their box and leave the pit area without tyres. If any tyre leaves the pit, it cannot be used in the Official race anymore.
- When drivers finish their participation in the event, they can collect their used or unused tyres from the controlled area and keep them .-For free practice, drivers have free choice of tyres used, but no treatment is allowed. From the start of the controlled timed practice, drivers have to use the Hand-out tyres.
- In case of rain (decided by the Race director after consultation with the Section Chairman), any alternative tyre can be used which has not been treated in any way, with the aim to get more or less traction.

PROCEDURE FOR CONTROL TYRE (specific for manufactures/brands)

- Only EFRA registered manufacturers/brands allowed to be Official Tyre Supplier. They must be registered at the Official Tyre Supplier list before 31st of January.
- Requirements to be Official Tyre Supplier for EFRA events:
 1. All manufactures/brands must be Associated Member in EFRA.
 2. They must have enough capacity to provide necessary amount of tyres for EFRA events. The Official tyre suppliers have to provide a minimum sets as follow: Mandatory tyres for Official race + Tyres booked for drivers for free practice + Tyres needed for finals + Margin to cover additional demands no less than 30%
 3. Official Tyre Supplier has to be completely in charge of tyre distribution of tyres. This means: provide tyres directly at the track, take care of all regarding payments (they will accept cash and recommended credit card payments), handling Official tyres together with organiser (except controlled area), prepare ticket system and, in general, all minor things needed for the Control Tyre System.
 4. Manufactures must assure a good quality of tyres, which means right hardness (with minimum tolerance), balanced tyres, good quality of gluing and right hole for the axle.
 5. EFRA will carry out control of TYRES during the event at discretion to assure these requirements. EFRA reserves the right to refuse selected manufacturers before the event if they cannot assure quality needed and/or EFRA has the right to ban Manufacturers as Official Tyre Supplier for a period between 1 to 5 years if they don't provided handout tyres according to the EFRA requirements. Decision from EFRA in this point is final.
- Manufacturers/Brands as Official Tyre Supplier have the right to:
 1. To make any promotion by themselves as EFRA Official Tyre Supplier.
 2. To get enough space on the track during EFRA EVENTS to handle all necessary regarding Control Tyre System.
 3. To put banners on the track as EFRA Official Tyre Supplier with a

- maximum of 5 banners. If more banners on the track or another kind of advertisement, that will be in agreement with the organiser.
4. To get all benefits for EFRA Associated Members.
 - After 31st of January a final list with the Official Tyre Suppliers will be published on the EFRA webpage. In that list, Official Tyre Suppliers will get races according to a rotation list. Rotation list means: First company in the list get first EFRA event. Then, this company goes back to the list, the next one will get the next EFRA event, and then go back to the list, and so on. Agreement between EFRA and Official Tyre Supplier is allowed.
 - In the years when there is an IFMAR WC in the EFRA Bloc, all EFRA races at the WC track (Warm up, EFRA GP series...) must be done with the same tyres selected for the IFMAR World Championship. Additionally, if any GP or Warm up must be done on the track at same year where EC will be held, such races will be raced with same tyres.
- 5.2. Voted for 2019: Fuel may only contain methanol (methyl alcohol, CAS number 67-56-1), lubricating oil, a small content of anti-corrosion chemicals and maximum 16% for 1/8 and 16% for 1/10 of methane (Cas number 75-52-5) in volume. The specific gravity of the mixture may not be heavier than 0.87 grams/cc at 20°C and standard atmospheric pressure. For quick testing a Nitromax 16 can be used, but in case of failure with the Nitromax an official density meter must be used to control the specific gravity of the fuel including the temperature recorded during the test. A specific table will be produced to report the density (gm/cc) based on the temperature (from 0 to 50°C). The tolerance on the measurement will be +/- 0.5% based on the data reported in density table. Any violation with fuel which means any proof of the use of other additives as mentioned will mean 5 years of disqualification from any EFRA and IFMAR event.
 - 5.3. All vehicles must be equipped with brakes and a clutch in such a manner, that the vehicle may be held stationary with the engine running.
 - 5.4. Each motor must be equipped with an exhaust system and inlet silencer (INS-box) to reduce the amount of noise. A Registered muffler and Homologated INS-BOX is mandatory. In case of rain and on instruction of the Race Director, drivers can use something else as an INS box (In this case the INS box is not mandatory). EFRA's definition of a noise level is always final. Any modification to the muffler or INS Box is forbidden.
 - 5.5. Only EFRA registered mufflers are allowed at EFRA sanctioned events. The EFRA registered number must be engraved on the sidewall of the muffler. The tail pipe must be oriented on or below the horizontal Race directors have the right to measure at track side and take out cars that make too much noise. EFRA's definition of a noise level is always final. For 1/8th, a 3-chamber muffler is mandatory. For 1/10th a double chamber design, including silencer chamber, must be fitted.
 - 5.6. The aerial must be flexible. Carbon, metal, etc. is not allowed.
 - 5.7. The body and spoiler must be made of a flexible material and be painted properly. All windows must remain clear or be semi-transparent. When initially entered in a meeting the body must be neatly finished.
 - 5.8. The minimum weight limit of the cars:
 - 1/8th Class: 2350 grams for 4WD cars.
 - 1/10th Class: 1650 grams.
 For both Classes: The weight limit will be checked with the cars ready to race but with empty fuel tanks and with transponder (personal or with battery). The

weight will be checked on a digital scale balance and can be done before the start of the heat, sub-final, final or after the end of either. If the weight is found to be under the minimum weight the driver will be disqualified from the heat, sub-final or final.

5.9. Baseboard for checking the width of the car.

1/8th Class: The car shall be measured for width by placing it on a baseboard equipped with two side rails of minimum 40.0 mm height spaced 267.0 mm apart and a length of 637.0 mm for Formula and Sports cars and 610.0 mm for GT cars which includes provision for checking the maximum height.

1/10th Class: The cars shall be measured for width by placing it on a baseboard equipped with two side rails of minimum 40.0 mm height spaced 200.0 mm apart and a length of 460.0 mm x 175.0 height (incl. 10 mm spacer).

For both Classes: Base-board and rails must be constructed of high quality board suitably stiffened to prevent distortion. The car must roll freely between the side rails with any steerable wheel set in the straight ahead position without any part of the wheels, bumpers, body shell or any other part of the car touching the side rails irrespective of the compression or extension of the suspension. Measurement of the wheel base may be made by simple measurement of axle centre distance, but Race Directors should be prepared to make more exact checks in case of doubt or protests.

It is suggested that the wheels are removed and the wheel spindles firmly placed on V-blocks whilst accurate measurements are made. It is the responsibility of the driver to ensure that his car complies with the regulation at all times when it is on the track and the organiser may check any car for compliance with the regulations at any time during the race meeting. If a car is found to exceed the limits of dimensions on checking immediately after a race, positive proof of race damage may prevent disqualification.

5.10. Checks at the technical inspection:

a) Before the race all cars will be checked and during the heats the following random checks will be made:

- Weight limit.
- Muffler & motor.
- Body and wing/spoiler.
- Overall dimensions.

The chassis is to be indelibly marked before the race and if a driver wants to change it, he must present the new and the old to the inspection officer.

During sub-finals, all cars moving up to the next final plus the next one are to be checked. In addition to the above mentioned checks the following are to be done during sub-finals:

- Weight limit.
- Muffler.
- Body and wing/spoiler.
- Overall dimensions.
- Marking of the chassis.
- Fuel tank capacity.
- The same checks must be made after the Main Final for the top 4 places

5.11 Only two (2) servos are allowed.

5.12 It is not allowed to use any electronic parts for "Traction Control and/or braking control (ABS)" which can control the power of the transmission by means of a feedback system. It is not allowed to use any form of telemetry with active transmission.

- 5.13. List of approved equipment: All lists of approved equipment (i.e. bodies, mufflers and batteries) must be available on EFRA's webpage from the 1st of March every year. This is the final list for that year and no changes will be made before the next year. Equipment registered and homologated during the year will not be put on the list until the 1st of March next year.

6 1/8th CLASS TECHNICAL SPECIFICATIONS.

- 6.1. The engine may have a total capacity of not more than 3.50 cc. A maximum carburettor diameter of 9.00 mm.
- 6.2. The fuel tank including filter and fuel pipes up to the carburettor may hold a maximum of 125.00 ml. No loose inserts allowed. Any tank found illegal (>125 ml) after a heat or final shall be removed from the car and inspected for a second time after an initial "cool down period" of approx. 15 minutes. This period of 15 minutes is only necessary if ambient temperatures are above 20° C.
- 6.3. Overall dimensions of the car:
- Wheel base: 270.0 - 330.0 mm, overall width max. 267.0 mm
 - Overall width of the body max.: 267.0 mm, measured on all points on the body.

The lower sides between the two front and rear wheel arches will not be taken into account for technical inspection as long as they are not wider than 277 mm. If the body is wider than 277 mm on the lower sides the technical inspection has the right to take action with a warning for the first occurrence but disqualification from the race result for any further occurrences. For all finals: bodies must first pass technical inspection for verification and a first warning is not applicable.

- 6.4. Rims: The rim must not exceed 54.0mm. An edge to reinforce the rim on the inside (car-side) of 2.0 mm thickness and 3.0 mm height is allowed, flange diameter max. 60.0 mm. Any fixing bolts or other equipment installed in the wheel rims may not extend beyond the exterior of the wheel rim.
- 6.5. The front of the vehicle must be equipped with a bumper in such a manner, that it will minimise an injury if it makes contact with other participants or members of the public. The bumper must be made from a flexible material with all corners and sharp edges radiused. The contour of the bumper will follow the contour of the body with which it is being used. At no point may the bumper protrude more than 5.0 mm in front and 13.0 mm on the sides of the body.
- 6.6. If a rear bumper is fitted it must finish not more than 50.0 mm behind the rear axle. Rear diffuser is allowed as long as they don't finish more than 50.0 mm behind the rear axle.
- 6.7. All EFRA sanctioned events will be raced with open/closed cockpit prototypes/ sportscars/ can-am type/GT-P's/Group-C or similar cars. All lists of approved equipment, (i.e. Bodies, mufflers and batteries) must be available on EFRA's website from the 1st of March every year. These are the final lists for the year and no changes will be made before the next year. Equipment homologated/ registered during the year will not be put on the list until 1st of March next year.
- 6.8. A realistic driver figure (minimum 3 colours) made to 1/8 scale must be fixed in the correct position in open cock-pit cars. The windscreen and windows must be translucent (i.e. Not completely painted-in).
- 6.9. All bodies must have the front and rear wheel arches cut out if the original was so designed.
- 6.10. CUT OUTS
CUT OUTS -the windscreen must not be cut out. One hole of max. 6.0 sq. cm for cooling is permitted-side windows and rear windscreen may be removed..It is

not allowed to bend windows to the outside - all parts of the vehicle must be covered, except:

- a) Cooling head of engine.
- b) Air filter.
- c) Aerial (max. 10.0 mm).
- d) Outlet pipe of muffler.
- e) Fuel filler cap.
- f) Roll-over bar.

Only if these parts are extending the body. Cut-outs for above mentioned parts are to have no more than 10.0 mm clearance. In addition to this, the following holes are allowed:

- g) For muffler outlet.
- h) For fuel filler cap (50.0 mm maximum, round, viewed from above, or oval 40 mm x 60mm maximum). Note: Hole for roll-over bar and fuel filler cap can be combined. It's not allowed to combine fuel filler cap with Air filter hole and/or cooling head engine hole.

The following rules refer to the GT-P/Group-C body: In case of the Proto types or open cockpit cars, a clearance of 10 mm around the fuel filler cap is allowed.

- i) For radio switch (max. 10.0 mm)
- j) For glow plug (max. 20.0 mm).
- k) Fuel mixture valve (max 15.0 mm).

6.11. Specific body attributes:

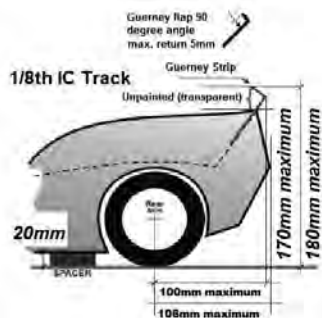
- a) Group C: Cars eligible for this class are those that have been used under "Group C" rules in the FISA Sportscar World Championship.
- b) GT1/GT2-Cars: Cars eligible for this class are those that are or have been racing in FIA GT Class. This can be either GT1 or GT2 cars like McLaren F1, Porsche 968 GT1, Ferrari F40, Marcos etc. The cut-out of the body at the rear is free after the rear axle, but rear lights must be fitted if the original is equipped with these.
- c) GT-P cars, eligible for this class are those that are or have been racing in the FIA "GT-P" class (see Le Mans 1999), or the Petit Le Mans Series in America.
- d) Proto type CAN-AM cars: eligible for this class are those that are of have been racing in any official championship.

Homologation procedure: For all types of cars, the body shape behind the rear axle is not subject to control. The outer edge of the wheels must be covered at the centre of the axles viewed from the top. All bodies must be homologated by EFRA. The homologation number of the body must to be visible, during the painting it will be possible to maintain transparent or semi-transparent the EFRA number.

6.12. Wings and Spoilers:

Separate wings and spoilers are not allowed. Only a Gurney strip mounted on the rear of the body is allowed. The 'Gurney' should not be higher than 5mm with a 90 degrees angle (see drawing). Maximum height for the body, side and rear wing is 170mm with the chassis raised on 20 mm blocs. This maximum height with the Gurney Strip is 180 mm on a 20 mm spacer.

The maximum overhang is 100 mm



measured from the rear axle centre point. See drawing.

Maximum dimensions: Group "C", GT-P, Can-Am, GT1 and GT2 cars max. width: 267 mm max. height: 170 mm (on 20 mm blocs) Overall, maximum height including a Gurney strip 180 mm (on 20 mm blocs) max distance behind rear axle: 100 mm (110 mm for 2wd & flat chassis cars).

- 6.13. 4WD cars can be used without any technical restrictions except those listed in Section 5. The use of separate front wheel brakes, except through transmission is also not allowed (locking of a one-way bearing is allowed).
- 6.14. A roll bar may be fitted which must not project more than 30 mm above the cooling fins or roof, in case of, for instance a saloon car.

7 1/10th CLASS TECHNICAL SPECIFICATIONS:

- 7.1. The engine may have a total capacity of not more than 2.11 cc. Engines will be air-cooled, with front rotary valve, two-stroke induction. The engines may have a maximum of four (4) ports in the liner, including the exhaust port, seen with the piston at lowest position. No form of forced induction is allowed. No form of variable port timing.

Only glow plug ignition is allowed. One additional gap in the bottom (skirt) of the piston is allowed. No additional holes in the piston are allowed. Additional slits or holes in the liner for cooling purposes are allowed as long as they do not reach the top of the piston at lowest position. Standard and conical glow plugs are allowed. Reference to 'hole' in this rule means any hole that is surrounded completely by material.

- 7.2. Engine internal modifications are allowed as long as they are within parameters of rule 7.1.
- 7.3. A maximum carburettor diameter of 5,50 mm.
- 7.4. The fuel tank including filter and fuel pipes up to the carburettor, may hold a maximum of 75.00 ml. No loose inserts allowed. Any tank found illegal (>75.00 ml) after a heat or final will be removed from the car and inspected for a second time after an initial "cool down period" of 15 minutes. This period of 15 minutes is only necessary in case the ambient temperatures are above 20°C.

- 7.5. Overall dimensions:

	Min. (mm)	Max. (mm)
Wheelbase:	230.0	270.0
Width without body:	170.0	200.0
Width with body:	175.0	205.0
Length incl. body & wing:	360.0	460.0
Height of the top of the roof (measured with a 10 mm spacer under the chassis plate level):	20.0	175.0
Wing width incl. side dams:	125.0	200.0
Wing:		55.0
Side dams:		35.0 x 50.0
Wing overhang (at rear):		10.0.
Wheel dia. (measured at tyre bead location):	46.0	50.0
Wheel width (incl. tyre bead) and tyre width (across side walls):		
Front:		31.0.
Rear:		31.0

Although the wheel dia. at tyre bead mounting location must not exceed 50.0 mm diameter, an edge to reinforce the rim of 2.0 mm thickness and 3.0 mm height is allowed, giving an overall wheel diameter max. 56.0 mm

- 7.6. Wheels must be fixed by a screw or nut. The screw or nut installed in the wheel

- rims may not extend beyond the exterior of the wheel rim. Quick change wheel systems are not allowed. No automatic / spring charged or electric system to change the wheels is allowed (only manpower).
- 7.7. The front bumper must follow the body contour and must be constructed so as to minimise injury that may result from being hit by a car. The bumper must be made from foam rubber or a flexible plastic material.
- 7.8. Bodies: Bodies must be a 1/10th scale touring car in character, their design being inspired by vehicles that exist or have existed, and must comply to the GLOBAL BODY SPEC 1/10th IC Track. Bodies need to be sent to the Bodyshell Homologation Officer for approval as indicated in appendix 9. The EFRA Registration Number has to be embossed in the body at an edge of the front window.
- 7.9. The rear of the body may not be cut higher than 50.0 mm measured with a 10.0 mm spacer under the chassis plate when level.
- 7.10. Details of all; front and rear lights, grills, air intakes and windows must be clearly contrasted from the surrounded paintwork. No parts of the car except the muffler outlet may protrude outside of the body shell, when viewed from above. No parts of the car except the antenna, body posts, transponder, may protrude outside the body shell, when viewed from the side wall. No additions or reshaping to the original moulded body shell (no body stiffeners allowed).
- 7.11. Cuts outs:
Only the following holes and sizes are permitted in the body shells:
- Maximum two holes may be cut with a maximum diameter of 60.0mm each.
Note: holes may not be combined. Minimum distance between holes: 5,0mm.
- A hole with max. diameter of 35.0mm is allowed just above the engine cooling head for easy glow plug access but cannot be combined with any other hole, minimum distance between holes: 5.0mm.
- Both front side windows and rear window can be removed for ventilation, but not the side rear windows, which must remain intact. Small holes can be made for the body posts, transponder, carburettor adjustment and radio antenna (max. dia. of 10mm).
- The hole for exhaust pipe must be of reasonable size.
- No other holes are permitted.
- 7.12. Wings and spoilers:
- One wing and one spoiler may be mounted to any car (if the original full-size car had more, it is allowed to do the same). Wing and spoiler must be made from a flexible material.
- Wing and spoiler may not be fixed to body with piano wire (they must be mounted directly to the body).
- Wing and spoiler must not protrude outside the maximum height and width of the body (incl. the side dams).
- Rear wings must be mounted in the same place as was intended by the body manufacturer. The overhang must not exceed 10 mm at the furthest point, measured from the most rear point of the body.
- Side dams may be fitted but must be a reasonable representation of those fitted do the original car, fit in a rectangle with the measurements defined, and must not project above the height of the roofline.
- The height of the wing may be adjusted but the wing, incl. side dams must not extend higher than the roofline.
- Wings (excl. side dams) are to be of single moulded construction (no flat packs/bend your own).

- 7.13. 4WD and 2WD cars can be used without any technical restriction except those listed in Section 7. The use of separate front wheel brakes, except through trans.
- 7.14. Roll bars (roll over bars) must be kept under the body.

8. A & B LICENCE:

- 8.1. To qualify for an "A" licence, a driver must be placed 1-25 in the EFRA ranking system. (All other drivers will be classified EFRA "B" licensed). These drivers must be approved by their own National Association as having sufficient experience and skill to take part in an International competition.

World Champion will retain "A" licence for the next 2 years. European Champion will retain "A" licence for the next 2 years. European Champion B-driver will retain "A" licence for the next 2 years.

The EFRA ranking list is based on the overall result in the EFRA GP series during year in progress. The total result of this list will decide upon A and B licence.

For all the races involved in this ranking, points can be achieved for the result after the finals (see General rules points table section 3.3.6).

9. PENALTIES

- 9.1. Referees must issue a verbal blue flag warning to slower drivers or to make drivers that are not within the same lap as the car that is about to pass him, to make way and not to obstruct the passing car. This warning must be announced "ATTENTION DRIVER (Name)".
- 9.2. Failure to respond to the verbal blue flag will result in an official warning and the driver must make a mandatory pit-stop for 10 seconds. During this mandatory stop the Referee will administer the official warning directly to the driver. In the case that there is no possibility to call a driver for a stop and go penalty, the Referee and/or Race Director will announce a time penalty of 10 seconds.
- 9.3. Any driver who is given 2 (two) official warnings will be immediately disqualified from the race in progress. After 3 (three) warnings the driver will be disqualified from the entire event.
- 9.4. Deliberate waiting for other cars will be treated as a verbal blue flag offence and a "Stop/Go" penalty issued. The Referee will advise the driver that his behaviour has been noted and that he should race normally. Failure to follow the Referees instructions will result in immediate disqualification. In the case that there is no possibility to call a driver for a stop and go penalty, the Referee and/or Race Director will announce a time penalty of 10 seconds.
- 9.5. Deliberate obstruction of other cars in an attempt to influence the result of a race will lead to immediate disqualification and loss of his/her International Registration until after the next event of the same kind. (e.g. GP/EC/WC).

10. GT TECHNICAL RULES

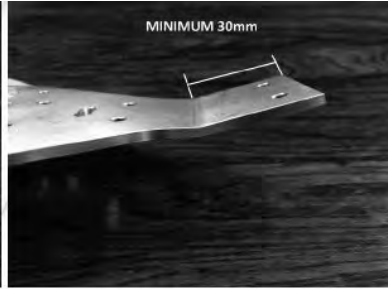
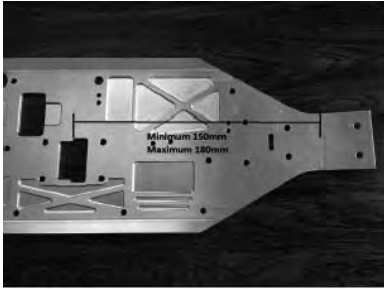
The basic principle for this class is the use of off-road cars and/or off-road parts, although we cannot prohibit the use of a single designed car for GT in the future. EFRA will follow rules approved in IFMAR GT 1/8th Powered 4WD Track. For any technical rule not covered in this chapter, EFRA will follow last rule approved by IFMAR and published in IFMAR web page www.IFMAR.org.

GT cars called "SUPER GT cars" may be invited to participate in events held in Europe as "invitational class".

- 10.1 Technical rules

The chassis must have a minimum kick-off of 5 degrees in front. No carbon fibre chassis allowed.

The kick-off needs to have a minimum length of 30mm and lower suspension arms must be mounted on the kick-off. Kick off must start at a reference point from the front diff, min 150mm, max 180mm.



Drive shafts must be used all around.

Brake System: Maximum 2 brake system in Central Drive Shaft / Central braking only on crown wheel (spur gear). Only standard mechanical brakes are permitted. Up to two brake discs are permitted anywhere on the centre driveshafts. Brakes may not be located on the outboard axles.

One-ways, spools, locking "Torsion-type," or externally adjustable differentials are not permitted. Front & Rear geared Differentials can only be tuned with the use of silicone-based oils. No centre differential allowed. Ball differentials not allowed/only gear differentials. Front and Rear differential gear ratios must be identical. Front or rear underdrive or overdrive is not permitted. The final drive ratio front and rear must be the same.

Overall dimensions of the chassis:

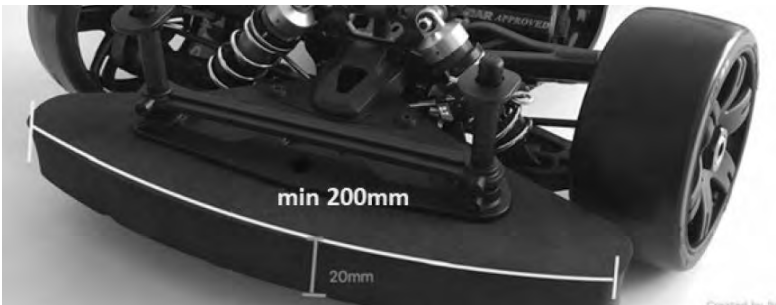
Height: minimum height 155.0mm with chassis plate on 20mm blocks.

Wheel base between 320-379mm

Length Maximum: 590mm

Width max 310.0mm, including wheels, axles and wheel-nuts.

The front of the car must be equipped with a bumper made from flexible "foam" material with all corners and edges rounded off. The contour of the bumper will follow the contour of the body. The bumper may not protrude in front of the body. Minimum dimensions 200 x 20mm.

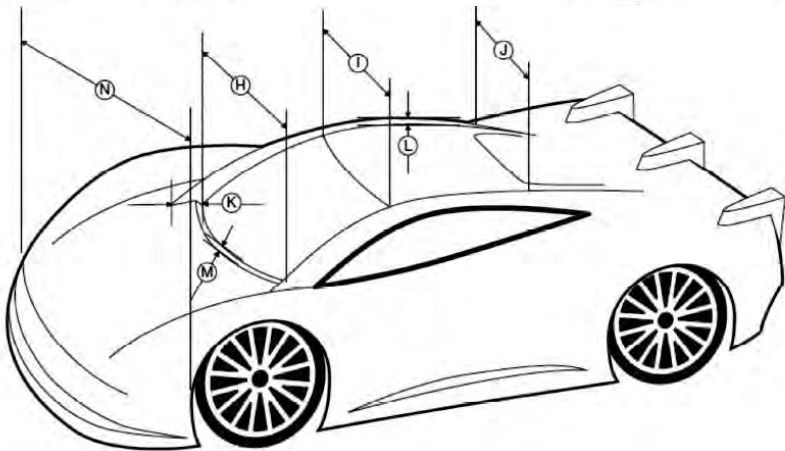
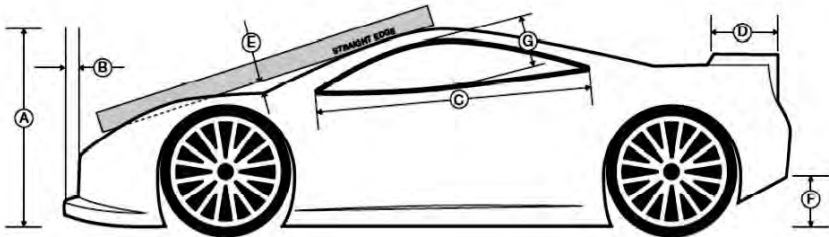


The maximum capacity for the fuel tank is 150cc max, including all internal tubing. The Clutch must be a centrifugal type with a maximum of 4 shoes. No axial engagement of the shoes (No "Centax" Type clutches). Clutch must use radial centrifugal shoes only in conjunction with Std parallel sided cylindrical clutch bell similar design to the unit shown.

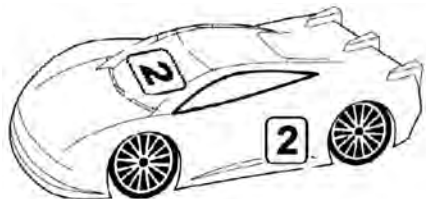


- Direct Drive, i.e. single speed or maximum two speed gear box Minimum weight in order to run with empty tank is 3500 grams.
- 10.2 Engine rules
Engines allowed will be .21 or 3.5cc engines. Maximum carburettor diameter is 7mm. The motor shall be air cooled. Conical plugs allowed.
Number of Ports. For EFRA European Championships we propose the following number of ports: 3 Outlet ports, consisting of 1 (one) main Outlet port and 2 outlet booster ports, regardless the name and dimensions, every hole is to be considered as one of the 3 allowed.
A maximum of 5 inlet ports or booster ports. Any hole will be considered as one of the 5 allowed.
The INS box is mandatory.
Engines must be capable of running a heat of minimum 7 minutes on one tank of 150cc fuel to avoid excessive tuning. Exhaust port height max opening to be determined in the future.
Approved / registered or homologated 3 chamber mufflers according to the EFRA list, including INS box list. A pipe extension on the muffler tailpipe is allowed with the provision below. Any extension to the exhaust pipe or addition to the body or attached to the chassis to capture or direct oil residue from the exhaust outlet must not increase the DB levels, as determined by race management.
- 10.3 Body Rules
Bodies must be commercially available 1/8th scale GT1, GT2, Super GT, DTM, or V8 Supercar cars, 2 door GT bodies.
At least a body with a separate wing like in touring cars. Height of wing max. 10mm higher as rooftop. Measurement taken with chassis plate on the ground. The roof cannot be designed in such a way that ribs or vins are used to manipulate the height. Maximum width body 317mm. Wing compared to body and wing overhang, same as sedan 1/10th class, max 10mm. Wing can be unpainted/clear.
Wing width max 310 mm, including side plates, but never wider as the rear of the body. Wing chord max 79 mm. Wing endplates maximum 40 x 70mm.
The body must have visible windows, body panel and trim markings, and the windows must be mostly clear. Some intrusion for creative painting purposes and tinting is permitted, but the windows must be transparent. Bodies must have headlights and grill details.
1 piece body moulding to avoid internal aerodynamics. A diffuser mounted on the rear of the chassis is allowed as long as it stays inside the body and not wider as the inner measurement of the wheels. The diffuser must be made of flexible material without any sharp edges.
No internal body supports / stiffeners / braces allowed to avoid lightweight bodies with internal modifications and add-ons, excluding reinforcement of the wheel arches and back boot lit is allowed. The body must rest on a maximum of 7 posts, of which 5 can protrude outside the bodies. Bodies must be made from Lexan with a minimum thickness of 1mm. The wing must rest on maximum 3 body posts which are not wider as 50x 20 mm each.
The body must be made from an existing car design, for which the name must be mentioned on the request for homologation. After been approved the name of the body is free to avoid license fees etc.
Bodies must be within the GBS dimensions by IFMAR. See drawings below.

- A) Minimum 155,0mm (with chassis on 20mm blocs),
- B) Maximum 15 mm depth
- C) Minimum 170mm
- D) Maximum 3 posts 50mm x 20 mm
- E) Minimum 12,0mm, gap between straight edge bottom and hood plane where it meets windshield.
- F) Maximum 75,0mm (with chassis on 20mm blocs)
- G) Minimum 36mm
- H) Minimum 200mm
- I) Minimum 145mm
- J) Minimum 130mm (top inside edge of C-pillar)
- K) Maximum 8mm depth of A-pillar above the windshield surface plane
- L) Maximum 5mm height of outer roof rail above the roof surface plane
- M) Maximum 4mm stagger between hood and windshield
- N) Maximum 317mm, minimum 300mm overall width



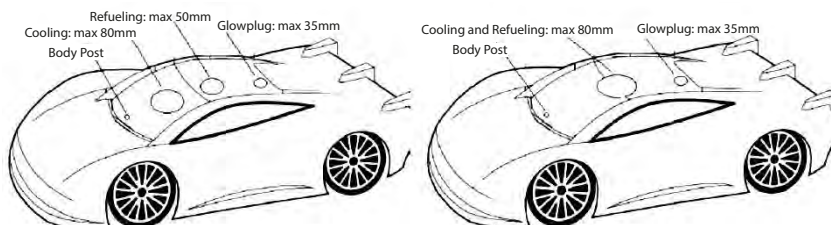
Numbering of the cars. Cars will be numbered 1 to 10 or 1-12 in each heat. The car must have 3 numbers. Only the numbers supplied by EFRA will be used on the cars. They may not be cut out to eliminate the background. 2 Numbers on



the sides in front of the rear wheels, 1 in front on the hood or window. These numbers will change during the qualifying heats (after re-seeding).

EFRA will provide other numbers for altered heats and for sub-finals and final.

Holes in the body. Holes in the body for fuel-gun, fuel tank opener, aerial, glow-plug, carburetor access and exhaust. Rear and side windows may be removed. Maximum height of 75mm cut-out at rear on 20mm blocks. One opening may be made in the front windscreen with a maximum dimension of 80.0mm in any direction for refueling and/of engine cooling. An additional hole for refueling in the roof of 50mm is allowed and 35mm for the glow plug. Minimum distance between holes is 5mm. See drawings:



10.4 Race Format

Race format will follow same procedure than other classes of IC section with exception of length of the Control timed practice heats and Qualification heats that will be 7 minutes of duration, refueling forbidden. (see rule 2.2 to 2.8 appendix 1).

10.5 Tyre Specifications

Controlled tyres for all EFRA events for GT class which means 1 brand. The official tyre supplier must be EFRA ASSOCIATE MEMBER. The commercial part of the controlled tyre is an agreement between organizer and manufacturer. EFRA has to be informed of the price of set of tyre and EFRA has the right to impose a fix price for a set of tyres. Once chosen for an event the same manufacturer is not allowed to supply tyres for the next EFRA GT event.

Tyres for front and rear are the same dimensions. The tyres must be made of rubber, no foam tyres. An insert is allowed. Tyres must be limited per driver for practice and race with only 1 extra set for the main final. Tyres must therefore be impounded, 1 box per driver. Holes in the rubber tyres are allowed, so as the rim. Will be better for temperature. No additives on the tyres allowed under any circumstances.

Tyres width, max 45mm

Rim measurement, spoke design, see picture. No dish like rims.

Rim Off set positive, +/- 7 mm because the use of controlled tyres.

The rims must have a minimum 75mm and maximum 85mm diameter.

The minimum diameter of a tyre must have at any point in the race will be 98mm and maximum is 102mm. One compound to be used for the entire event under dry conditions and one specific different set in case of rain.

Wheels must use a 17mm hex hub consistent with the dimensions and function of the hubs used in 1/8 off road racing. The wheel must be affixed by a 17mm wheel nut, threaded on to the hex hub. Quick change mechanisms are not permitted.

Number of tyres for an EFRA event must be specified and will depend on track layout and tyre wear.

I.E. 1 set for Practice, 2 sets for Qualifying+super-pole, 1 set extra for subfinals, 1 set extra for main final. All used tyres available for substitution. Tyres will be marked with the drivers registration number.



10.6 FUEL Specifications

Fuel or fuels must be commercially available. Fuel may only contain methanol (methyl alcohol) CAS number 67-56-1, and/or Ethanol (Ethyl Alcohol) CAS number 64-17-5, lubricating oil, a small content of anti-corrosion chemicals and maximum 16 of nitro methane (Cas number 75-52-5) in volume. The specific gravity of the mixture may not be heavier than 0.87 grams/cc at 20°C and standard atmospheric pressure. Measurement will be done with a nitromax 16% in the pit lane and/or anywhere inside the venue. Any fuel detected heavier than 0.87 will mean that the driver will have the result deleted from the heat or final where the fuel was found too heavy. The following additives are strictly prohibited; Hydrazine, Hydrogen Peroxide, Toluene, Propylene Oxide.

10.7 PROHIBITED or NOT ALLOWED

- Use of one way bearings, except for the 1st gear of a 2-speed transmission.
- Belts.
- Extra Body support struts for lightweight bodies, except those mentioned in the rules.
- The use of traction control devices, active suspension devices and any steering control aided by gyroscopes/'G'-force sensors is strictly forbidden.
- 4 wheel brakes. Independent controlled braking on the front wheels is not allowed.
- Hydraulic braking systems.
- More than 2-speed transmissions.
- Quick change wheel systems are not allowed, or the use of electric, spring or flywheel based tools to change wheels.

11 1/8th ELECTRIC CARS

- 11.1. Car must be an 8th scale electrically powered character representation of a racing car within the given dimensions. Maximum width of car is 267 mm, this excludes the body shell which has it's own dimensional rules.
- 11.2. On all cars braking must be a combination of electronic speed controller and motor (dynamic braking) only via the single speed fixed transmission to the rear wheels.
- 11.3. All cars must be fitted with a failsafe device, this can also be incorporated into the receiver or speed controller.
- 11.4. 1/8 Scale Electric Track Cars will be driven by Lithium based batteries with a nominal voltage of no more than 15.2 volts (4S). It is allowed to use 2 x 2S or 4 x 1S. If multiple individual batteries are connected together (in parallel or series), then all batteries used must be of the same manufacturer brand and same Part Number.

Only homologated batteries shown on the EFRA Approved Lists on the official EFRA website will be legal for use at EFRA sanctioned events.

All Lithium Batteries must comply with the published data shown on the EFRA Approved Battery Lists. Batteries that are not compliant with the dimensional rules or published weights will not be allowed.

LiPo/LiFe drive batteries must be in a 'Lipo sack' at all times when being charged or discharged. This applies to any discharging procedures except during a race or when using organiser supplied resistors. Anybody not doing this will be penalised at the event. LiPo sack is defined as a receptacle designed for the purpose of charging LiPo/LiFe batteries and of a suitable construction as to contain a LiPo/LiFe fire.

The maximum charging cut-off voltage is 4.20v per cell in series (16.80v for 4S). Organisers can check this voltage at any time during the event.

All Rules concerning:- Technical Specifications, Race Procedures, Homologation Procedures, for Lithium Batteries can be found in NEW APPENDIX 4.

SUSPENSION CLASS (4wd With Suspension)

- 11.5. Minimum weight to be 2500g (ready to race).
 - 11.6. The brushless motor (less than 2800kv) and speed controller combination must be or have been previously commercially available and have a maximum recommended retail price (RRP) of 350 Euro including all taxes. The motor must have a 5mm pinion shaft.
 - 11.7. Speed controller reverse operation must be disabled.
- FLAT PAN CLASS (4wd Without Suspension)
- 11.8. Fixed chassis cars without any moving suspension components. No dampers allowed, or springs. No oil may be used other than on bearings/belts and drivetrain.
 - 11.9. Minimum weight to be 2100g (ready to race).
 - 11.10. The brushless motor (Maximum of 2200kv) and speed controller combination must be or have been previously commercially available and have a maximum Euro recommended retail price (RRP) of 350 Euro including all taxes. The motor must have a 5mm pinion shaft.
 - 11.11. Speed controller reverse operation must be disabled.

11.12. BODIES

Bodies must follow same rules like 1/8th IC cars (see 6.7 to 6.9 Appendix 1).

11.13. CUTS OUTS

One cut out for cooling of motor and esc is permitted with a total area of 40x40mm. Conveying guides inside the body are permitted but no outside additions.

11.14. WINGS AND SPOILERS

Wings and spoilers must follow same rule like IC cars (see 6.12 Appendix 1).

RACE FORMAT

11.15. QUALIFICATION

1. Heats must be separate between categories: modified and stock. If the number of drivers in one category is less than 10 drivers, all drivers racing in 1/8th electric class must race together and then, and results will be separated.
2. The Qualifying Heats will be 5 minutes and the last lap plus the time to complete this last lap up to a max of 40 seconds
3. 5 Rounds of Qualifying will be run, irrespective of the number of drivers. Qualifying will be 5 minutes + last lap

4. In Qualifying Rounds the Round by Round point system will be used (same system as IC cars, see 2.4 Appendix 1).
5. The qualifying heats will be a maximum of 10 drivers and where possible equal number of drivers in each.
6. Starting for qualifying heats will be from the start line or pit lane, using the staggered start system (one by one). In each Round, the order of starting Heats will be same as rule 4.2 Appendix 1.
7. The qualifying results will determine the composition of all finals with the top 10 proceeding to the "A" final and so on down.

11.16. FINALS

1. Durations for finals will be: 7 minutes + last lap (flat pan cars) and 5 minutes + last lap (suspension cars).
2. There will be 10 drivers in all finals where possible. Finals will be organized for all competitors. 3. If the lowest Final has less than 3 drivers, they will be mixed as equally as possible in the next Final, respecting their qualifying position for their start order.
3. If the lowest Final has less than 3 drivers, they will be mixed as equally as possible in the next Final, respecting their qualifying position for their start order.
4. The winner determined from the combined "A" finals will be the champion. If the A finals cannot be completed, the awards will be made based on the final Qualifying positions.
5. All finals will be run in 3 legs from slow to fast.
6. If three leg finals are run, then the best 2 out of 3 to count
7. The winner of a final gets 1 point; the second gets 2 points and so on up to 10 points for the 10th driver. In the event of a tie regarding time in a Final, the points will be equally awarded to each driver and the next driver not tying will be two points more.
8. In the event of a tied position the driver with the single highest finishing position in either of the best 2 finals that counted will be awarded the tie. In the event of a continuing tie then the laps and times from the highest finishing position will be compared. The driver with the fastest laps and time total will be awarded the tie. In the case of a continuing tie, then the times from the second-best position will be compared. When some drivers of a final do not run a final, they will be awarded the remaining points in the order of their car numbers.
9. Cars, which do not pass the start/finish line after the prescribed race time, will be classified according to the number of laps recorded. The "A" finalist with the lowest number of points will be the winner of the International Race.
10. All final results will be published at least 10 minutes before prize giving.
11. There will be awards at least for all "A" finalists, and the winners of any other final. If no round of Final(s) are completed the results of the event are taken on qualifying positions.

APPENDIX 2

1/8th SCALE OFF ROAD CARS

1. ALLOCATIONS FOR EUROPEAN CHAMPIONSHIPS

- 1.1. The number of drivers and the National Allocations for the European Championships will be decided upon at the EFRA AGM annually. According to the following table.

	GP	EC B	ECA/ ECA+	EC 40+	Euro- Indoors
Days	Fri./Sun.	Fri./Sun.	Tue./Sat.	Fri./Sun.	Fri./Sun
Min/Max No of drivers	120/144 max	120/144 max	150/180	120/144	120/144 max
The Venue (Track, Rostrum, pits space, commodities, etc...) must be sufficient for all participants.					
Recommended Date	2nd weekend of the month	2nd weekend June	2nd weekend July	2nd weekend Sept- ember	2nd week from Nov- ember- February
Compulsory Registration	EFRA or National	EFRA	EFRA	EFRA	EFRA
Allocation	NO	YES	YES	YES	
Restrictions	NO	See 1.5	NO	NO	NO

- 1.2. EC A+ with more than 150 drivers can only be allocated to federations that have already organized a successful EC B or EC A in the precedent years.
The National Federation must confirm the capacity of the organizer for an event with more than 150 drivers. In order to ensure the appropriate rotation in the venues of ECA & ECB, when considering applications for each kind of event, the venues who had not allocated one of those in the preceding 3 years will have preference.
- 1.3. For allocation and re-allocation procedures see General Rules 3.6. and 6.2.
- 1.4. If a driver has not registered by midday on the first day of the event, then his place will be re-allocated unless that driver has contacted the organizer to explain his reason for not registering
- 1.5. A 4WD European Championship for B Class drivers may be organized each year. Entries will not be allowed for drivers who have already won that event or who have ranked in the first forty (40) places of any of the preceding two (2) 1/8th Off Road EC A Championships and to any driver who has ever taken part in an EFRA European Championship A main final in any class of racing. To be run if possible the 2nd weekend of June.
- 1.6. Allocations lists with reallocations for EC A & B to be published on EFRA website: 5 weeks before the first day of the event.
- 1.7. a). A 40+ EC may be organized each year, Preferably Mid September. A designated tyre system may be used for this event following a decision made at the previous section meeting.
b) An Indoor EC may be organized each year, preferably from 2nd weekend of November to February.
c) The Indoor EC may also include Electric 1/8th models.
The Main final to be 3 races of 10 minutes duration.

1.8 All European Championship organizers must inform EFRA before 31 December the year before about the best tyre combinations for their track.

2. RACING FORMAT EUROPEAN CHAMPIONSHIPS AND G.P.

2.1 All Events, formats and timetables should be adapted to the real number of entrants and facilities. The 3 days events, i.e. the GPs, the European Championship for B class drivers and all other ECs but ECA will have the same format as specified in the following rules adapted to a 3 day event with only four (4) attempts at qualification, only two (2) to count, weather permitting. Entries will be limited to 120 drivers, special allowance can be given by the EFRA AGM Section Meeting up to a maximum figure of 144 drivers, and reseeding of the heats will only be done in case of clear necessity on the criteria of the R.D. and Referee. Order of the rounds will be always the same, from 1 to 12. With the fastest drivers into the last groups. At the GP held at the event intended to host the European Championships in the previous year and in the same year i.e. the warm up event, the full race program should be used and tested including the reseeding of heats after practice.

2.2 QUALIFICATION HEATS:

- a) If the host country wants to, and the facilities can accommodate 180 drivers, qualifying rounds can be up to 15 cars. This decision will be made by the Section Chairman, the Referee and the Race Director
- b) Each driver should be entitled to a maximum of 5 attempts at qualification, weather permitting.

c) Starting for qualifying will be with 'Flying start'. The track will be opened normally with a 3 minute warning to the start, this will be announced through the sound system, you will also get the time "2 minutes to start", "1 minute to start", "30 seconds to start" and "10 seconds to start". Deliberate stops waiting for the signal at the track and cutting the track to find a better position in it are infringements to be penalized unless otherwise authorized by common decision of the Race Director and the Referees communicated at the Team Manager Meeting.

The announcement: "Clock is running" will indicate that the heat has started. All qualifying runs and finals are ran by "time plus next lap" system. Qualifying heats are of 5 minutes duration. The choice of general rule 9.3, a or b, will be done before the official start of the event by the Race Director and clearly stated at the Team Managers meeting.

- d) All drivers will be entitled to a sub-final.
- e) Heats will be run, normally, in the following sequence for the 5 qualifying rounds:

Round 1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

Round 2: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3

Round 3: 7, 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5, 6

Round 4: 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5, 6, 7, 8, 9

Round 5: 13, 14, 15, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

2.3. TIMED PRACTICE SYSTEM

- a) The practice for drivers will only be run in the way of rounds in heat order. On Tuesday there will be at least 5 rounds of practice, all of 5 minutes track time. On Wednesday before the start of the 2 rounds of Controlled Practice there will be a "track shake-down round" early in the morning, only the Wednesday controlled practice rounds will count for reseeding. These rounds will be of 10 minutes duration with the last 5 minutes timed. Announced as rule 2.2. if needed. Best 3 consecutive laps inside

the whole 10 minutes or the complete last 5 minutes may be used for reseeding purposes. The selection of the reseeding system is done by the race director and must be clearly advised before the start of practice. Results of the timed practices will be published (laps and times). Points will be awarded according to the result selected for reseeding in each round. The best single point result scored out of these two rounds will be used to sort drivers by performance and to reseed them before the real qualifying rounds. In event of a tie second point result will be taken into account to solve the tie.

- b) Reseeding: After timed practice and subject to frequencies and common sense the top 36 drivers will be placed in the first 3 heats with correspondent number of each country up to a maximum of 5 drivers in each heat. The first 3 drivers take 1st place in the first 3 heats, next 3 in second place at each heat and so on. Use this system to include 144/180 drivers and avoid small teams being placed in the same heat. The sort out problems round after reseeding can be done either the afternoon immediately after the opening ceremony or early morning the next day.

2.4. QUALIFYING SYSTEM

In each round drivers will score points based on laps and times achieved.

Fastest competitor (based on laps & time) in each Round will score zero (0) points, second place 2 points, third place 3 points, fourth place 4 points and so on.

If two (or more) competitors achieve an equal time in any Round they will be awarded equal points. The next competitor not included in the tie will be awarded points corresponding to his position in the particular Round.

(NOTE: drivers not recording a time or having a result disqualified in any Round score points corresponding to the total of entrants to the event, not modifying other drivers result inside that round).

Overall Qualifying positions are decided by each driver's "best" (lowest) points being added together, based on the number of rounds to count.

In the case of two or more drivers having the same points score the next best score determines position. If still unable to resolve with the next best rounds then driver with fastest laps and times will determine position.

Out of 5 (five) completed rounds 3 (three) to count.

Out of 3 (three) and 4 (four) completed rounds 2 (two) to count.

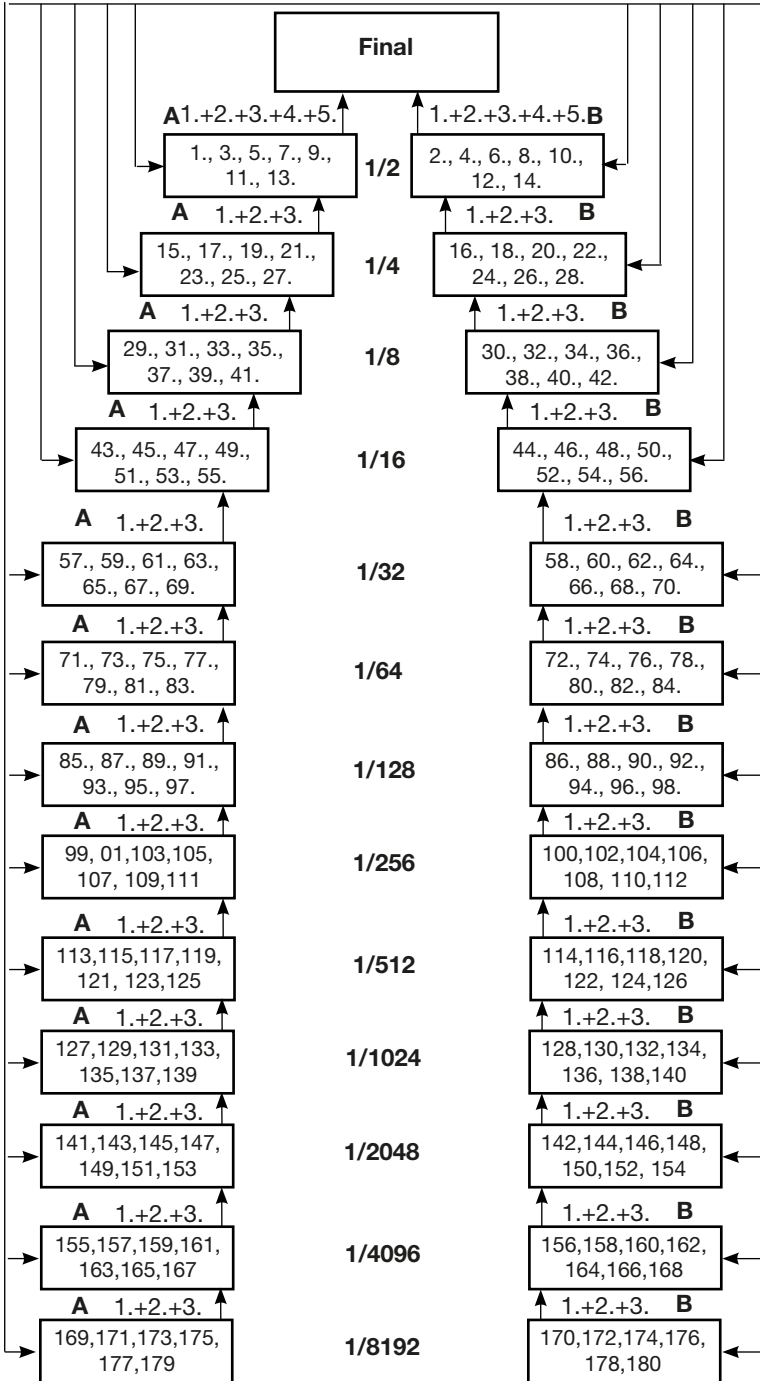
Out of 1 (one) and 2 (two) completed rounds 1 (one) to count.

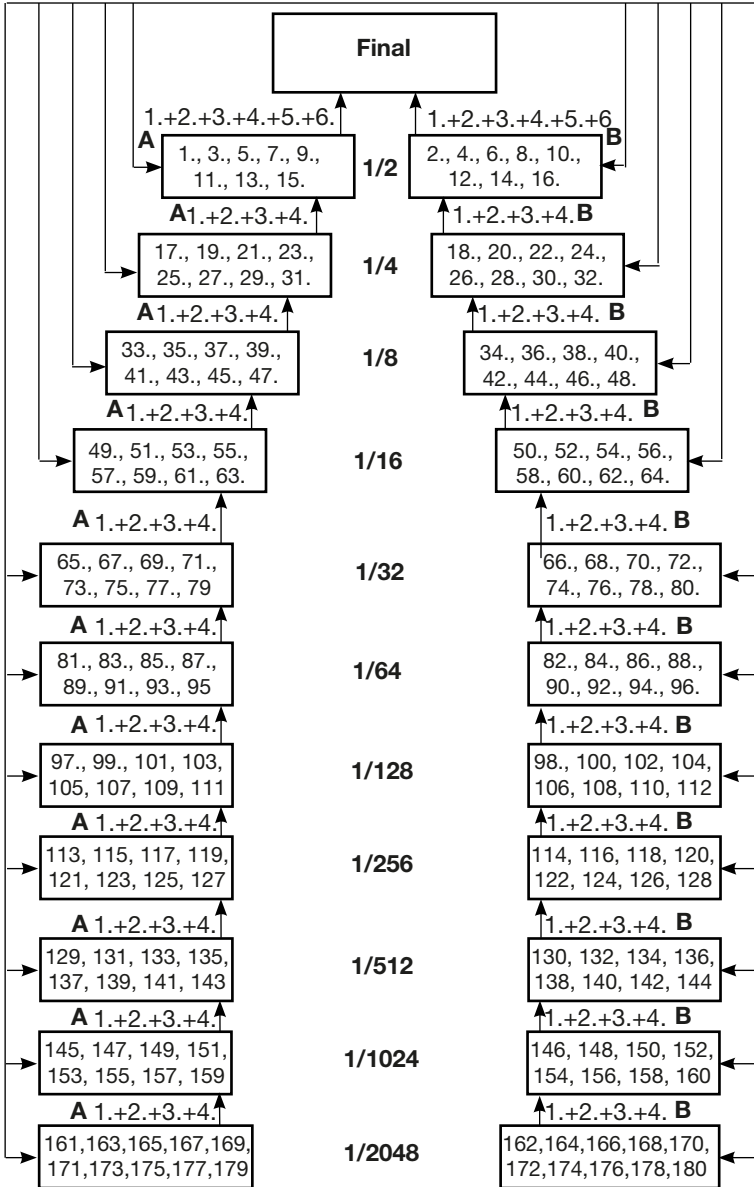
2.5. FINALS

- a) All finals can be of 12 cars with 4 cars progressing to next final, and 6 cars from each semi final proceeding to Main A Final, together with a 13th car, that spot will be decided on a race of 15 minutes duration, after the first exhibition final.

Marshaling at ALL FINALS will be done either by one of this 2 systems or by a combination of both: 1.- By providing a marshal by each driver taking part in the final to cover the marshalling position of his car number, if there is no marshal then the driver can not race and must cover that empty position and/or 2.- The driver marshal the precedent final of his side of the Christmas Tree with the non filled positions over 8 positions covered by the organizer, with same penalty for non present, not to drive later on.

"A" series sub-finals will be composed of Odd places drivers following qualification. "B" series sub-finals will be composed of Even placed drivers after qualification. Every qualifying driver must progress to the main final





in accordance with the accompanying Christmas tree. All sub-finals up to and including 1/128th A and B will be of 15 minutes duration. Then from 1/64th to quarter finals 20 minutes, Semi-final A and B 20/30 minutes, the final should be 45/ 60 minutes. The top 3 (three) / 4 (four) from each up to the quarter finals progressing to the next sub-final and the first 5 (five) / 6 (six) from each semi-final progressing to the Main Final. After the finish of the quarter finals each semi finalist ("A" and "B") is entitled to 10 minutes practice time with numbers and appropriate radio frequencies (See attached Christmas tree). TQ driver after qualifying will have the right to practice in both semifinals. First semifinal to start no sooner than 15 minutes after the end of practices. If the first subfinal is 1/1024 or less then all subfinals might be 20 minutes duration. There will be an exhibition final for +40 drivers after the 2 semi finals and before the main final, length of that final will be 20 minutes. Drivers will qualify for that final according to their result achieved at qualification rounds, top 10/12 will have the right to compete at this final except those who have reached the semi finals.

There will be an exhibition final for under 17 drivers after the 40+ final and before the main final, length of the final will be 20 minutes. Under 17 final is for all drivers who are 17 or younger on the year of competition. Drivers will qualify for that final according to their results achieved in the qualification rounds, top 10/12 will have the right to compete in this final. In the case of no under 17 driver in the main final, then the winner of the under 17 final will be the European Junior Champion.

b) Special rules for EUROINDOOR Championship:

Format of Euro B with the following modifications:

All subfinals will be of 15 minutes duration.

Main final on 30 minutes duration

there will be no +40 final.

TQ driver will classify directly for the main final. TQ driver will practice in both practise of semifinals, A & B.

Bump-up for the main final will be 5+5 (4+4 in event of a 10 drivers final), the remaining spot will be decided on a race of 10 minutes duration, after 15 minutes preparation time.

2.6. TIMETABLE

The timetable for E.C. shall be as follows: The Race Organiser should schedule all events for each day to be completed and the track closed by 18:30.

TUESDAY	A.M. Registration & Technical Inspection + 1st & 2nd rounds Timed Practice (5 minutes) P.M. 3rd, 4th & 5th rounds Timed Practice (5 minutes)
WEDNESDAY	Early in the morning shake-down round + from 10:00 2 rounds Controlled Practice (10 minutes) P.M. OPENING CEREMONY Reseeding of drivers from practice times. Top 36 in 1st 3 heats 37 - 72 in next 3 heats 73 - 108 in next 3 heats 109 - 144 in next 3 heats 145 -180 in last 3 heats 1 round of timed practice to sort out problems
THURSDAY	3 rounds qualifying
FRIDAY	A.M. 2 rounds qualifying

P.M. 1/8192 Finals A & B (A is run first)
 1/4096 Finals A & B
 1/2048 Finals A & B
 1/1024 Finals A & B
 1/512 Finals A & B
 1/256 Finals A & B
 1/128 Finals A & B

SATURDAY 64 Finals through to "A" Final
 Final to commence 15.30

Official Prize Giving/Reception/Banquet to be held after Main Final at a time to be announced by the Organisers. Banquet Tickets to be sold in advance if such existing.

2.7 Driving format for 1:8 OR Electric for European Championship

2.7.1 QUALIFICATION HEATS Like rule 2.2

2.7.2 TIMED PRACTICE SYSTEM

- a) The practice for drivers will only be run in the way of rounds in heat order. On Friday there will be 5 rounds of practice, 1st, 2nd & 3rd of 5 minutes duration and a 4th and 5th of 10 minutes track time. Two last rounds of controlled practice will count for reseeding These rounds will be of 10 minutes duration. Results of the timed practices will be published (laps and times). Points will be awarded according to the result selected for reseeding in each round. The best single point result scored out of these two rounds will be used to sort drivers by performance and to reseed them before the real qualifying rounds. In event of a tie second point result will be taken into account to solve the tie.
- b) Reseeding: After timed practice and subject to frequencies and common sense the top 36 drivers will be place in the first 3 heats with equal number of each country up to a maximum of 5 drivers in each heat. The first 3 drivers take 1st place in the first 3 heats, next 3 in second place at each heat and so on. Use this system to include 120 drivers and avoid small teams being placed in the same heat. The sort out problems round after reseeding can be done alternatively Friday afternoon after the opening ceremony or early Saturday morning.

2.7.3 QUALIFYING SYSTEM Like rule 2.4

2.7.4 FINALS 12 fastest drivers will qualify for A-final.

Drivers placed from 13 to 25 will be placed to B-final.

1-12 → A-final

13-25 → B-final

26-37 → C-final

38-49 → D-final

50-61 → E-final

62-73 → F-final

74-85 → G-final

Finals will start with the last chance final for drivers qualified to B final.

All finalists entitled to a practice final except those at the B final that run the last chance final.

There will be 13 drivers and the fastest will bump up to A-final, 13th position on the grid. From there the finals will run from lower finals towards A-final. Duration of finals will be 10 minutes. All finals are run 3 times, counting 2 fastest by points. Winner of the final will get 12 points, second will get 11 points and last one 1 point. If final rounds are cancelled due to weather conditions, 1 out 1 or 2 rounds is calculated.

2.7.4 TIMETABLE

Friday: Registration and technical inspection 3 rounds of free practice 5 minutes of duration 2 rounds of timed practice for reseeded, 10 minutes in duration Opening ceremony Sort out problem round (if needed)

Saturday: 5 rounds of qualifying Sunday Last chance final 3 rounds of finals Exhibition final (youth and/or +40) Prize giving ceremony All days recommended to end by 18:30.

3. **TRACK**

Minimum Width: 4 metres

Minimum Length: 250 metres

3.1 SURFACE

Artificial surfaces should be of the same type used for road construction.

They must not be potentially dangerous or pollutant.

Within the total length of the track 50 percent (50%) minimum must be from natural soil.

Any section made from artificial surface must not be longer than ten (10) metres.

A natural soil section must always separate two (2) artificial surface sections.

At place of the lap counting antenna, there must not be any metallic structure. Deterioration of the natural soil area must not uncover obstacles in the transit area between natural soil and artificial surface (overlapping slope must be smooth and of sufficient length).

The track must be suitably drained.

3.2 JUMPS AND OBSTACLES

Their sizes must be in relation with the scale of the car.

3.3 SAFETY

Safety for everybody must be the most important aspect when designing a track and at every moment while race is on progress. All non authorised people will have to leave the track area when the call 1 minute to start is given. Press and media will be informed of this rule by the organizer when obtaining their press pass.

3.4 MAINTENANCE

The track surface may only be repaired at the following moments:

Any time at the end of any practice round during practice days, and after the practice and before the qualifying rounds.

At the end of day one of qualifying.

At the end of qualifying and/or at the end of the second day of qualifying.

The Race Director can authorise repairs, if he considers the track to be unsafe at any time with the agreement of the referees.

3.5 OTHER TRACK SPECIFICATIONS

3.5.1 A pit lane must be provided that has a convenient and safe entrance and exit to and from the racing surface. It must be separated from the racing surface by a secure barrier. There must be a second barrier of at least the same specifications of the outer barrier between the pit lane and the working pit areas. The design of the pit lane access and exit must be done to prevent high speed racing at the pit-lane.

3.5.2 All refuelling, repairing, or servicing of cars must be accomplished with the vehicle fully behind the barrier between the pit lane and the working pit area, and not in or over the pit lane. Cars may be placed on top of the pit wall for servicing provided the wall has been designed so that the car is secure and stable.

4. RACE PROCEDURES

Race procedures shall be as follows with the addition of the non contradictory rules of section 4 of Appendix 1 up to 4.9, basically part of 4.1 (mechanics position), rule 4.3, rule 4.7.7 to 4.7.11 and rule 4.9. It is forbidden to cut the track during the warm-up minutes unless otherwise advised and it is forbidden to overtake while the formation lap is on progress (if existing). It is not allowed to the mechanics go to or to come back from the starting grid when count down has started, penalty for that is a 10 seconds stop & go.

In case a race cannot be completed for whatever reason the final ranking will be made as follow:

Ranking of sub finals will be used up to the level where the last pair of sub finals A & B have been run.

Above that level, for the remaining drivers, the qualification ranking will be used.

	A	B	
Final	Not Raced	Not Raced	↑ Ranking Qualification
....	Not Raced	Not Raced	
Sub Final N	Raced and void	Not Raced	
Sub Final N-1	Raced	Raced	↑ Ranking Sub finals
....	Raced	Raced	
Sub Final N-x	Raced	Raced	

Parc Fermé:

All cars of the the first semi-final will be impounded in parc fermé during the later semi-final. All cars of both semi-finals will be released at the same time.

Delayed Start:

As long as the starter has not called the cars to the start line (30 seconds to the start call), every participant of the semi-finals and the final may request a delay of ten (10) minutes for repairs on his car. The delay will be granted only once for each semi final and main final. The track shall be closed to all cars during the delay period. The driver that asked for the delay has to start last from the startgrid (11th or 13th position). At the Chart, the one raced and void must be the A side, first column (we always race A first).

4.1 The track for a European Championship MUST be either new or repaired new before the day it is open for practice. Whether the track is a new track made for the event or an existing track it can not be open to drivers for practice before the day the official practice is scheduled. The National Federation and the organising Club must forbid any use of this track 4 weeks before the event.

4.2 For Electric 1/8th all finals will use a "Le Mans" or "F1" type grid start, with a minimum of 3 meter alternating intervals with two rows of cars. Cars must be placed forward facing to their markerline or start box.

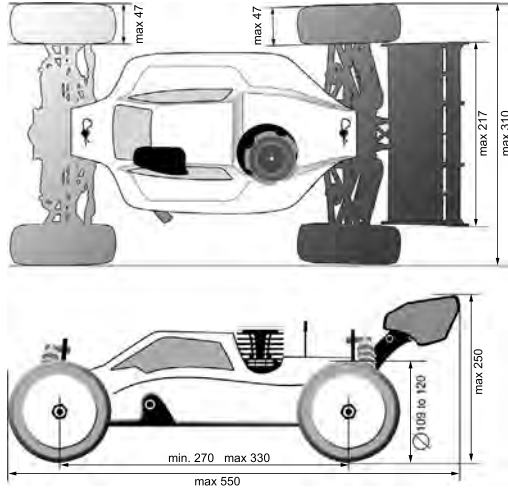
If F1 start is used, then the Top Qualifier shall choose if the first car on the grid shall start on either left or right side and shall be used for all finals.

5. TECHNICAL SPECIFICATIONS

4 WD 1:8 OFF ROAD CARS

5.1. GENERAL DIMENSIONS

- Overall length 550 mm maximum
- Overall width 310 mm maximum with the car standing over 27 mm blocs
- Wheelbase 270 - 330 mm.



- d) Overall height measured from the ground including rollbar with full suspension compression 250 mm. maximum (this measurement does not include the receiver aerial).
- e) Minimum weight is 3.200 kg for 4 WD.
- f) No other function than steering and throttle/brake are allowed to be operated with the Radio Control by the driver. Any other electronic system placed in the car different than the personal transponder and a possible switch on-off is not allowed.
- g) Wheel overall diameter must be between 109 and 120 mm. Wheel overall width 47 mm maximum.
- h) Measuring equipment for width, length and height should be constructed preferably from metal or alternatively high quality board. The materials will be of suitable thickness to eliminate any distortion.
- i) The front of the vehicle chassis must be equipped with a plastic bumper (no metal at all) in such a manner that it will minimise damage in the case of it entering into contact with other participants, marshals or any person. The bumper must be made from flexible material (plastic) with all corners and sharp edges rounded off. If a rear bumper is used it must follow the same principles.

5.2. ENGINES & TANK

- a) Internal combustion engines with maximum capacity 3.5 ccm.
- b) Fuel tank capacity: 125 ccm including all piping tubes and filter up to the carburettor.
The tank shall be measured using the official EFRA measuring cylinder or in the event of damage to the official cylinder, a cylinder to DIN standard.
- c) The capacity of the fuel tank must not be adjusted by insertion of any loose object
- d) Any tank found illegal (>125 ml) after a heat or final shall be removed from the car and inspected for a second time after an initial "cool down period" of 15 minutes. This period of 15 minutes is only necessary in case the track air temperature is above 20° C.

5.3. SILENCER

- 5.3.1 Each motor must be equipped with an exhaust system and inlet silencer to reduce the amount of noise generated by the car.

The maximum noise level for a muffler with INS box is 83 dB's, measured at ten (10) metres distance and one (1) metre high for a single car.

EFRA's definition of a noise level is always final.

Only EFRA homologated mufflers published for the season are allowed on EFRA sanctioned events. The EFRA homologation number must be engraved on the sidewall of the muffler.

- 5.3.3 EFRA may noise test any car at any time during the event. EFRA noise testing equipment will make all tests regarding noise levels. EFRA's definition of noise is final. From 2017 when the noise trap is in use penalties may be given at qualifying (loss of the drivers best result) or finals (minus 1 lap on the final).

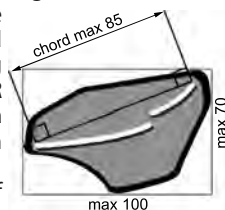
5.4. TYRES

All tyres must be black with the exception of side wall lettering. The application of any additives within the event perimeter is strictly forbidden. The penalty for that is immediate disqualification.

No spikes, tubes or additional items intended to increase traction may be either glued to the outside of tyres or passed through tyres from the inside. All EFRA ECs on 3 days scheme can be run under a designated wheel (insert, tyre and wheel to be the same for all drivers) system, no use of tyre additives are allowed at all.

5.5. WINGS

The rear wing with a maximum overall size 217 mm length and a chord of no more than 85 mm may be fitted. -The multiplane wings are authorized -The width of 85 mm is measured between the lower leading edge and the higher trailing edge. The side dams of the wing must have the IFMAR dimensions: "The side dams of the wing must have a maximum horizontal width of 100 mm and a maximum height of 70 mm. (irrespective of the orientation)



The side dams must be able to contain a square area of minimum 40 mm width and a minimum height of 50 mm to place the car identification numbers". - The single of multiplane wing must be registered inside the contour of the side dams. - The wing and the side dams must be made out of flexible material with angles rounded.

5.6. APPEARANCE

- Cars shall be a reasonable representation of the style of car used for offroad, desert or trial racing.
- Full bodysells of saloon style are permitted but may only be trimmed to expose a maximum of 50% of the tyres at full suspension depression. If such bodysells are fitted, provision for trimming shall be as in Section 5.6d.
- Where a roll-cage is fitted, an open wheel style bodysell must be fitted underneath the cage so designed as to enclose R/C equipment and fuel tank with sufficient front and side areas to allow clear display of racing numbers.
- Openings may be cut in the shell for the antenna and the pipe ends and to allow access to fuel filler, switch, and engine adjustments, and a maximum of a third of the wind screen to assist in cooling the engine if not already opened by the fuel tank access.
- The car bodysell holding the car identification number must be fitted, if it becomes loose or detached it must be fixed in the immediate next lap.

Clearance around such items to be kept to a minimum.

"Acceptance of a saloon bodysell by another EFRA Section shall be deemed to simply approval by the Off-Road Section for racing purposes."

- 5.7. Fuel may only contain methanol (methyl alcohol) CAS number 67-56-1), lubricating oil, a small content of anti-corrosion chemicals and maximum 25% of nitro methane (Cas number 75-52-5) in volume. The specific gravity of the mixture may not be heavier than 0.91 grams/cc at 20°C and standard atmospheric pressure. For quick testing a Nitromax 25 can be used , but in case of failure with the Nitromax an official density meter must be used to control the specific gravity of the fuel including the temperature recorded during the test. A specific table will be produced to report the density (gr/cc) based on the temperature (from 0 to 50°C) The tolerance on the measurement will be +/- 0.5% based on the data reported in density table. Any violation with fuel which means any proof of the use of other additives as mentioned will means 5 years of disqualification from any EFRA and IFMAR event.

5.8 Electric 1/8th Technical

5.8.1 MOTORS:

Can : Maximum overall length is 77.00 mm measured from the mounting face of the motor to the furthest most point of the end bell, not including solder tabs, lead wires or original manufacturer's logo or name. Motor mounting holes must be on 1.00- inch (25.40mm) centers.

Stator: Motor stator maximum outside diameter is 39 mm.

Rotor: External shaft diameter shall be 5mm. It may only be either a 2 pole or a 4 pole design with a maximum 12-slot stator.

5.8.2 BATTERIES:

1/8 Scale Electric Off-Road Cars will be driven by Lithium based batteries with a nominal voltage of no more than 15.2 volts (4S). It is allowed to use 2 x 2S or 4 x 1S. If multiple individual batteries are connected together (in parallel or series), then all batteries used must be of the same manufacturer brand and same Part Number.

Only homologated batteries shown on the EFRA Approved Lists on the official EFRA website will be legal for use at EFRA sanctioned events.

All Lithium Batteries must comply with the published data shown on the EFRA Approved Battery Lists. Batteries that are not compliant with the dimensional rules or published weights will not be allowed.

LiPo/LiFe drive batteries must be in a 'Lipo sack' at all times when being charged or discharged. This applies to any discharging procedures except during a race or when using organiser supplied resistors. Anybody not doing this will be penalised at the event. LiPo sack is defined as a receptacle designed for the purpose of charging LiPo/LiFe batteries and of a suitable construction as to contain a LiPo/LiFe fire.

The maximum charging cut-off voltage is 4.20v per. cell in series (16.80v for 4S). Organisers can check this voltage at any time during the event.

All Rules concerning:- Technical Specifications, Race Procedures, Homologation Procedures, for Lithium Batteries can be found in NEW APPENDIX 4.

TRANSMISSION AND DRIVE:

- Single speed transmissions only
- 4WD

5.8.4 BODYSHELLS

Body Style: The body has to be able to carry the EFRA Numbers at the front and both sides as high as possible. The body has to have a real car shape.

Body shell holes/vents: Only 9 holes with a maximum diameter of 10 mm and one hole for the antenna are allowed. Windows are not allowed to be removed. All Gears must be covered from above.

5.8.5 SPECIAL ELECTRIC SAFETY RULES

At Technical inspection it will be checked that no battery shows any deformity

or manipulation. Batteries have to be protected by the chassis or body.
Maximum voltage before any run 16:80 v before the start of the run.

6. NATIONS CUP

At every European Championship A&B EFRA will hold a Nations Cup, with drivers competing as a team representing their countries. Before the start of the official qualifying rounds each Team Manager will provide the Race Director with a maximum of four (4) names of drivers which will represent their country at this Nations Cup. Out of this four drivers the best result in points according to their final position achieved of the best three (3) of them will be added together and give the result of their National Team.

7. TROPHIES

The organizer must furnish, at least, the following trophies for the prize giving ceremony:

- Appropriate trophy for positions 1-2-3 at the 3 standard classifications, Absolute final, under 17 final and over 40 final.
- Trophy for the winner of each other electric final.
- Trophy for positions 4-13 of the Absolute final classification.
- TQ Trophy, to be presented after classification is completed and returned for the final ceremony.
- 3 pairs of plates for the Mechanics of positions 1-2-3 of the Absolute final classification, EC A & EC B
- 3 set of 5 plates to the Nations Cup positions 1-2-3, EC A & EC B
- 1 Trophy for the manufacturer of the winner car at the EFRA ECA
- 1 Trophy for the manufacturer of the winner engine at the EFRA ECA
- 1 Trophy for the manufacturer of the winner tyres at the EFRA ECA

The Trophy of the Nations cup will be kept in deposit by the Winner national association and returned before the start of the next European Championship.

APPENDIX 3 ELECTRIC CARS

A GENERAL

1. RACETRACK SPECIFICATIONS for electric classes

- 1.1.1 For EFRA-sanctioned events, where non-permanent tracks are used, the track plans have to be submitted to the Section Chairman for approval.
- 1.1.2 Track-design must include both right and left-hand turns and one or more straights.
- 1.1.3 Minimum track length: 120 meters.
- 1.1.4 Outside barriers must provide a positive means of stopping a car that misses a corner or runs out of control.
- 1.1.5 Track marking equipment must be such a shape and size to prevent the entrapment of a car or the drivers view becoming obscured. 'Horizontally laid triangular column' shaped barriers and 'Bot dots' are not to be used.
- 1.1.6 Farthest point of the track must not be more than 50 meters away from driver's rostrum.
- 1.1.7 Time-keeping: preferable on a slow part of the track to enable accurate counting.
- 1.1.8 Marshall positions based on car numbers must be equally spread around the track. It should be clear which part of the track the specified position is responsible for.
- 1.1.9 A 220-volt electrical supply must be available at EC meetings with one outlet for every four drivers in close proximity to their pitting area. All safety precautions must be observed.
- 1.1.10 For the EFRA staggered start system one start line must be marked across the track, preferably close to the time-keeping's pick-up loop position (otherwise two).
- 1.1.11 All finals will use a "F1" type grid start with a minimum of 2/3 meter alternating intervals (Sections to determine) with two rows of cars. Cars must be placed forward facing to their marker-line or startbox.
- 1.1.12 Wherever possible the start line(s) must be accessible without crossing any other part of the track.
- 1.1.13 The start line will be white or yellow coloured, have a minimum width of 5cm and shall cover the total width of the track and will also be marked on the barriers. There shall be marked boxes for the final F1 grid.
- 1.1.14 Top Qualifying driver may choose his starting position on the grid either left or right, this then to be the configuration for all remaining finals.
- 1.1.15 Marshall intervention must be minimised by using smooth obstacles such as dots or cones, of appropriated heights.
- 1.2. Specific track requirements for 1/12 & 1/10 Touring class tracks
- 1.2.1 Indoor track surface must be needle carpet with smooth joints properly attached to the floor.
- 1.2.2 For onroad racing, only smooth surfaces will be allowed.
- 1.2.3 Indoor Limits: minimum track width 2 meters between the marking lines. At the start line the track must be at least 3 meters in width as far as the first turn. Marking lines must be either white or yellow, minimum width of 2.5 cm, and must be at least 20 cm away from the edge of the racing surface or track barrier.
- 1.2.4 The track surface for 1:10 Electric Saloon Cars can be both asphalt or needle carpet.
- 1.2.5 The track surface for 1/12th electric sports cars must be indoors on needle carpet.
- 1.3 Specific track requirements for 1/10 Off Road class tracks
- 1.3.1 Width: 3 metres minimum.
- 1.3.2 The spirit of scaled down off Road racing must be adhered to. (Modified On-Road tracks are not considered suitable).

- 1.3.3 If two Classes (2WD & 4WD) are to be held on the same track, it is preferred that the track should be significantly different for the two Classes. Reverse operation is acceptable. If tracks contain permanent jumps/features that cannot be easily changed or used in the reverse direction, then it is permissible to use the same track layout for both Classes (2WD & 4WD), subject to agreement with the Section Chairman at least two (2) months prior to the event.
- 1.3.4 Maximum track length: 250 meters.
- 1.4 Requirements for time-keeping equipment
- 1.4.1 The main timing PC must automatically announce the following in clear English: 2 minutes to the start of the race 30 Seconds to the start of the race (& start order for staggered starts at this point) 10 second countdown and start 'Sound' for line starts (i.e. finals) 10 second countdown and call the cars off the line in case of staggered starts Time calls and race order every 2 minutes Cars finished & race over
- 2. MOTORS FOR ELECTRIC SCALE CARS:
FROM 2018, all Rules concerning:-
Technical Specifications and Homologation Procedures for Brushless Motors 05 Size, have been moved to NEW APPENDIX 4.**
- Each Electric Section, for all EC and GP events will clearly state which class of motors are to be used.
- From May 2016, only motors included on the EFRA Homologation Lists are allowed at EC and GP events in the Electric Classes.
- 3. BATTERIES
FROM 2018, all Rules concerning:-
Technical Specifications, Race Procedures, Homologation Procedures, for Lithium Batteries have been moved to NEW APPENDIX 4.**
- Each Electric Section will define the number of cells and nominal rated voltage.
- 3.1 1/12th. Cars will be driven by lithium based (LiPo/LiFe) batteries with a nominal voltage of no more than 3.8 volt (effective from 01.03.17). Receiver batteries are allowed.
- 3.2 1/10 Touring Scale & Formula 1 cars will be driven by lithium based (LiPo/LiFe) batteries with a nominal voltage of no more than 7.6v (LiPo)/ 6.6v (LiFe). Receiver batteries are not allowed.
- 3.3 1/10 Off-Road Scale cars will be driven by lithium based (LiPo/LiFe) batteries with a nominal voltage of no more than 7.6v (LiPo)/ 6.6v (LiFe). Receiver batteries are not allowed.
- 3.4 LiPo/LiFe drive batteries must be in a 'Lipo sack' at all times when being charged or discharged. This applies to any discharging procedures except during a race or when using organiser supplied resistors. Anybody not doing this, will be penalized at the event.
- LiPo sack is defined as a receptacle designed for the purpose of charging LiPo/LiFe batteries and of a suitable construction as to contain a LiPo/LiFe fire.
- 3.5 **The maximum charging cut-off will remain at 4.20v per cell.**
- 4. ELECTRONIC DRIVING AIDS**
- 4.1 The radio control receiver in the car may operate steering and motor management. A separate battery supply for the powering of the timing equipment is allowed. Using the receiver to capture electrical signals from sensors carried in the car is prohibited, be it wireless or not.
- 4.2 Automated steering, gyroscopes to control car movement, traction control, active suspension are not allowed
- 4.3 The speed controller may have a device to limit the current/voltage passed

from the batteries to the drive motor (e.g. timed delay, current limiter, keyboard programs) as well as a passive data recording device but setting or programming of these devices must only be possible whilst the car is stationary.

- 4.3.1 Events that are designated for using 'Spec. Class Brushless motors' will only allow a Speedo that has a 'zero timing profile', that does not alter the preset mechanical timing of the motor in any way and disables any advanced motor control; functions (ie. Boost, Cheat mode, Turbo etc.). This profile is known as ' Boost 0'. The commutation sequence is limited to "6-step" type and commutation of the Speed control must follow the motors hall sensor signals 1:1. Therefore no change of timing (either advance or retard) is allowed at any RPM." When the "Boost 0" profile is activated, it will be identified by a blinking LED while the ESC is armed and in neutral position.
- 4.4 No other signals than these for the official lap counting transponder may be sent from the car.
- 4.5 Any competitor found in contravention of the spirit or fact will be disqualified from the meeting. The race organiser has the right to inspect any car, its components and transmitter at any time during the race event.

5. DRIVER PROCEDURE

- 5.1 Before your heat, and if hand out equipment is available and needed, collect the auto timing equipment from dispatch and fix it to the car.
- 5.1.1 When hand out auto-timing equipment is used, it is the driver's responsibility to fit it appropriately to the car and to remove it after timed heat if required.
- 5.2 When a personal transponder is used the driver is entirely responsible for the efficient functioning of the device.
- 5.3 As soon as race control allows, collect your transmitter, switch on and drive car to the start line.
- 5.4 When your heat has finished. Return transmitter, retrieve your car, switch off and bring it to scrutinizing with the handout auto timing equipment if required.
- 5.5 Marshal the heat following your own at the numbered position corresponding to your car number.
- 5.6 Collect your car from scrutinizing after marshalling.
- 5.7 The race director may demand the drivers to stand on the indicated positions on the rostrum.
- 5.8 The race director has absolute authority at the meeting but refer to your team manager if you encounter problems.
- 5.9 It is not allowed to enter/access the rostrum until the previous race is declared over by race control. It is not allowed to leave the rostrum before the race is declared over by race control. Penalties can be applied to competitors that do not adhere to this procedure.

7. EUROPEAN CHAMPIONSHIPS

- 7.1 European Championships will take place every year there is no World Championship in the concerned class held within Europe. However the general meeting can decide otherwise if deemed to be in the interest of the sport.
 - 7.1.1 European Championships are held in the following classes:
 - 1/10 Off-Road Modified, 2WD & 4WD as separate Classes.
 - 1/12 Modified, using no less than 6.5 turn modified brushless and blinky.
 - 1/12 Spec using 13.5 T Spec. brushless and blinky.
 - 1/10 Touring Cars Modified & 1/10 Touring Cars using 13.5T Spec. Brushless
 - 1/10 Formula One using 21.5T Spec. Brushless.
- Starting May 2016, only motors included on the EFRA Homologation Lists are allowed at EC and GP events in the above Classes.

7.2 ALLOCATIONS

- 7.2.1 The country allocations for the EFRA European Championships will be established by the section meeting and published in the minutes.
- 7.2.2 Allocation and re-allocations are according to the general rules.
- 7.2.3 If available all countries receive re-allocated places in order of the allocation list, unless stated otherwise in this list. Any Federation requiring to be considered for re-allocations should put their request in writing to the Section Chairman no later than 1st January.
- 7.2.4 100 entrants for 1/12 and 130 for 1/10 Off-Road (One may consider up to 150 participants if timetable and facilities i.e. driver tables etc, permit) are to be accepted for European Championships and GP's. For 1/10 Touring Car Modified & 1/10 Touring Car 13.5T Spec. Brushless up to 150 entrants have to be accepted for European Championships and GPs. The allocations 1/10 Touring Car modified will be decided at the section meeting first. When all allocations are confirmed the remainder of unfilled entries made available as open entry for the 1/10 Touring spec class.
- 7.2.5 For EC's any countries allotment is in no case to be higher than 33% of the total number of allocated entries ("No-Show's" and last minute cancelling drivers are not to be considered).
- 7.2.6
- a) The preceding year's European Champion will automatically be allocated a place from the EFRA allocation for the World Championships.
 - b) The reigning World Champion, if European, will automatically be allocated a place in the following two European Championships.
 - c) The reigning European Champion will automatically be allocated a place in the following European Championship
- 7.2.7. Drivers that finished in the Top 10 at an 1/10 Touring Car European Championship (indoor or outdoor) in the last 2 years are not allowed to participate at the 1/10 Touring Cars 13.5T Spec. Brushless European Championship. At the 1/10 Touring Car Modified & 1/10 Touring Car 13.5T Spec. Brushless European Championships drivers are only allowed to enter one of the two classes.

8. TIME TABLES:

- 8.1 The Race Organiser must schedule all events for each day to be completed and the track closed by 18.30 hours. The pit area must be available for 1:30 hour after the last race. For 1/12th scale events it is recommend to complete each day by 19.30. It is recommended to end the last day early enough to allow participants to start their return journey.
- 8.1.1. 1/12th EUROPEAN CHAMPIONSHIP:
- Friday: 1-2 Rounds of un-timed practice (organizers discretion) 2 Rounds of timed practice Opening Ceremony (a limited heat re-seed, based on average lap times of timed practice 1 & 2, will be carried out while the opening ceremony is taking place) 1-2 Rounds of timed practice in new heat format 1 Round of qualifying (In heats used for the last 2 rounds of controlled practice). Total of 5 or 6 rounds of qualifying to be run depending on amount of participants). 6 rounds of qualifying recommended to be run.
- Saturday: 1 Round of controlled practice in heats (warm-up) 4-8min recommended
5-6 Rounds of Qualifying (depending if one round was run on Friday already)
- Sunday: 1 Controlled practice for A-final
3 rounds (legs) of all finals

- 8.1.2. 1/10th Touring & 1/10th Formula One EUROPEAN CHAMPIONSHIP:
THURSDAY: 09:00 Registration Open and a minimum 2 timed practice, 2 rounds of controlled Practice and 1 Qualifying Round
FRIDAY 09:00 1 timed practice (minimum) and 4 Qualifying Rounds
SATURDAY 09:00 1 Practice Final (minimum) and 3 finals for all There will be a minimum of 10 min between start of round. Based on the numbers of participants, this timetable can be changed by the organiser with agreement by the section chairman.
- 8.1.3. 1/10 Elec. Off-Road EUROPEAN CHAMPIONSHIP:
MONDAY: Free practice 2WD, Registration and Technical Inspection
TUESDAY: Two Rounds of Controlled Practice and Qualifying Rounds 1-3
WEDNESDAY: Schedule permitting, one hour of unofficial practice in Heat Order of Round 4
Qualifying Rounds 4-5, Finals and Prize Ceremony
THURSDAY: Free practice 4WD, Registration and Technical Inspection
FRIDAY: Two Rounds of Controlled Practice and Qualifying Rounds 1-3
SATURDAY: Schedule permitting, one hour of unofficial practice in Heat Order of Round 4.
Qualifying Rounds 4-5, Finals and Prize Ceremony

The Race Organiser can change the above timetable providing he does so well in advance. ALL changes to the Schedule or alterations to times of any Heats/ Finals must be clearly identified to all Team managers and Officials in written form, at least one hour before such changes take place, if any procedures are being brought forward.

No request for a delayed start in Qualifying will be granted. In "A" Finals, a competitor may request a delayed start of up to a maximum of eight (8) minutes for the repair of breakages only, subject to the Race Director agreement. The competitor(s) involved will then start from the back of the grid. This delay will only be granted once for any "A" Final.

8.2 TIMETABLE FOR GRAND PRIX MEETINGS

- 8.2.1 The timetable for Grand Prix will be left to the discretion of the Organisers taking into consideration the number of competitors in each class. Organiser can determine the Timetable for all racing

9. RACING FORMAT EFRA EUROPEAN CHAMPIONSHIPS AND GRAND PRIX

9.1 PRACTICE

- 9.1.1 Free practice for E.C. events must be allowed as stated in the concerned timetable. No practice or racing is allowed on the track for 7 days preceding this (see also General rule 8.1.).
- 9.1.2 For all EC's: 2 series of organised practice with cars grouped in heats will be held with at least one using the official time-keeping system.
- 9.1.3 During controlled practice the driver must be present and his transmitter switched on for checking radio interference.
- 9.1.4 Practice heats at 1/10 Touring Car, 1/10 Touring Car 13.5T Spec. Brushless & 1/10 F1 European Championships must not be longer than 5 minutes. In between two heats there can be a break of up to 3 minutes maximum.

9.2 START PROCEDURE

- 9.2.1 There will be a minimum of seven (7) minutes between the starts of heats, (10) ten for 1/12th.
- 9.2.2 Qualifying heats: the delayed start procedure (Staggered Start) will be used and a verbal start signal, mentioning the car number, will be given for each car. Cars

must start when directed by the Start Official. Cars not starting when directed may start after the last car has crossed the lap counting loop

9.2.3 Finals: After the 30 seconds signal, cars not on their start grid must be placed at the rear of the grid. An audible signal generated by the timing equipment will be given after the "ten seconds" in a random delay of between 1 and 5 seconds.

9.2.4 Jump-starts (after 10-second signal) -front wheels crossing start line or their marked startbox - 10-second penalty. Front wheels crossing the line or box by one-meter: 1 lap penalty. Jump-starts are no reason for a re-start.

9.3 RESTART PROCEDURE

9.3.1 The Race Director or the Assistant Director, in absence of the race director, may order a restart.

9.3.2 In the event of an aborted start procedure; race must restart at least from the "30 seconds" before the start" announcement.

9.3.3 If the race is stopped before the first car has completed a full lap of the track then the race will be immediately re-started after the reason for the stoppage has been cleared. If the race is stopped after the first car has completed a full lap then the race will be re-run at a convenient time allowing for the recharging of batteries.

9.4 QUALIFYING

9.4.1 1/12 Track:- The Qualifying Heats and Finals will be 8 minutes and the last lap plus the time to complete this last lap up to a max of 40 seconds. The Round by Round point system will be used. This system awards points to all drivers based on their finish position against all others for each round individually.

When the 'Round by Round' qualifying method is used, the number of Qualifying Rounds to count are as follows :-

Number of Rounds completed	1	2	3	4	5	6
To count - 1/12	Void	1	2	2	2	3

If less than two Rounds are completed the event is declared null and void.

Any Qualifying Round has to be completed for any Heats in that Round to be awarded points that count. Fastest competitor (based on laps & time) in each Round will score zero (0) points, second place 2 points, third place 3 points, fourth place 4 points and so on. If two (or more) competitors achieve an equal time in any Round they will be awarded equal points. The next competitor not included in the tie will be awarded points corresponding to his position in the particular Round. (NOTE: drivers not recording a time or having a time disqualified in any Round score points for last place in that Round).

Overall Qualifying positions are decided by each drivers 'best' (lowest) points being added together, based on the number of Rounds to count as shown in above table. In the event of a tied position the driver with the single highest finishing position in either of the best Rounds that counted will be awarded the tie (eg. 1+3 = 4 beats 2+2 = 4). In the event of a continuing tie then the laps and times from the best points Round will be compared. The driver with the fastest laps and time will be awarded the tie. In the case of a continuing tie, then the times from the second best scores will be compared.

Only counting Rounds will be used to decide Qualifying positions (or ties), all other Qualifying Round scores and times will be discarded.

If the intended maximum number of Rounds cannot be completed, due to weather or unforeseen circumstances, the number of Rounds to count will follow the same format as the table above.

9.4.2 1/10 Off-Road:- The Qualifying Heats and Finals will be 5 minutes and the last lap plus the time to complete this last lap up to a max of 40 seconds. The Round by

Round point system will be used. This system awards points to all drivers based on their finish position against all others for each round individually.

When the 'Round by Round' qualifying method is used, the number of Qualifying Rounds to count are as follows :-

Number of Rounds completed	1	2	3	4	5	6
To count - 1/10 Off-Road	Void	1	2	2	2	3

If less than two Rounds are completed the event is declared null and void.

Any Qualifying Round has to be completed for any Heats in that Round to be awarded points that count.

Fastest competitor (based on laps & time) in each Round will score zero (0) points, second place 2 points, third place 3 points, fourth place 4 points and so on. If two (or more) competitors achieve an equal time in any Round they will be awarded equal points. The next competitor not included in the tie will be awarded points corresponding to his position in the particular Round. (NOTE: drivers not recording a time or having a time disqualified in any Round score points for last place in that Round)

Overall Qualifying positions are decided by each drivers 'best' (lowest) points being added together, based on the number of Rounds to count as shown in above table. In the event of a tied position the driver with the single highest finishing position in either of the best Rounds that counted will be awarded the tie (eg. 1+3 = 4 beats 2+2 = 4). In the event of a continuing tie then the laps and times from the best points Round will be compared. The driver with the fastest laps and time will be awarded the tie. In the case of a continuing tie, then the times from the second best scores will be compared.

Only counting Rounds will be used to decide Qualifying positions (or ties), all other Qualifying Round scores and times will be discarded.

If the intended maximum number of Rounds cannot be completed, due to weather or unforeseen circumstances, the number of Rounds to count will follow the same format as the table above.

- 9.4.3 1/10 Touring Cars & 1/10 Formula 1: The Qualifying Heats and Finals will be 5 minutes and the last lap plus the time to complete this last lap up to a max of 40 seconds.

At the start of the event at Team Managers Meeting (on Friday morning) it will be decided if the Qualification Rounds will be declared dry or wet based on the weather conditions.

- 9.4.3a If Qualifying Rounds are declared to be dry, then the Round by Round point system will be used. The number of Rounds to count are as follows:

Number of Rounds completed	1	2	3	4	5	6
To count - 1/10 Touring Car	Void	1	2	2	2	3

If less than two Rounds are completed the event is declared null and void.

Any Qualifying Round has to be completed for any Heats in that Round to be awarded points that count.

Fastest competitor (based on laps & time) in each Round will score zero (0) points, second place 2 points, third place 3 points, fourth place 4 points and so on. If two (or more) competitors achieve an equal time in any Round they will be awarded equal points. The next competitor not included in the tie will be awarded points corresponding to his position in the particular Round. (NOTE: drivers not recording a time or having a time disqualified in any Round score points for last place in that Round)

Overall Qualifying positions are decided by each drivers 'best' (lowest) points being added together, based on the number of Rounds to count as shown in

above table. In the event of a tied position the driver with the single highest finishing position in either of the best Rounds that counted will be awarded the tie (eg. 1+3 = 4 beats 2+2 = 4). In the event of a continuing tie then the laps and times from the best points Round will be compared.

The driver with the fastest laps and time will be awarded the tie. In the case of a continuing tie, then the times from the second best scores will be compared. Only counting Rounds will be used to decide Qualifying positions (or ties), all other Qualifying Round scores and times will be discarded.

If the intended maximum number of Rounds cannot be completed, due to weather or unforeseen circumstances, the number of Rounds to count will follow the same format as the table above.

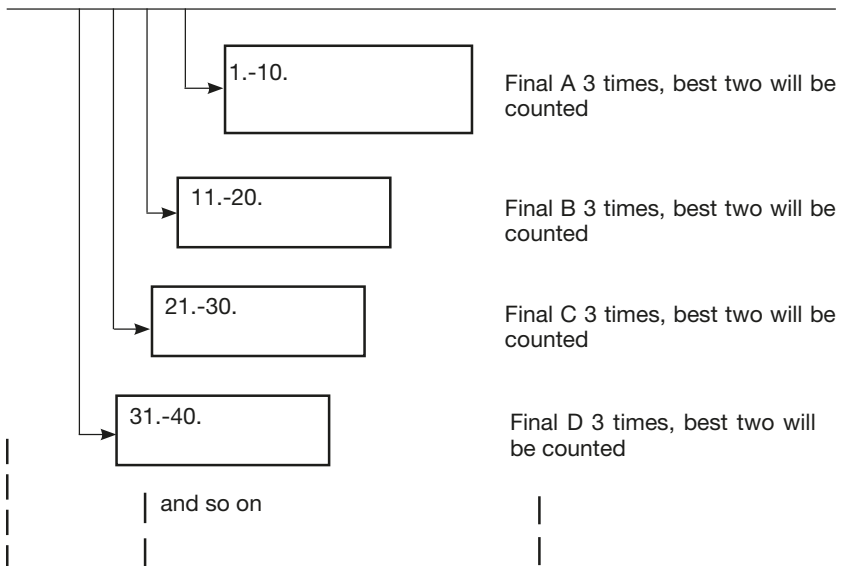
9.4.3b If Qualifying Rounds are declared to be wet, then each competitors 2 fastest times will be added together to decide the Final Qualifying order.

Any Qualifying Round has to be completed for the times of any Heats in that Round to be used.

If it is impossible to complete all qualifying heats under the same weather conditions, (wet, semi wet or total dry) the following rule will become effective:- Before the start of every heat the race director has to announce if it will be a dry heat or a wet heat.

The Race Director is also allowed to declare during a Heat, that the Heat is "now running under wet conditions". After a Heat has been completed, the Race Director can declare that the specific Heat was run under wet conditions if he/she decides the average lap times during the heat (or part of the Heat) were more than 20% slower.

If every Heat (Group) has at least one dry race in the Qualifying Rounds completed, then the 2 fastest times from all completed Rounds will be used. If any Heat (Group) does not have a dry race, then only the 2 fastest times from the wet Rounds will be used to decide the Final Qualifying order.



- 9.4.4 If the Round by Round system is used:- Then any driver incurring a penalty which results in his time and therefore points in any Round being disallowed, then all drivers below the disallowed position will move up one place. (In the event the penalized driver is a tie on obtained points the one with the best time will be lost).
- 9.4.5 The qualifying heats will be a maximum of 10 drivers and where possible equal number of drivers in each.
- 9.4.6 Cars will start in one line across the track in staggered start mode for the qualifying heats.
- 9.4.7 During the first round of qualifying, heat-starting order will be determined by the driver's performance in controlled practice based on his 2/3 best consecutive laps during the last two Rounds of controlled practice (Start order for CP2 is determined by the finishing time of CP1). During further rounds, heat-starting order will be by the fastest time of drivers in the heat from any previous rounds results used for qualifying positions. This will apply whether the Fastest Time Qualifying System or Round by Round System is used.
- 9.4.8 In order to give drivers an equal chance during qualification, organiser may reseed these drivers that are obviously way above or under the average in their group into a more suitable heat whenever possible.
- 9.4.9 Off road heats will be run in the following sequence for the 5 qualifying rounds:
Round 1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Round 2: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 1, 2, 3
Round 3: 7, 8, 9, 10, 11, 12, 13, 1, 2, 3, 4, 5, 6
Round 4: 10, 11, 12, 13, 1, 2, 3, 4, 5, 6, 7, 8, 9
Round 5: 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1.
On road heats will always be run from 1 to 15.
- 9.4.10 If the number of Heats differs from the format detailed in 9.4.9, or if the event is planned with more/less Rounds, a sequence following this general theme has to be used.
- 9.4.11 The qualifying results will determine the composition of all finals with the top 10 proceeding to the "A" final and so on down.
- 9.4.12 Off road: One round of controlled practice using the official time keeping will be organized for the A finalists. On road: A controlled practice will be applicable to all finals.
- 9.4.13 Qualifying results will be published after each round
- 10 FINALS**
- 10.1 There will be 10 drivers in all finals where possible. Finals will be organized for all competitors.
- 10.1.1 If the lowest Sub-Final has less than 4 drivers, they will be mixed as equally as possible in the next Sub-Final, respecting their qualifying position for their start order
- 10.2 The winner determined from the combined A finals will be the champion. If the A finals cannot be completed, the awards will be made based on the final Qualifying positions.
- 10.3 Off Road: The "A" final will be run in three legs. All other Finals will be one leg. Each race of the main "A" final will be considered a separate race. The finals will be run from slow to fast with the 3 legs of the "A" final in between.
On Road: All finals will be run in 3 legs from slow to fast.
- 10.4 If three leg finals are run, then the best 2 out of 3 to count.
- 10.5 The winner of a final gets 1 point; the second gets 2 points and so on up to 10 points for the 10th driver. In the event of a tie regarding time in a Final, the points will be equally awarded to each driver and the next driver not tying will be two points more.

- 10.6 In the event of a tied position the driver with the single highest finishing position in either of the best 2 finals that counted will be awarded the tie. In the event of a continuing tie then the laps and times from the highest finishing position will be compared. The driver with the fastest laps and time total will be awarded the tie. In the case of a continuing tie, then the times from the second best position will be compared.
When some drivers of a final do not run a final, they will be awarded the remaining points in the order of their car numbers.
- 10.7 Cars, which do not pass the start/finish line after the prescribed race time, will be classified according to the number of laps recorded. The "A" finalist with the lowest number of points will be the European Champion or the winner of the grand prix.
- 10.8 All final results will be published at least 10 minutes before prize giving.
- 10.9 There will be awards at least for all "A" finalists, and the winners of any other final. If no round of Final(s) are completed the results of the event are taken on qualifying positions.
- 11. TECHNICAL INSPECTION**
- 11.1 All cars may be called for technical inspection at any time but must always be presented for scrutinizing. (11.4 remains in force).
- 11.2 Failure to meet the technical rules will result in loss of the concerned heat result.
- 11.3 Non-compliance obviously resulting from race incidents will not be accounted for at scrutinising
- 11.4 After "A" finals the cars must be collected and impounded by organiser's staff ("parc fermé").
- 11.5 The motors of the top 3 finishers may be dismantled in order to check their conformity with the rules.
- 11.6 It is allowed to change the chassis of the car, providing the replacement is of the same design, specifications and material as the original item that was registered prior to the start of racing. The new chassis has to be registered and presented to the authority.
- 12. GENERAL REQUIREMENTS FOR COMPETITION CARS IN ELECTRIC CLASSES**
- 12.1 Cars must be realistic and when initially entered in the meeting have neatly finished and complete body shells.
- 12.2 Open cockpit cars must have a realistic driver figure fitted in an appropriate position at all times when racing. This consists of at least a driver's head/helmet and should be painted in a realistic appearance, colour and garb.
- 12.3 The body and chassis must be securely joined at all times when the car is on the track. Driving on the track without body is not to be allowed at any time.
- 12.4 All cars shall have identifying numbers in at least three positions, right, left and on front of the car. The numbers must be put on the body shell so the numbers are easily seen by the referee or race director.
- 12.5 No car shall be constructed so as to be dangerous or damage the track surface or other competitor's cars.
- 12.6 The cars must allow fitting a time keeping transponder in a suitable position with the correct orientation.
- 12.7 Any type of speed controller, not causing interference's of any kind to lap count, computers, transmitters etc., may be used, but it must be contained within the car and not protrude through the body shell.
- 12.8 All cars must have a transparent windscreen. Open or painted windscreens are not allowed except for models of prototypes that did not have windscreens.
- 12.9 Side or rear windows must be clear. The driver may have his name on the side window in the same scale as the car.

- 12.10 Openings in the body must be appropriate to the full size prototype (Scoops, vents etc.).
- 12.11 Wheel arches must be cut out if the prototype ran that way.
- 12.12 Tyres must be black except sidewall detailing.
- 12.13 Openings for wing mount or antenna shall provide no more than 10 mm clearance.
- 12.14 Definition of a wing: A wing is an additional item attached to the car.
- 12.15 Definition of a Spoiler: A spoiler is that which is moulded in the body.
- 12.16 Spoiler and side dam dimensions include that which is moulded into the body.
- 12.17 Bumpers are not required. If fitted, bumpers must be constructed so as to minimise injury that may result from being hit by a car. The overall width may not exceed the overall width of the front of the car, including wheels.
- 12.18 Wire bumpers shall be made of wire between 2.5 mm and 4 mm in diameter. Bumpers made from sheet type material shall be between 2.5 mm and 6.5 mm thick, with all exposed edges smooth and well rounded. Closed cell foam (i.e. PU-RIM) bumpers may be 2cm thick Rigid blade-like bumpers made of hard, non-resilient material such as metal, brittle plastic, plywood, masonite etc., are not allowed.
- 12.19 Allweight minima are applicable to cars equipped with fixed personal transponder as well as for those using (hand-out) auto-powered transponders. The later are to match the minima including transponder (whatever the type).

B REQUIREMENTS FOR ELECTRIC ON ROAD CLASSES

1. GENERALITIES

- 1.1 On carpet tracks a minimum ground clearance of 3mm (excluding spur gear) for 1/12 and 5mm for 1/10 is mandatory at the start of each heat and final.
- 1.2 Up to a maximum of two chassis may be submitted to Technical inspection, either of these chassis may be used at any time during the event. The second chassis may be approved after the event has started.

2. BODIES:

- 2.1 Any newly homologated bodies must have the part number moulded into the front windscreen. For 1/10 Formula One Spec class, no body homologation is required.
- 2.2 Body cannot be trimmed higher than lower body trim lines.
- 2.3 No portion of chassis, wheels and tyres, or equipment may extend beyond body except to the rear. (Exception -Formula car suspension chassis and abbreviated bodies with no engine cover).
- 2.4 No more than 1.5 mm of wheel outside diameter may be exposed on the outside of the wheel (i.e. not covered by the tyre). If wheel discs are used they should be secured by a screw or clip.
- 2.5 In all classes where possible, an 8th scale number must in addition be placed on the roof of the body (NASCAR style) for absolute best identification. Numbers on front windscreens must be avoided
- 2.6 The organizers will supply the numbers.

3. ROLL-OVER MASTS:

- 3.1 A rollover mast may be fitted. If so, it must have a blunt end for safety reasons, terminate in a closed loop at least 4.75 mm O.D. or a ball or button not less than 8 mm in diameter.
- 3.2 If a rollover mast and radio antenna is fitted, the antenna must be part of the mast along its length. Max. Height from ground 35 cm.

4. **BUMPERS**

- 4.1 All cars may run a rear bumper, which must be behind rear tyres.
 4.2 If used, front bumpers must be flat; parallel to the ground in all directions.

5. **TYRE ADDITIVES / TRACTION IMPROVING TREATMENTS:**

- 5.1 All Tyre treatments, governed by health, nuisance and track damage considerations will be at the discretion of the organisers and EFRA. I.e. Normally only odourless tyre cleaners or traction additives will be allowed.

- 5.2 It is down to the organiser / section chairman to specify the additive to be used at an event.

(1/12 scale only) A list of legal additives will be maintained by the section chairman and published at least 1 month prior to each event. Only tyre additives on the published list may be used. New additives may be added during a season, subject to approval by the section chairman.

The use of tyre treatments is the user's responsibility. EFRA draw organiser's attention to the possible hazard created by large numbers of competitors using tyre treatments in a confined space. EFRA recommend that the competitor adheres to the methods of usage as stated by the supplier of the treatment.

- 5.4 At European Championships it is only allowed to use the tyre additive agreed by the section meeting at the EFRA AGM together with the race organiser (race organiser will make their recommendation).

- 5.5 It is recommended that the chemical components of these products must be harmless for people and environment. Liability at the use of tyre additives lies at the user and manufacturer.

6. **PARTICULAR TO 1/12th SPORTS CARS**

The ethos of this class is the preparation and piloting skills, while operating within tightly controlled rules, bring rewards rather than the technological advantage of any particular marque of car. The rules have been questioned relating to drive and suspension. We will assume that the following is true.

Rear suspension and drive. Single solid one-piece axle only. No independent suspension allowed. A differential may be used.

Anything other than this will be presented at the first meeting of the EC for the team Managers to consider if the deviation is within the spirit of the sport.

- 6.1 **BODIES:**

- 6.1.1 Body shells must be submitted to the EFRA Body shell Homologation Officer for approval. A list of homologated bodies must be sent with the drivers package and to the organisers and be available on the EFRA website.

The following is the specification for approval of 1/12 Prototype Sports car body shells. They should be used by the Homologation officer to enable clear and consistent application of standards for future approvals,

Lower body cut line is to be used as the reference plane for all height dimensions.

Minimum cockpit height – Closed cockpit – 55mm (Excluding any air scoops / air boxes) Minimum cockpit width – Closed cockpit – 70mm (Measured at the point it intersects with the side pod)

Minimum cockpit width - 55mm (measured at the lower window line)

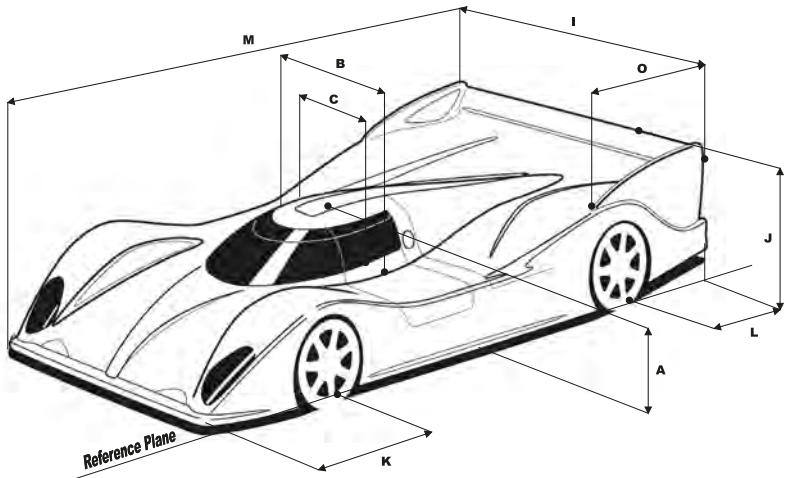
Minimum Roll bar height – Open cockpit – 55mm

Maximum distance from Drivers helmet to top of roll bar – Open cockpit -11mm

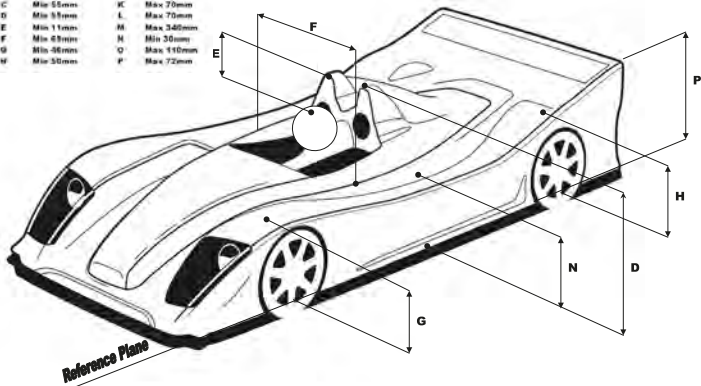
Minimum cockpit width – Open cockpit – 65mm (Measured at the point it intersects with the side pod)

Minimum front wheel arch height – 46mm (Including vents) (measured at a point 15mm from edge of body)

- Minimum rear wheel arch height – 50mm (measured at a point 10mm from edge of body)
- Maximum overall width – 174mm
- Minimum overall width – 168mm
- Max. wing / spoiler height – 65mm
- Max. front overhang (From centre of front wheel)– 70mm
- Max. rear overhang (from centre of rear wheel) – 70mm
- Max. length overall – 340mm
- Minimum side pod height – 30mm
- The side dam must blend fully (disappear) into the main body shape within 110mm of the rear edge of the body/side dam.
- Max side dam height – 72mm
- The body side forward of the side dam must have a radiused edge, no lips or upward extensions are acceptable
- Bodies must be a reasonable representation of a full size LMES / ALMS / LMP / WSC prototype.



A.	Min 50mm	I.	168 to 174mm
B.	Min 70mm	J.	Max 65mm
C.	Min 15mm	K.	Max 70mm
D.	Min 50mm	L.	Max 70mm
E.	Min 10mm	M.	Max 340mm
F.	Min 30mm	N.	Min 30mm
G.	Min 30mm	O.	Max 110mm
H.	Min 30mm	P.	Max 72mm



Open cockpit cars to have twin roll bars as current LMES / ALMS

Open cockpit cars must have a representative drivers helmet and cockpit opening
The name of the prototype must be used for the homologation process.

The name of the prototype does not have to be used for general sales and marketing.

Only fins or strakes that are present on the full size prototype will be allowed.

The body must not be cut above the lower cut line.

Cut-outs in the shell will be allowed only if clearly defined on the full size prototype.

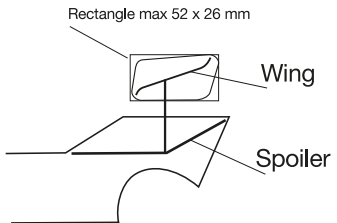
Once Homologated there must be no changes to the design, trim lines, detail lines or any feature of the body. All changes will require resubmission for approval and an additional revision letter added to the part number- Example 15001A - Original - 15001B for a 2ndRev. Etc

The manufacturer's par number must be clearly marked on the shell alongside the windscreen area

All new homologation must meet the above criteria.

6.1.2 Wheel cut-outs may not be more than 15 mm larger than tyre radius (Exception -scale size and/or shape wheel cut-outs). Wheel wells must be cut out if those on the original car were cut out.

6.1.3 Only one wing is allowed on the car unless the actual car had a second wing. The second wing must be scale within 10% in size and location. The wing may be not closer than 6.5 mm to any part of the body other than the tail fins or side dams.



6.2 MEASUREMENTS AND WEIGHTS

Maximum overall width of the car: 172 mm (Excluding shell)

Minimum weight: 730 grams.

Wing: Maximum width: 172 mm, the wing profile has to fit in a rectangle of 52 mm (height) x 26 mm

Spoilers: Max. Spoiler height: 25 mm, max length 35 mm. These dimensions include the moulded in portions of the body, the use of a gurney flap to extend the wing length is acceptable.

Bumper: May extend 6.5 mm beyond side of body or to 172 mm whichever is less. May extend 13 mm forward of body, but in same shape as body.

Wheel rim diameter: Minimum 29 mm and Maximum 38 mm. (Including all non-rubber parts of the wheel and tyre). Wheel nuts and/ or axles must not protrude more than 2 mm beyond the wheel/tyre outside face.

6.3 TYRES

6.3.1 All tyre sizes apply at the start of the race.

6.3.2 Tyres Minimum width 13 mm. Maximum width 40 mm. The tyre width is measured at the widest part of the tread or sidewall.

6.3.3 Any tyre diameters will be allowed. The diameter must be maintained over at least the minimum width of the tyre.

6.3.4 Tyres must not be wet or greasy from additive at the start of a heat or final.

6.3.5 Technical Inspection can demand to check the tyres prior to each start

7. PARTICULAR TO 1:10 ELECTRIC SALOON CARS

7.1 BODIES:

7.1.1 Only bodies that comply to the body guideline for 1:10 electric touring car bodies as per drawings in this handbook of real touring cars that have a minimum length

of 4200mm in the original car are allowed. No GT or Sports car bodies allowed. All Touring car bodyshells to be submitted to the EFRA Bodyshell Homologation officer for approval.

- 7.1.2 The rear bumper cut-line to be maximum 35 mm from track surface, as detailed in GBS drawings. This will be measured with the chassis on a 15.0 mm block, so based on a 5 mm ground clearance the dimension used will be 45.0 mm.

7.2 MEASUREMENTS AND WEIGHTS

(NOTE: Heights measured with chassis on 15.0 mm block, based on 5 mm ground clearance)

Maximum overall width (with body): 195 mm

Maximum overall width (without body): 190 mm

Minimum weight: 1320 gram

Wing: maximum wing size including endplates: 190w x 40d x 20h mm Wings to be mounted directly to the body (no spacer between shell and wing), on the moulded mounts provided at the back of the shell.

All features (front splitter/bumpers) from the original moulding must remain on the shell.

Maximum wheel rim diameter (excl. ribs): 50 mm

The use of multiple-speed transmissions (gearboxes) and slipper clutches is not allowed.

All cars must have independent suspension operating on all four wheels (no PRO 10 cars allowed).

Only a fixed single ratio transmission is allowed and it may not include a mechanical device/s between the drive motor output and the gearbox input for the purposes of controlling torque (e.g. slipper clutches).

7.3 TYRES

- 7.3.1. Only moulded tyres are allowed (no sponge tyres).

Maximum tyre width 28 mm

Minimum tyre width 24 mm

- 7.3.2. At EC's it is only allowed to use the tyres that were agreed by the section meeting at the EFRA AGM together with the race organiser (race organiser will make their recommendation). For dry weather racing there will be a single control slick tyre with insert and will come pre-glued to the wheel (insert, tyre and wheel to be same for all drivers) and Commercially available via model/hobby shops since minimum 3 months at the time the tyre choice will be presented at the AGM. For wet/damp conditions there will also be a pre-glued control set of tyres. For use at the EC, the tyres must be bought from the organiser. For each competitor there must be at least 1 set of dry and wet weather tyres available to be bought for practice at the EC.

Maximum price fixed for each EC event at the AGM. The supplier of the tyre must guarantee that the wheels tyres are of the same batch/production run. They must be the only source of supply for the event.

Note for 2019

This rule will also reflect the nominated tyre for the 2019 10th EC.

[F1 front tyres: 803070 - HUDY 1/10 Formula Rubber Tire - Front. \(Click here\)](#)

[F1 rear tyres: 803080 - HUDY 1/10 Formula Rubber Tire - Rear. \(Click here\)](#)

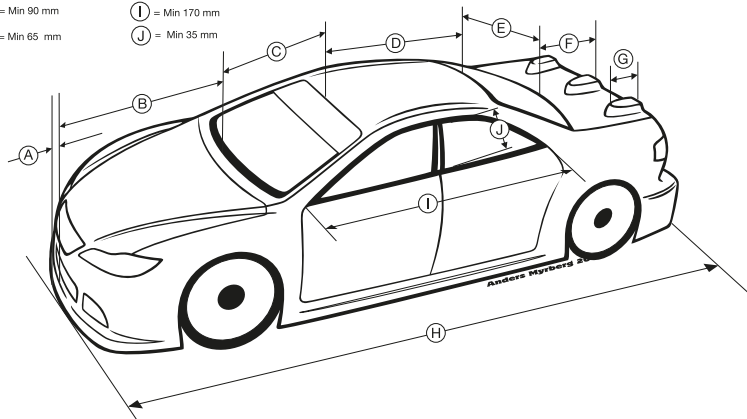
[TC Tyres: 803062 - HUDY 1/10 TC Tires A1-36 - Asphalt. \(Click here\)](#)

- 7.3.3. Tyre Allowances.

For Spec Class -2 sets of 4 dry weather tyres (rubber) are allowed for qualifying, and 1 additional set of 4 dry weather tyres is allowed for finals. Tyres from qualifying may be used in the finals. 1 set of 4 wet weather tyres is allowed to be

GLOBAL BODY SPEC (GBS for Electric Sedans)

- | | |
|------------------|---------------------------------|
| (A) = Max 10 mm | (F) = Max 65 mm |
| (B) = Min 105 mm | (G) = Max 25 mm (Max 3 posts) |
| (C) = Max 85 mm | (H) = Min 410 mm |
| (D) = Min 90 mm | (I) = Min 170 mm |
| (E) = Min 65 mm | (J) = Min 35 mm |



used for both qualifying and finals.

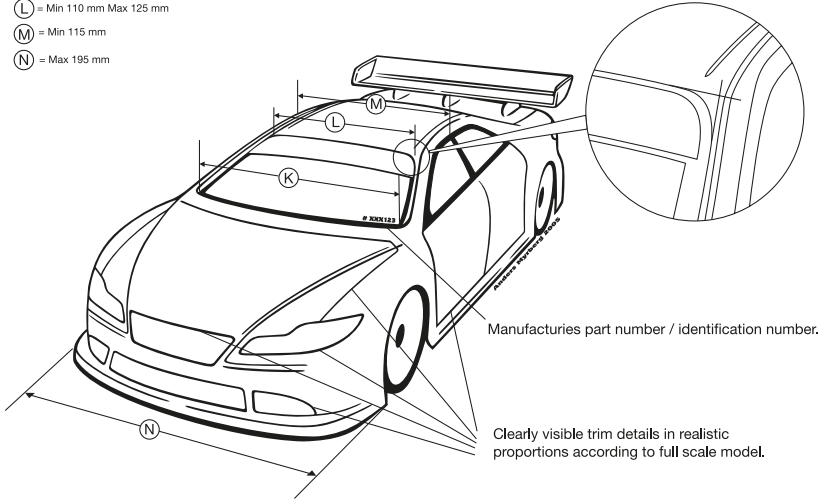
For Modified Class: 5 sets of 4 dry weather tyres are allowed for qualifying, and 1 additional set of 4 dry weather tyres is allowed for finals. Tyres from qualifying may be used in the finals. 1 set of 4 wet weather tyres is allowed to be used for both qualifying and finals.

For all A finals only (Mod and Spec) - 1 new set per final may be used. For Formula Class - 1 set of 4 dry weather tyres (rubber) is allowed for qualifying and 1 additional set of rear dry weather tyres is allowed for the finals. Tyres from qualifying may be used in the finals.

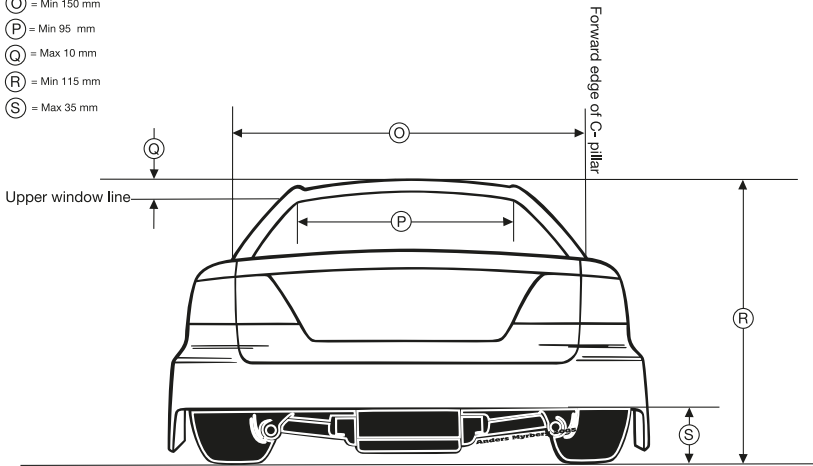
For all A finals only (Mod, Spec and F1) - 1 new set per final may be used. In case of prolonged wet weather conditions, the number of sets of wet weather tyres will be increased to two sets for qualifying and 1 set for the finals. For A finals only (for all classes) 1 new set of wet weather tyres per final may be used.

- 7.3.4. Tyres from qualifying may be used in the finals
- 7.3.5. For wet/damp conditions a treaded tyre may be used but only when the Race Director gives his permission. This treaded wet tyre does not form part of the limited number of sets.
- 7.3.6. Tyres/wheels may not be modified. Changing of tyres between drivers is not allowed. Drivers must have their wheels and tyres marked by Technical Inspection and this marking can be done at any time.
- 7.3.7. The Technical Inspector must mark wheels/tyres before being presented to Technical Inspection for qualifying heats and finals.
- 7.3.8. Unmarked wheels/tyres may not be used on the car during qualifying heats and finals but are allowed for practice.
- 7.3.9. Technical Inspection shall be responsible for recording the number of tyres used by each driver.
- 7.3.10. No extra sets are allowed for a re-run of a heat.
- 7.3.11. All set of tyres for qualification have to be returned by the driver by the end of

- (K) = Min 140 mm Max 155 mm
- (L) = Min 110 mm Max 125 mm
- (M) = Min 115 mm
- (N) = Max 195 mm



- (O) = Min 150 mm
- (P) = Min 95 mm
- (Q) = Max 10 mm
- (R) = Min 115 mm
- (S) = Max 35 mm



To assist competitors maintain consistent heights when using different wheels/tyres, dimensions R and S will be measured with the chassis on a 15.0 mm block. Dimensions will be based on a 5 mm ground-clearance and will therefore be :- R = 125 mm, S = 45 mm.

each qualification day to the organizer (tyre impound). Not returning the tyres in the announced time by the organizer will be punished with the lost of the best heat. The not returned set of tyres have to be checked and released for further use by the technical inspection.

7.4. 1/10 TOURING CARS 13.5T SPEC. BRUSHLESS

7.4.1. Only 13.5T Spec Brushless motors according to App. 3A 2.2 are allowed.

8. PARTICULAR TO 1/10 FORMULA ONE SPEC CARS

- 8.1. Cars specification
 Maximum width: 190 mm
 Front independent king pin, coil spring suspension is allowed. Suspension pick up points must be mounted inside the body. Independent front shocks are not allowed. The main chassis plate must not protrude from the body when viewed from above.
 Minimum weight = 1050 grams including personal transponder.
- 8.3. Additive:
 Only odourless additive is allowed (as per. rules)
- 8.4. Bodies:
 Only Formula 1 body styles are allowed. Body must be painted in a race inspired theme. Single color themes are allowed but you must the included sticker sheet to detailed the car.
 All cars must have a drivers figure installed in the cockpit.
- 8.5. Wings:
 Front and rear wings must be commercially available and made of a molded ABS Style plastic. and to a design to be decided at the AGM. Front and rear wings made of Lexan material will not be allowed (this includes bolt on Lexan front wings over a smaller ABS plastic wing).
 Wings equipped with any type of remote adjustment or DRS are not allowed
 Maximum height of any part of the rear wing cannot exceed highest point of the body. Any bolt-on, glued-on or moulded-in elevation on the body is to be ignored for the rear wing maximum height measurement.
- 8.6. Only 21.5T Spec Brushless motors according to App. 3A 2.2 are allowed.
 Speed controller rules to be the same as current Spec. Touring Car rules.

C GT12 Technical Rules

This class is based on the principals of close, fair and low cost racing. This will make it both an ideal entry level class for the driver who wishes to try his or her hand at RC racing for the first time, but the rules for the class will also cater for the more competent driver who wishes to take their racing further. In the interests of keeping racing costs reasonable, there is strict guidance as to the use of additional upgrade parts and components. This should also ensure that the performance of each car is more dependent on driver ability and good setup than on budget. The Rules outlined below may not necessarily cover every single aspect of car construction – drivers are required to follow the spirit and intention of these rules if any ambiguity is discovered.

1 Construction Rules

- 1.1 The essence of the sport of Radio-controlled car racing is competition between realistic models of racing automobiles. All cars must comply with dimensional requirements stated in these Rules.
 All cars will use replica GT shells from the list of eligible shells given in Appendix 1
- 1.2 Minimum weight is 950 grams, ready to race including lap-counting transponder at all times during the race/heat/final.
- 1.3 Wheel rim diameter maximum is 40mm, and 26mm Width. Only commercially available wheels may be used. No modifications or changes to the original manufacturer's design and dimensions are allowed.
- 1.4 The tyres must be black except for side wall detail.
- 1.5 Tyre additive for each meeting is to be agreed by the organiser and the EFRA Electric Chairman.

- 1.6 Tyres must have a minimum width of 20mm and a maximum width of 26mm.
 - 1.7 Wheel nuts and/or axles must not protrude more than 2.0mm beyond the outer edge of the wheels. No more than 1.5mm of wheel outer side may be exposed (not covered with rubber) on the outer edge of wheels.
 - 1.8 Bumpers may be fitted but must be designed to minimise injury that could result from being hit by a car, also to reduce the risk of damage to other cars. Rigid bumpers made from non-resilient materials such as metal are not allowed. Other sheet materials should have an edge radius not less than 1.5mm.
 - 1.9 Only one wing is allowed on the car, maximum dimensions to be, width 165mm, chord 50mm, unless the original car had more than one wing. The second wing must be to scale within 10% in size and location.
 - 1.10 Overall maximum width of the rolling chassis to be 165mm including wheel nuts and axles, not including bodyshell. Wheelbase is to be 196mm minimum to 208mm maximum.
 - 1.11 All cars must have clear windscreens, unless the actual car did not have clear windscreens.
 - 1.12 Side and/or rear windows, if any, must be clear.
 - 1.13 All cars to have clearly visible identifying numbers to the Race Directors satisfaction.
 - 1.14 Numbers must be at least 25mm high with minimum stroke of 4mm. They must be black numerals on a white background.
 - 1.15 No portion of the chassis or any equipment may extend beyond the body, except aerial masts, rear diffuser (if fitted) and up to four posts for the purpose of mounting the body shell.
 - 1.16 Flexible masts/tubes only may be used.
 - 1.17 Openings in the body other than ones appropriate to full size cars shall be kept to a minimum.
 - 1.18 Wheel cut-outs may not be more than 10mm larger than the tyre radius. Exception- scale size and/or shape wheel well cut-outs. Wheel wells must be cut out if the original cars are cut out.
 - 1.19 When initially entered in a meeting the body shell must be neatly finished and complete 1.20 Body and chassis must be securely joined at all times while the car is on the track.
 - 1.21 Body shells must be listed in Appendix 1 to these Rules to be eligible for use. Body shells must be approved by the homologation officer, a list of approved shells will be available on the EFRA website. Body shells when painted must have a minimum of headlights, front grill and rear lights picked out in a realistic colour, size and shape that clearly separate them from the other body colours. Additional grills and intakes picked out in the same way are preferred. Windows will be clear, may not be cut out, and will be shaped as per the original car. Bodies must not be cut above the lower cut lines marked on the body shell. If there is a diffuser cut line, the bodyshell may be cut to this line.
 - 1.22 Only one drive motor is allowed per car.
 - 1.23 The minimum ground clearance of the car, not including the spur gear, is 3mm; minimum 1mm under the spur gear; this will be checked during scrutineering for each qualifying heat and final race.
 - 1.24 Only Personal Transponders will be used to record laps.
- 3 Definition of Brushless Motor**
- 3.1 13.5 brushless - Any motor listed in any of the Homologation List for Brushless Spec Motors (13.5) as updated from time to time.
 - 3.2 17.5 brushless - Any motor listed in any of the Homologation List for Brushless Spec Motors (17.5) as updated from time to time.

4 Definition of a Zero-timing Speed Controller

- 4.1 Speed controllers may not be equipped with any form of automatic or programmable timing advance. If this feature is available on the particular speed controller it must be disabled and placed in an approved mode - i.e. the "ROAR blinking LEDs mode." Only Speed controllers from the Approved Blinky ESC's list may be used.
- 4.2 Reverse function must not be used in GT12-class.

5 Batteries Allowed

- 5.1 Any Batteries conforming to the current 1S Stick and Saddle LiPo battery list as updated from time to time. All Batteries used in any competitions MUST be hard-cased. Soft cases or no cases are not allowed.
- 5.2 Cars with 13.5T or 17.5T Brushless Motors will be powered by cell/s with a maximum nominal voltage of 3.8V.

6 Chassis and Components

- 6.1 The chassis component will consist of one continuous sheet of material that extends from a minimum 10mm ahead of the front axle line and runs continuously along the car to end 25mm minimum behind the rear axle line. The chassis may not include any features designed to allow the front and rear axle to rotate along the central axis of the car relative to each other. (Intent – that the chassis supports all the suspension components and is sufficiently rigid not to be used as a working part of the suspension system/s).
- 6.1.1 Chassis shape and hole pattern to be homologated, Manufacturers may submit a maximum of 3 designs per 12 month period. Legal chassis listed in appendix 2.
- No modifications to chassis
 - Design may be offered in a "alloy" or "composite" version
 - Edges may be smoothed / sanded / sealed
 - Chassis must be commercially available
- 6.1.2 Metals used in the production rolling chassis and any aftermarket parts may only be brass, steel or aluminum with the exception of the GT12 Super-Cup class where, solely for the use as turnbuckles, titanium will be allowed. Brass, lead, and steel may be used as weights.
- 6.2 All suspension systems must operate independently of the chassis component.
- 6.2.1 Separate dampers are only allowed on the rear suspension. Dampers requiring seals to prevent the egress of any type of damping medium are not allowed. (Intent – that dampers are non-sealed 'straw' or 'tube' style. Dampers with any type of damping medium contained in a sealed reservoir are not permitted).
- 6.3 Front suspension may be independent provided that the suspension design does not have any pivot, rod or other mechanism that alters the wheel camber in roll relative to the chassis during its full travel. (Intent – that suspension systems from Touring Cars, GT10 cars, 12th cars and F1 cars featuring pivoting suspension arms are not used).
- 6.4 The rear axle must not have any articulated element and may be fitted with a differential 6.5 Only a single fixed speed transmission is allowed.
- 6.6 Gears in the single fixed speed transmission must be 32DP or 48DP only.
- 6.7 Rolling element (ball) bearings are allowed on the front and rear axles.
- 6.8 Cars may only have two driven wheels with the drive to the rear axle.

End of Construction rules**Body Shells**

Only GT body shells are allowed. At the time of submission for homologation, the full sized car upon which the body shell is based must be currently FIA

homologated (for GT Competition) and have been raced within previous 3 years. All shells must be a reasonable representation of the full sized car as judged by the GT Section Committee. The final decisions on including bodies in the approved list rests with the GT Section Committee. Manufacturers are recommended to contact the 1/12 Section GT12 Representative to confirm if any specific car is permitted. (Intent – that LMP cars and those designed specifically for racing are not allowed). As part of the homologation process, the manufacturer's part number must be clearly marked in the lower corner of the windscreen area.

The following is the list of approved bodies for the GT12 class:

Kamtec

- Kamtec Lotus GT1 (Kamtec part no. GT01)
- Kamtec Ascari GT3 (Kamtec part no. GT02)
- Kamtec Aston Martin (Kamtec part no. GT03)
- Kamtec Type F (Kamtec part no. GT04)
- Kamtec Porsche GT3 (Kamtec part no. GT05)

Mardave

- Mardave Lotus GT1 (Mardave part no. V140)
- Mardave Ascari GT3 (Mardave part no. V151)
- Mardave Aston Martin (Mardave part no. V160)
- Mardave GT2 (Mardave part no. V131)
- Mardave Porsche (Mardave part no. V113)
- Mardave Ginetta (Mardave part no. V161)

Penguin Custom BodysHELLS

- Lambo GT12 (part number PEN01)

Protoform

- Protoform PF-M12 (Protoform part no. #1613-30)

Screwz4RC

- Audi R8 (part number G903)

Zen-Racing

- Zen-Racing GTM (part number PBGT02)
- Zen-Racing GTF (part number PBGT03)

Montech

- Montech MLGT3 (part number MT018001)

The following link contains info on the current FIA GT homologated lists. Only cars listed in the GT3 class are eligible. <https://www.fia.com/homologations> Use "list of Homologated Vehicles classified by number".

Chassis

The following is the list of approved Chassis's for the GT12 class.

Chassis shape and hole pattern to be homologated, Manufacturers may submit a maximum of 3 designs per 12 month period.

- No modifications to chassis
- Design may be offered in a "alloy" or "composite" version
- Edges may be smoothed / sanded / sealed
- Chassis must be commercially available

Schumacher

- U3981 SupaStox Chassis 6 Cell/2s Saddle
- U3957 SupaStox Chassis 4 Cell/1s/Shorty
- U4649 SS GT - S1 Chassis

U4623 SS GT - C/F Chassis
 U4816 Atom - Alloy Chassis
 U7276 Atom CC - C/F Chassis

Zen-Racing

ZENC101 RSGT12 Main Chassis
 ZENC106 RSGT12 Twill Carbon
 ZENA100 RXGT12 Aluminium Chassis
 ZENC150 RXGT12 Carbon Chassis

Mardave

MARCE-01 Mardave CE
 MARCEC-01 Mardave CEC
 MARAC-12 Mardave AC12
 MARA-001 Assassin
 MARGT-001 Assassin GT
 MARVEN-001 Venom
 MARVGT-001 Venom GT - Carbon Chassis
 MARVCC-001 Venom CC - Alloy Chassis

ORE

R318 ORE TwelveGT Carbon
 R653 ORE B2B Carbon
 R722 ORE B2B-W17 Alloy

D PARTICULARS for 1/10 OFF ROAD

1. GENERALITIES:

- 1.1 Cars entered for off-road competitions should be reasonable representations of the style of full size cars generally accepted as being suitable for rally-cross, rallying or desert racing.
- 1.2 There are two classes of cars: 2WD and 4WD. Both must be run and drivers are allowed to enter both classes. Any car competing in the 4WD Class must have effective drive to the front and rear wheels (race breakages excepting). Any car which is designated as 4WD must be able to complete a lap of the track with either the front or rear drive-shafts removed with all settings of the remaining drive-train as it will be raced, in a reasonable time frame.
- 1.3 All open gears must be enclosed or protected so as to prevent injuries.
- 1.4 Any modification to the car is allowed.
- 1.5 A differential may include a mechanism for apportioning torque over the axle/s (e.g. limited slip differential). This mechanism must only be capable of adjustment manually whilst the car is stationary

2 MEASUREMENTS AND WEIGHTS:

Maximum overall length: 460 mm
 Maximum overall width: 250 mm (At any point of suspension travel)
 Maximum overall height: 200 mm (to be measured with the suspension fully compressed)
 Minimum weight 2WD cars: 1.474 gram
 Minimum weight 4WD cars: 1.588 gram
 A maximum of two (2) wings can be used, one at the front and one at the rear of the car:
 Maximum size of Front Wing: 127.0 mm wide with chord 63.5 mm. max.
 Maximum size of Rear Wing: 177.8 mm wide with chord 76.2 mm max.
 Maximum size of Wing side-dam: Height 50 mm, length 80 mm

Maximum overall diameter of wheel & tyre: 90 mm

Wheel sizes:

Min bead mounting diameter: 41.28 mm

Max bead mounting diameter: 55.88 mm

Bead mounting dimensions are measured at the point where the internal tyre bead meets the wheel.

Max wheel diameter: 61.47 mm

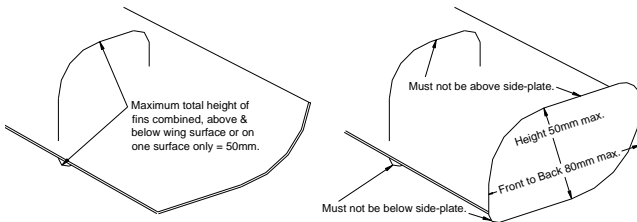
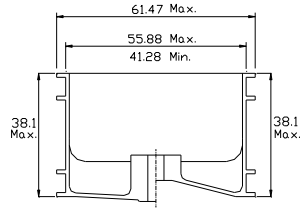
Max wheel width: 38.10 mm

Wheel width is measured at the circumference of the wheel where the tyre is retained, the centre of the wheel may be outside this dimension.

'Venting' holes in the internal rim of the wheel are allowed – maximum of two (2) holes, of maximum 6.0 mm diameter.

Measuring equipment for width, length and height should be constructed preferably from metal or alternatively high quality board. The materials will be of suitable thickness to eliminate any distortion.

Design of the equipment to allow all points of the car to be measured.



Vertical 'fins' included or attached within the wing area, must be no higher (or lower) than any side-plates. If no side-plates are used, any vertical 'fins' within the wing area must not exceed 50mm maximum overall (top to bottom). Front or Rear bi-level wings are not permitted. See diagram.

3 TYRES

3.1 Grand Prix: Any combination of commercially available 1/10th scale wheels and tyres may be used.

3.2 European Championships: The organizer will propose 1 type of tyre for each of the driven axles for 2WD and 4WD (2WD and 4WD do not have to be the same type of tyre). The manufacturer and full description of the tyres chosen must be given, but there remains free choice of compound. The proposed tyre choice will be ratified at the EFRA section AGM prior to the EC and provided always that the chosen tyres are commercially available throughout the EFRA Nations. The manufacturer(s) of the chosen tyres will be notified which specific tyre has been chosen as soon as the decision is finalised.

Valid from 2016:

European Championships: The organizer will propose 1 type of tyre for each of the driven axles for 2WD and 4WD. The manufacturer and full description of the tyres chosen must be given, compound and inserts will be controlled, and will only available in a restricted area and should be sold to the driver by the organiser and if possible at a lower price. The proposed tyre choice will be ratified at the EFRA section AGM prior to the EC and provided always that the chosen tyres are commercially available throughout the EFRA Nations. The manufacturer(s) of the chosen tyres will be notified which specific tyre has been chosen as soon as the decision is finalised. Rule applies from 2016 onwards

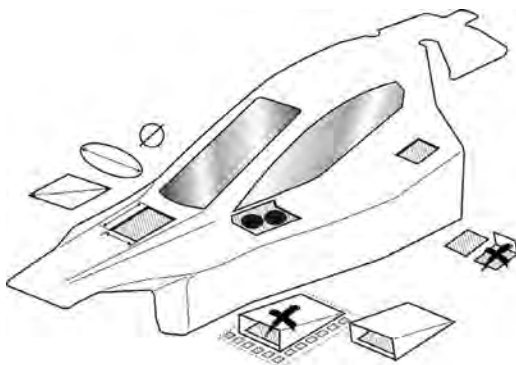
- 3.3 No metal or hard plastic may be used for spikes
- 3.4 Modifications to tyre tread patterns and 'location beads' are allowed by trimming or removal, but the addition of any material is prohibited excepting the glue used to retain the tyre to the wheel. 'Cut and Shut' is permitted at Grand Prix only and even so if the parts of one or more different tyres are glued together, provided always that the constituent parts are all recognisable as coming from commercially available 1/10th scale tyres.
- 3.5 No sponge or foam tyres are allowed except for foam inserts completely enclosed within the sidewalls.
- 3.6 Only cleaning of the tyre bead where the tyre is glued to the wheel is allowed. No tyre additives other than water are allowed on any of the other surfaces of the tyre, inside or outside of any tyre. No additives are allowed to be applied to any tyre insert. Excess of glue deemed to alter the performance of the tyre is not allowed. The use of any additives that is deemed by officials for the purpose of improving the tyre performance will result in disqualification from the event.

4 **RAIN PROCEDURE for QUALIFYING**

- 4.1 The Race Director and the Referees are jointly responsible for the decision to stop racing in the event of adverse weather conditions. If in doubt or they do not agree they can consult the EFRA rep. or his deputy (if at the meeting) for advice.
- 4.2 When Racing is suspended as per the rule above, then racing will recommence, when weather permits, with the heat that was next to be run prior to the interruption. If the serie of heats / round cannot be completed the same day that particulair round will be cancelled and next day will start with a new (complete) round.
- 4.3 Every effort should be made by the Race Director / organizing club to make necessary repairs to the racing surface prior to recommencement of racing to give the racers in the next heats an more or less equal chance to qualify compared to the heats raced before the meeting was stopped. If that is not possible racing should be re-started with the next qualifying round.

5 **BODY SHELL HOLES/VENTS:**

The front and rear ends of the shell must retain some of the original profile of the two ends of the shell. Front and rear facing areas within the body shell surface which are 'marked' with the intention of removal to form "air scoops/ vents" are allowed to be removed, within a maximum dimension of 10mm in any direction regardless of the manufacturers marking. If no "marked" air scoops/vents are designed in the original mould to assist airflow to the motor or ESC, then material may be removed to a maximum of 10 mm. in any direction within a maximum square area of developed size 30 mm x 30 mm, in two places only. Windows are not allowed to be removed or include holes, other than for the purpose of the antenna.



APPENDIX 4

LITHIUM BATTERIES FOR ALL ELECTRIC CLASSES - TECHNICAL, RACE PROCEDURES & HOMOLOGATION.

BRUSHLESS MOTORS 05 SIZE FOR 1/12th AND 1/10th ELECTRIC CLASSES.

1 LITHIUM BATTERIES - TECHNICAL SPECIFICATIONS:

EFRA approved cells will be Lithium based (LiPo/LiFe). Each Electric Section will define the number of cells and the maximum nominal rated voltage.

1.1 Lithium Based (LiPo/LiFe) Batteries can be approved, but must conform to the following :-

Lithium Based (LiPo/LiFe) battery packs must have a hard, protective case that completely envelopes the cell(s). The case should be made from ABS or a similar material. The two halves of the case must be factory sealed in a way that any attempt to open the case will destroy the case. The only opening in the case that is allowed, is for exit wires or pin type connections. The outline shape of the battery 'hard-case' must be 'cuboid' (six flat surfaces with all angles 90 deg.), edges and corners can be radiused and a 'step' or 'recesses' are allowed in the area of tube connectors in the interest of safety to prevent any short circuit.

1.2 The maximum case sizes, including any manufacturer incorporated plugs or connections are as follows:

4S Batteries:

Length: 139.0mm.

Width: 47.0mm (the max. width includes any side exit wires).

Height: 48.2mm (Chassis location features additional to this dimension are allowed).

2S Batteries:

Length: 139.0 mm.

Width: 47.0 mm, (the max. width includes any side exit wires).

Height: 25.10 mm (Chassis location features additional to this dimension are allowed).

Saddle-Pack cells are allowed, but must comply with the above dimensions. Saddle-Pack cells must have a combined dimension of 139.0mm max when placed end to end.

1S Batteries:

Length: 93.0mm.

Width: 47.0mm (Side exit wires are allowed outside this dimension).

Height: 18.5mm (Chassis location features additional to this dimension are allowed).

1.3 Batteries to comply with the weights specified on the EFRA homologation list, (maximum tolerance for manufacturers is +/- 4%).

1.4 Individual cells used in the construction of the battery pack shall be rated with a nominal voltage of no more than (LiPo 3.8v/LiFe 3.3v). Individual cells may be wired in parallel.

For 4S Packs:- the maximum connection "In Series" is four, to give a maximum pack nominal voltage of - LiPo 15.2v & LiFe 13.2v.

For 2S Packs:- the maximum connection "In Series" is two, to give a maximum pack nominal voltage of - LiPo 7.6v & LiFe 6.6v.

For 1S Packs:- cells can only be connected in parallel to give a maximum pack nominal voltage of - LiPo 3.8v & LiFe 3.3v.

NOTE: Cells with a nominal voltage of no more than 3.8v have been allowed at EFRA events since 1st. April 2017. All previously approved cells with a nominal voltage of no more than 3.7v maintain their approval.

The maximum charging cut-off will remain at 4.20v per cell.

- 1.5 The battery pack shall have leads extending from the case for the positive and negative electrical connections using wire of adequate size to handle discharge rates acceptable to racing applications. Alternatively, the case shall have internal connection points for these wires clearly marked positive and negative so the user can apply the lead wires. Any type of metal connections that are incorporated in the battery pack by the manufacturer must be substantially below the major surface of the plastic casing, to prevent any "short circuit" if placed on a conductive surface. Any type of connection adaptors added, that are conductive and protrude above the level of the plastic case must be removed before the battery is removed from the car.
- 1.6 The case must have the original suppliers label intact, clearly stating:- the Part # of the pack, the rated nominal voltage, the chemistry (Lipo/LiFe), the rated energy capacity of the pack in Wh. and the 'C' rating of the pack. The Brand name/logo shall be easily readable.
NOTE: From 2017 onwards; Saddle Pack batteries that are 'hard wired together can state the nominal voltage of the combined number of batteries, BUT Saddle Pack batteries supplied as individual batteries (not hard wired together), MUST show the correct nominal battery voltage for each individual battery on the labels, not the combined voltage.
- 1.7 As EFRA events are International, EFRA will only accept batteries for approval that comply with the maximum energy capacities required by passenger airlines.

2. LITHIUM BATTERIES - RACE PROCEDURES:

EFRA will publish approved Battery Lists each year, showing all the batteries that have been homologated and are eligible for use at EFRA sanctioned events. This includes any batteries that are included on any 'official archive' lists. Only batteries shown on the official EFRA website will be legal for use at EFRA sanctioned events.

All Lithium Batteries must comply with the published data shown on the EFRA Approved Battery Lists. Batteries that are not compliant with the dimensional rules or published weights will not be allowed.

- 2.1 Modifications to the original battery case, by removal of material or any modification that could be deemed to affect safety is not allowed.
- 2.2 All LiPo/LiFe packs must be charged with a LiPo/LiFe-capable charger using the industry standard CC/CV (Constant Current/Constant Voltage) charge profile.
- 2.3 Any competitor found to be charging cells using a charger that is not specifically designed for LiPo/LiFe cells, or using a charge profile other than the industry standard CC/CV, will be penalised at the event.
Any competitor found to have charged LiPo/LiFe cells to above the voltage values detailed in rule 2.7 (below) will be penalised.
- 2.4 LiPo/LiFe drive batteries must be in a 'Lipo sack' at all times when being charged or discharged. This applies to any discharging procedures except during a race or when using organiser supplied resistors. Anybody not doing this, will be penalised at the event.
LiPo sack is defined as a receptacle designed for the purpose of charging LiPo/LiFe batteries and of a suitable construction as to contain a LiPo/LiFe fire.
- 2.5 The use of any additional heating of any type, to heat a LiPo/LiFe Battery is not allowed. The use of any cooling devices or "freeze" sprays of any type to cool a LiPo/LiFe battery is not allowed.

- 2.6 If multiple individual batteries are connected together (in parallel or series), then all batteries used must be of the same manufacturer brand and same Part Number.
- 2.7 4S LiPo/LiFe Batteries: may be charged to a maximum of 16.80v (LiPo) resp. 14.80v (LiFe).
2S LiPo/LiFe Batteries: may be charged to a maximum of 8.40v (LiPo) resp. 7.40v (LiFe).
1S LiPo/LiFe Batteries: may be charged to a maximum of 4.20v (LiPo) resp. 3.70v (LiFe).
Overcharging is a serious safety hazard and will not be tolerated.
- 2.8 Batteries cannot be charged or changed during a race.
- 3. LITHIUM BATTERIES – APPROVAL PROCEDURES:**
- 3.1 From 2009, EFRA only homologates Lithium based batteries. Lithium based (LiPo or LiFe) batteries must be submitted to EFRA for approval and be listed on the EFRA homologation lists before being allowed at EFRA sanctioned events. Manufacturers or their agents will be responsible for paying all approval fees. The approval fees for each individual battery are detailed in General Rule 3.5.7.
- 3.2 Submission dates:-
4S Batteries - A minimum of one individual battery has to be received by 1st Dec.
2S Batteries - A minimum of one individual battery has to be received by 1st Dec.
1S Batteries - A minimum of one individual battery has to be received by 1st Dec.
Cells received after the above submission dates (1st Dec.) will not be included on the EFRA approved list for the following year
- 3.3 Each individual battery sample must be supplied with :
- (a) Lithium based batteries must be covered by their safety test certification in accordance with UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, Part 3, Sub-Section 38.3, Tests T1 to T8.
 - (b) Technical Spec. sheet detailing; the recommended maximum charging rate, the maximum voltage when charging, case material, case wall thickness and method of sealing the case, the battery weight (max tolerance +/- 4%).
 - (c) Name and contact details of a minimum of two appointed distributors for the batteries in EFRA member countries.
- 3.4 New batteries have to be submitted to the EFRA Battery Homologation Officer for approval. Subject to the Homologation Officer being satisfied that the new battery conforms with technical specifications and commercial availability, the battery will be legal for use at EFRA sanctioned events from:
- 4S Batteries - the following April 1st.
 - 2S Batteries - the following April 1st.
 - 1S Batteries - the following March 1st.
- 3.5 Any changes to the technical specifications or visual appearance of the battery or casing after the original approval ,will require re-approval.
- 3.6 All previously approved batteries may be used for their lifetime or until their specifications no longer comply with the original one that was approved. It is the driver's responsibility to prove the legality of his batteries in case of doubt.
- 4. BRUSHLESS MOTORS (05 Size) FOR ELECTRIC 1/12th & 1/10th SCALE CARS:**
All EC and GP events will clearly state which class of motors to be used. From May 2016, only motors included on the EFRA Homologation Lists are allowed at EC and GP events in the 1/12th. & 1/10th. Electric Classes.
- 4.1 EFRA homologate two types of Brushless Motors -- 'MODIFIED' & 'SPEC':
- (a) For MODIFIED motors: sensed or sensorless motors are allowed.
 - (b) For 'SPEC' Class motors: only sensed motors are allowed.

- 4.2 When the motor is sensed:-
It must use a six position JST ZH connector model number ZHR-6 or equivalent connector with 6JST part number SZH-002T- P0.5 26-28 AWG contacts or equivalent. Wire sequence must be as follows:
Pin #1 - Black wire ground potential
Pin #2- Orange wire phase C
Pin #3- White wire phase B
Pin #4 - Green wire Phase A
Pin #5- Blue wire temp control, 10K thermistor referenced to ground potential
Pin #6- Red wire +5.0 Volts DC +/-10%
Compatible speed control must use the 6 position JST header part number X-6B-ZR-SMX-TF (Where the X denotes the style of header), or equivalent. The power connector has to be clearly marked A, B, C: A for phase A, B for phase B and C for phase C.
- ALL MODIFIED & 'SPEC' Class Brushless Motors 05 size must comply with the following:-**
- 4.3 The motor has to be rebuildable . Ball bearings are allowed. The motor must be constructed to allow easy replacement of the; rotor, bearings and front End-Bell.
- 4.4 All motors must have the original manufacturer's name or logo permanently marked by the manufacturer into the end bell or end-plate.
- 4.5 No hybrid motors allowed (mixing of parts from different manufacturers), with the exception of Rotors in Modified Motors only that were approved prior to 01.04.15.
- 4.6 No modifications, designs changes or removal of materials are allowed to any approved motor. Only 'optional' parts or rotors detailed on the EFRA Approved Lists are allowed. Any changes or modifications will require the motor to be re-submitted for approval.
- 4.6.1 It is the competitor's responsibility to ensure that any motor used at an EFRA sanctioned event complies with all EFRA rules. If any motor is found to NOT comply with the EFRA motor rules, any results using such motor will be disqualified, regardless if the motor is included on the EFRA homologation list. If there is definitive proof available; that the motor manufacturer supplied a motor (to the competitor) that does not comply with EFRA rules, then sanctions could be taken against the specific manufacturer(s).
- 4.7 Can Assembly (not including rotor shaft):- Overall maximum/minimum diameter is 36.02mm./34.00mm. measured at whatever point yields the maximum /minimum dimension, excluding solder tabs or lead wires.
Overall maximum/minimum length is 53.0mm./50.00mm. measured from the mounting face of the motor to the furthest most point of the end bell/plate, not including solder tabs, lead wires or original manufacturer's logo or name.
Motor mounting holes must be on nominal 25.0 to 25.4mm centres.
- 4.8 If the stator cannot be easily removed from the assembled motor for technical verification of sizes or construction, then the Can/Sleeve must have: -
(a) Minimum two pairs of slots or holes (each exposing 3mm of stator ends minimum), in line with the centre-line of the stator, that will allow measurement of the stator length.
(b) Slots or holes to allow visual appraisal of the laminates used in the stator.
Rule to be applied to any new range of motor starting 01.01.12. Existing approved motors without these features are not excluded.
- 4.9 Stator: The stator must be continuous laminations having the same overall

shape, being one after the other without anything in between. The laminations must be of one homogeneous material without cut-outs, holes or hollow sections other than for the three slots of copper coil wires and (if needed) the three grooves for the screws used to hold the entire assembly together. Stator minimum length 19.30mm, maximum 21.00mm measured across the metal surfaces of the laminates and not including any coatings. The faces of the end laminates of the stator must be free of any coatings or mouldings for 1mm from the outer circumference to allow direct measurement across the metal faces of the stator ends (to be applied to any new motor range submitted from 01.03.18). The outer circumference edges of the end laminates must be complete with no material removed, to allow accurate measurement. The thickness of the stator laminations is 0.35 +/- 0.05mm. All laminations must be of the same material.

MODIFIED BRUSHLESS MOTORS - 05 SIZE

Specific Requirements & Dimensions.

- 4.10 Inside diameter of the stator must accept “plug” gauges of 12.5mm minimum, 16.0mm maximum.
- 4.11 The winding: Delta and Y wounded stators are permitted. Only circular (round) pure copper is permitted. There is no turn limit, but individual Classes may restrict the number of turns to a specific minimum.
- 4.12 The Rotor: Shaft diameter where the pinion gear mounts must be 3.175mm. Only one piece, two poles Neodymium bonded or sintered, or Ferrite magnetic rotors are permitted. The rotor will be identified with the manufacturers name or logo and the unique part number. Applies to all rotors in new motors or new optional rotors starting from 1st. April 2015 onwards.
Magnet: Minimum length 23,0mm. Maximum 27,0mm. Magnet minimum diameter 12,0mm, maximum 15,5mm. not including any non-magnetic balancing aids.

‘SPEC’ CLASS BRUSHLESS MOTORS - 05 SIZE

Specific Requirements & Dimensions.

The following rules have been agreed by various International organisations. Applicable to motors of :- 21.5T, 17.5T, 13.5T and 10.5T wind limit.

- 4.13 Only sensed motors are allowed in the Spec. classes. It is not mandatory that sensed Speed Controls have to be used, or that the sensor “harness” has to be connected.
- 4.14 The Inside diameter of the stator must accept a “plug gauge” of 14.50 mm +0/- .005 diameter, clearing the stator, plus its windings and the electrical collection ring at any end of the stator.
- 4.15 The Winding: Only three slot (phase) ‘Y’ (star) wound stators are allowed. No delta wound stators allowed. Only circular (round) pure copper wire permitted. The three slots of the stator must be wound with: -
 - 21.5T Class:- 21.5 turns of - 2 wires at: 0.724 mm. maximum wire dia.
 - 17.5T Class:- 17.5 turns of - 2 wires at: 0.813 mm. maximum wire dia.
 - 13.5T Class:- 13.5 turns of - 2 wires at: 0.724 mm. maximum wire dia. and - 2 wires at: 0.574 mm) maximum wire dia.
 - 10.5T Class: - 10.5 turns of - 2 wires at: 0.813 mm. maximum wire dia. and - 2 wires at: 0.643 mm) maximum wire dia.

Wire dimensions are before lacquer coating.

The electrical circuit through the windings can only be from the ends of the wires forming the designated number of turns. NOTE: The above metric wire diameter sizes are direct equivalents to the nominal AWG sizes previously shown. (Reference to AWG sizes removed for simplicity).

- 4.16 The Rotor: Shaft diameter where the pinion gear mounts must be 3.175mm. Only one piece, two pole Neodymium bonded or sintered, or Ferrite magnetic rotors are permitted.
The rotor will be identified with the manufacturer's name or logo and the unique rotor part number. Applies to all rotors in new motors or new optional rotors from 1st. April 2015 onwards.
Magnet length will be 25.00 +/- 1.00mm, not including any non-magnetic balancing aids. Magnet outside diameter will be 12.20/12.51 mm (min./max. with no further tolerance) for the entire length of the magnet. The shaft outside diameter where the magnet is mounted will be 7.25mm +/- 0.15mm, with this diameter extending beyond the magnet to facilitate measurement.
From 01.11.2017 only one 'optional' rotor will be allowed for any range of new motor submitted (includes all wind Classes). Manufacturer to specify the optional rotor.
- 4.17 All 'SPEC' motors must have a unique marking or feature that is difficult to remove incorporated into the assembled motor to identify the motor is either a 21.5T, 17.5T, 13.5T or 10.5T Spec. Class motor. But motors introduced from 2011 onwards must have the "wind #" etched/engraved onto the outer surface of the motor on a part of the motor that cannot easily be separated from the stator windings.
- 5. BRUSHLESS MOTOR 05 Size - HOMOLOGATION PROCEDURE:**
As agreed AGM 2015, EFRA will homologate '05' size Brushless Motors. Competitors at EC and GP events in 1/12th., 1/10th. Touring Cars and 1/10th. Off-Road Classes can only use '05' size Brushless Motors that are included on the EFRA Homologation Lists, starting 01.06.16.
- 5.1 Motors must comply with the following rules:
Modified Brushless Motors -- All requirements of App.4, Rules 4.2 to 4.12.
'Spec' (stock) Brushless Motors --All requirements of App.4, Rules 4. 2 to 4.9 and 4.13 to 4.17.
- 5.2 All 'Spec.' (stock) motors must have a unique Part Number which will be included on the homologation lists.
- 5.3 Any optional rotors must be submitted for approval. Only optional rotors listed will be allowed at EC and GP events.
- 5.4 When a motor (or rotor) has been approved and included on the relative list, the manufacturer must not change the; technical specification, visual appearance or description. Any changes will require a new Part Number and the motor (or rotor) will have to be resubmitted for approval.
- 5.5 New motors will NOT be added to the homologation lists within the four weeks preceding any EC event for any Class at which the motor (or rotor) can be used. Sample motors must be received by the homologation officer a minimum of six weeks before any event, to allow time for all technical checks and records to be completed.
- 5.6 Motors (or rotors) must be commercially available throughout the EFRA countries before being added to the homologation lists. Therefore availability must be confirmed when samples are submitted.
- 5.7 Sample motors for homologation will only be accepted from the original manufacturer or an appointed distributor within the EFRA countries.
- 5.8 New motors have to be submitted to the EFRA Motor Homologation Officer as listed in the EFRA Handbook. Minimum one (1) sample must be submitted for each motor class requiring approval (Modified, Spec. - 10.5T, 13.5T, 17.5T, 21.5T).

The homologation fee for each class of motor will be as shown in General Rule 3.5.7.

APPENDIX 5

LARGE SCALE I.C. RULES

1. RACE FORMAT

1.1 There will be two annual European Championships to determine the European Champion in:

- a.) 1:5 Scale Touring Cars and F1
- b.) 1:6 Scale Off Road Cars 2WD + 4WD + Short Course
- c.) 1:5 Scale Touring cars and F1, 40+
- d.) The 40+ event will be run as an International Race.

Drivers can only enter one class at a European Championship. There will not be a 1:5 touring car European Championship event held in the same year as an IFMAR World Championship event held in Europe, the 4 EFRA GP's will determine the European Champion in Touring car and Formula 1 with the 3 best results counting.

1.2 The results of the EFRA-GP's will give the EFRA ranking list.

The Ranking list will be a continually updated one, for every new EFRA GP, the oldest one will be deleted.

1.3 The number of drivers per event is limited for GP's to 110 and for EC's to 150.

There are 2 classes at a GP (TC and F1), in case of more than 110 attendees wants to subscribe the numbers must be limited for each section to 76 TC and 34 F1 = 110 drivers in total. With permission from the Chairman, the track and facilities being suitable, the maximum number of drivers at a GP can be increased.

A minimum number of 25 participants from 3 different countries in a class at an EC is required for that class to be officially classified as a European Championship and a European Champion title given to 1st place.

If 2 weeks before an EFRA GP one class is oversubscribed and the second class does not reach the allowed number, these places can be given to the drivers on the waiting list in the other class.

1.4 Qualification for the European championships and World championships 1:5th Touring Cars and F1:

20 places for the European championships and 7 places for the World Championships for the following year's meeting/s will be offered to the highest ranked drivers competing in the large scale EFRA GP series. The remainder will be split as per normal between countries as outlined in general rule 3.6.

Only the EFRA GP Meetings will count for the points system, with the drivers best 3 meetings out of the 4 to count. Points will only be awarded to a driver if they compete in their final/s. If there are less than 4 EFRA GPs then they will all count.

Points system to use: 1 = 150, 2 = 147, 3 = 145, 4 = 144, 5 = 143, ... 10 = 138, 11 = 135, 12 = 134 ... TQ = 1 extra point.

If a concourse competition is held at an EC, only cars and bodies that are used in the race are eligible.

2. RACE PROCEDURE

2.1. Duration of the races:

Free practice: max. 8 minutes

Heats: 10 minutes (plus the last lap and time of the last lap)

Sub-finals: min. 15 minutes, max. 20 minutes up from the 1/32 final and 30 minutes for semi finals

Final Saloon: 30 minutes (plus the last lap and time of the last lap)

Semi Final Formula 1: 25 minutes, (plus the last lap and time of the last lap)

- Final Formula 1: 25 minutes (plus the last lap and time of the last lap)
- 2.2. a) The EFRA Christmas Tree will be used.
 b) Both the Formula 1 and Touring car classes will run superpole, the no. 1 ranked driver after completion of the qualifying heats will move up directly to the main final and take the pole position on the starting grid. The drivers ranked 2nd to 5th will compete in a "superpole" final after completing the last Round of Qualifying. Each driver will drive the "super-pole" individually on the track, for 6 consecutive laps including warm-up. Procedure for Super Pole will be: 3 minutes warm up for each driver and then 6 consecutive laps. The "superpole" running order will be 5, 4, 3, 2. The driver that scores the fastest lap will also move up straight to the "Main" Final and take the second position on the starting grid. The other drivers from the "super-pole" will start in the semi-finals as per qualifying ranking.
 c) Sub-Finals: The first 3 drivers from each sub-final progress up to the next final. Semi-final: When superpole is used in the Touring car class, the first 4 drivers from each semi final will progress up to the main final. For all other classes the first 5 from each semi final will progress up to the main final.
 d) It is not allowed to drive a model car on any other place than the track and the marked track pit lane.
 e) Radio communication between driver and pit lane is allowed but only one pair of headsets to be used and they can only be used by the driver on the rostrum and the mechanic in the pit lane.
- 2.3 a) Number of drivers:
 Heat: 10 to 15 drivers (only 1:5), track and facilities permitting.
 Sub-finals and finals: Maximum 10 drivers
 Final F1 EC Maximum 10 drivers
 Final F1 EFRA GP's: Maximum 15 drivers, if the team managers agree
 The race format will be notified in the event information and invitation material.
- b) In the event that the transponder loop is before the exit to pit lane any car that should start from the pit lane will start from position 11 on the grid (unless the car was too late exiting the pit lane when called to the grid).

2.4 TIME SCHEDULE for EC

EC Tracks must be closed for Large Scale Racing, two weeks prior of the event. No cars are allowed on the track before Monday morning.

General qualification format for EC's:

There will be a Minimum of 4 and a Maximum of 6 series of 10 minutes heats depending on the number of drivers. The number of series, time schedule and heat order to be announced prior to the first round of qualification.

If there are 60 drivers or less, 6 rounds.

If there are >60 - <80 drivers, 5 rounds.

If there are more than 80 drivers, 4 rounds.

The event starts on Monday morning.

Approximate time schedule:-

Monday	09:00-18:00	Free practice (in full heats made by the organiser)
Tuesday	09:00-18:00	Free practice (in full heats made by the organiser)
Wednesday	09:00-18:00	Timed practice /tech inspection/qualification heats (a minimum of the car/body checked and marked, engine marking is optional)
Thursday	09:00-18:00	Qualification heats
Friday	09:00-18:00	Qualification heats, lower finals
Saturday	09:00-17:00	Sub-finals and final. Prize giving ceremony

2.5 STARTS

(see also General Race Procedures Chapter 8).

The arrangement of the free practise heats will be created from drivers previous meeting results, known ability and common sense by the organiser. The arrangement of the heats and numbering will be done using common sense and a drivers best 3 consecutive laps. The drivers must stand adjacent to their numbers on the rostrum, the mechanics must remain in their boxes along the pit lane. For all finals, drivers with the lowest starting numbers may choose their position on the rostrum and the mechanics must stand under the driver where this is possible.

- 1 There must be a 3 min. gap between the end of one heat and the start of the next heat. Also a minimum of 2 minutes must be allowed between the issuance of the transmitters and the start of the heat.
- 2 During qualifying an audible warning will be given at 1 minute and again at 30 seconds prior to the official start, in English and other languages as appropriate.
- 3 For all sub finals and main finals, a "Formula 1" type grid start will be used with each grid start position spaced a minimum of 5 meters apart.
- 4 For all finals, the track will be opened 5 minutes prior to the start of the final. At 2 minutes to go all cars will be called back into the pit lane and re-fuelling is allowed. All refuelling must be done through the fuel tanks screw on or flip top fuel cap. At 45 seconds to go the cars are called to the start line, all cars will leave the pits in number order and drive round the track to their respective starting positions. The 10 second count-down will commence within 5 seconds of all cars being stationary in their correct grid position. If a car has not left the pit lane at 30 seconds due to unforeseen problems, the car may start from the pitlane after the other cars have officially started. The race director and referees will monitor the pitlane for the abuse of this facility.
- 5 From 10 seconds until 3 seconds prior to the start a second by second countdown will be made in English.
- 6 From 3 seconds the verbal count down stops and the actual start-signal will be given by the Starter after a period of between 0 and 5 seconds has elapsed. If the grid is not to the satisfaction of the Starter, he may require a re-start, re-commencing the count down.
- 7 The official start signal will be audible by means of a hooter, operated by the Starter. This signal will also start the Timing Systems.
- 8 Early starts (i.e. any part of the car touching the starting line), will be penalised. (10 sec. up to 1lap) This penalty is issued by the Starting Official or the Time- keeping official and must be announced immediately after the start. The penalty will be marked on the result sheet.
- 9 Under no circumstances will the race be stopped due to a jump start.
- 10 The Starter may only interrupt the race and make a re-start in the event that he considers the starting procedure or the start was not carried out correctly.
- 11 Delayed start. As long as the starter has not called the cars to the start line, any participant of the semi-finals and final may request a delay of 10 minutes to carry out repairs on his car. This delay can be granted only once for each semi final and final. - the track is closed, if the delay is requested as a result of frequency or radio problems - the track is open, if the delay is requested for mechanical repairs or problems. If a driver is asking for a

delay on frequency problems, the mechanics are only allowed to turn off engine and receiver. They are not allowed to make any repairs including change of tyres. At the end of the 10 minute delay period, a complete new warm up time and start procedure will begin.

-12 When the starter calls the main final to the start line, the mechanics are not allowed to refuel the cars.

-13 The driver asking for the delay for what ever reason, except an error in frequencies of the race control, must start from the pit lane.

2.5.1 STARTING PROCEDURE OF HEATS

For qualifying heats no stop between practice time (warming up) and start of the heat. Just start the clock when practice time is over. (Flying start.)

-1 If the number of heats differ from 10, or if the event is planned with more/less rounds, a sequence following this general scheme has to be used.

Round 1: 1,2,3,4,5,6,7,8,9,10

Round 2: 4,5,6,7,8,9,10,1,2,3

Round 3: 7,8,9,10,1,2,3,4,5,6

Round 4: 10,9,8,7,6,5,4,3,2,1

Starting for Sub Finals and Final will be on a Formula 1 grid depending on the track layout, with the faster Qualifier starting in front of the slower.

2.5.2. -1 When the time is over, an audible signal is given. A car finishes when it passes the finish line after the finish-signal is given. The car must immediately return to the pits and may not hinder other cars still racing.

-2 In case of doubt (on the finish-line when time is over), a car may race one more lap and finish. Whether he finishes or not when time was completed, is up to the Time-keepers and cannot be disputed.

-3 After returning to the pits, the engine must be stopped immediately and the transmitter turned off and impounded.

2.5.3. Qualification Order and Finals.

-1 After all series have been completed the Qualification order is established, by taking the best result of each driver.

-2 In case of more than one driver recording identical best results of qualifications the next best result is taken.

-3 In the case of more than one driver recording identical results in a final, the driver starting with the higher start number is classified as the faster, e.g. if number 5 and 2 have equal times, 5 is deemed to have higher final placing.

-4 The sub-finals and final are run according to the schedule printed in the official race program, which may only be changed by team managers majority vote.

-5 Starting order for the drivers who moved up to the final is based on number of laps and time.

In different circumstances it will be number 1 from the A-final who gets the number 1 and the number 1 from the B-final who gets the number 2 etc.

2.5.4 During the warm-up period, or at any other time of a race in progress, deliberate stopping a car on the race track will lead to be penalised with a 10 second "stop and go" after the start of the race. Consecutive stopping on the race track will lead to immediate disqualification.

2.6. RAIN SITUATION

In case of different weather conditions during subfinals the final classification will be as follows: Place 4 of subfinal A and Place 4 of subfinal B will both be awarded place 11th equal in the general classification. Place 5 of subfinal A and place 5 of subfinal B will both be awarded place 13th equal in the general classification and so on.

2.7. RACE INTERRUPTIONS

- 1 In the case of a race which is interrupted for more than 60 minutes for reasons beyond the control of the organisers, the jury will decide whether to cancel or continue the meeting.
- 2 In the case of an interruption of a heat the entire heat will be re-run.
- 3 In the case of an interruption of sub-final or a final the following procedure will be used:
 - A. If less than 10 minutes of a final has been run, the results will be cancelled and a new start given for the total time of the final. Vehicles may be repaired before the new start.
 - B. If more than 10 minutes of the final have been run, the results at the moment of the interruption will be kept. The new start will be given for the time which remains to complete the final. The two results will be added to give the final and definitive placing. If the second start cannot be made for any reason, the results from the first part will be used as the final and definitive placing.
 - C. When the interruption takes place after 75% or more of the race is past, the results as at the time of the interruption becomes the final result. At the moment of the interruption of the race, the drivers will leave their vehicles on the start-line under the control of the Race Director. They may switch off the radio and stop the engine. There will be no repairs carried out to the vehicle or changing of tyres. Any driver who does not observe this rule will be immediately disqualified.

2.8.1. RAIN PROCEDURE DURING QUALIFYING

- 1 The Race Director and the Referees are jointly responsible for the decision to stop a race in the event of rain.
- 2 On the result sheets the Race Director or the appointed official must mark a heat "WET" when the heat was raced under wet conditions. On the corresponding record sheets, this must also be marked. The Race Director together with the Referees will decide in case of doubt. Heats are generally considered to be "WET2" when average lap times are approximately 20% slower than before, due to rain or moisture on the track.
- 3 When all drivers have had at least one dry heat, all results will be counted.
- 4 When weather and time permits, the Race Director may decide to offer an extra heat to those drivers who did not have a chance to drive a heat dry (i.e. when most drivers had 2 resp. 3 dry runs, a 2nd. resp. 3rd. run may be offered to those who had only 1 resp. 2 dry runs).
- 5 When not all drivers have had a chance to run a dry heat, only the wet results will be counted.
- 6 When continuation is judged to be senseless, or when other drivers should be offered a fair chance to drive under dry conditions, the Race Director together with the Referees may decide to end a heat or cancel a complete heat (2.7.-1.)

2.9. ACCIDENTS/CRASHES

- a) A yellow flag situation will be announced, if an accident occurs. (This must be a yellow flashlight combined with an audible signal, that can be operated by the referees and the race-director) During the yellow period overtaking other cars is not allowed. Cars are required to slow down so that they can stop immediately.
Disregarding this rule will be penalised by deducting one lap from the result of the driver concerned in that particular heat, sub-final or final. An

official warning has also to be issued. Racing will recommence at racing speed following display of a green flag or the official announcement "track is clear". Signals given by flags have to be visible for all drivers.

- b) Mechanics are allowed to enter the track to save the car of their driver. The mechanic may restart the engine (3x) beside the track, but not repair the car. The mechanic may not disturb the progress of other cars in the race.

Mechanics or Spectators entering the track from outside the pit lane to save a car will produce a penalty for that particular car. (Penalties can be given as stop and go or one lap penalty. The referees will inform the Team Managers about the sort of penalty given.)

If serviced by a spectator then the car should remain stationary until touched by a mechanic to save a penalty given.

The duration of a stop and go penalty given must be always as long as decided by the Referees and announced during the Team Managers meeting prior to the race-meeting. It is not allowed for any of the race officials to change the time of the stop and go penalties during the race meeting.

The driver have three laps time to come in.

Three stop and go penalties for one car during one race will lead to disqualification (black flag).

3. TRACKS

3.1.1 Tracks for Large Scale racing will be inspected by EFRA Officials with regard to safety provisions for drivers, mechanics, race officials and spectators. EFRA Officials have the authority to ask for improvements to be carried out before racing starts.

3.1.2 A monitor must be placed in the pit area or under the rostrum during all international races. (WC/EC/GP)

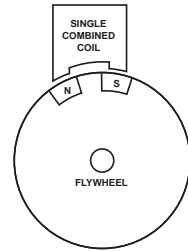
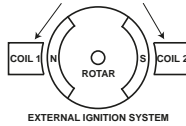
4. GENERAL Technical Specifications

4.1. ENGINE and FUEL

For Formula 1, Off Road and Fifth Scale Saloon:

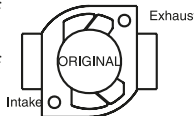
1. Only one marked engine allowed. In exceptional circumstances the race director may allow a second engine during the time of a wet track. The marked engine maybe repaired/serviced and parts replaced except for the cylinder. If a second engine or a cylinder is replaced, the originals will be kept in race control until the end of the event. A driver changing engine will receive an automatic stop and go in his first final unless the first engine/cylinder is shown to be beyond repair and outside the drivers control to Technical inspection. Each driver is only allowed to use a maximum of 2 engines per event.
2. The engine to be a single cylinder, 2 or 4 stroke, maximum 23 ccm, maximum 26 ccm for F1, 2wd, 4wd and maximum 30 ccm for short course pull starter or external electric starter. Electric starters can only be used in the pitlane and under no circumstances to be used on the race-track. There must be a secure protection on the flywheel cover to prevent people touching the flywheel or moving parts.
3. No Turbo charging, Fuel injection, Supercharging, Wankel or rotary valve/distribution engines are allowed.
4. All ignition must be mechanically fixed, only manual static adjustment is allowed. The flywheel can only have 1 (one) pair of magnetic poles (i.e. one north and one south).

-1. Touring cars and F1;- There can only be a maximum of 2 coils (either a single combined LT and HT coil with the standard type ignition with the standard type ignition or two LT coils with the external ignition systems) working with the flywheel/rotor

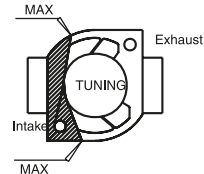


- 2. Off Road;- Only the standard Zenoah car engine type/size of ignition systems can be used.

5. No Battery operated ignition allowed. Only a passive ignition system using R.P.M. as the single input parameter is allowed.
6. Only open deck admission ports are allowed. The removal of material is free as long as the modified shape of the transfer/admission port walls are in the direction of the cylinder bore at all times.
7. The Cylinder block must be of a single casting. No independent liners or slipping liners are allowed.
8. The maximum numbers of admission ports is limited to 4.
9. Engine must be air cooled. The air being driven directly by the flywheel.
10. The crankshaft must be of split shaft configuration, with enclosed big end. No half crankshafts allowed.
11. An air filter must be fitted to the carburettor.
12. The maximum venturi diameter of the carburettor is limited to 13 mm.



Removing of material behind this line from bottom to the top of the transmission port is not allowed



13. Only fuel admitted will be petrol normally available at street petrol stations. The fuel must be bought at a fuel Station within the vicinity of the event. Details of the fuel station location and opening times should be provided by the race organiser prior to the event commencement, Fuel testing should begin prior to the start of qualification. Special fuel's like Avgas, race fuel etc. are strictly forbidden. The only additive allowed is mass production two stroke oil.

Technical inspection may ask for a sealed bottle of that oil, to check it.

If a fuel is found suspect, the driver will be asked to mix his fuel at technical inspection, so it can be verified.

If an organiser is able to provide fuel at the track, all competitors have to use this fuel. The price of this fuel must not exceed the normal street price by more than 5%. Fuel tests may be made at random during the race. If a fuel is found illegal, the driver will be disqualified from the particular event and they will not be allowed to enter an EFRA Large Scale event for the remainder of the current year and the full 12 months of the following year. The fuel tester must be available to the competitors during the event. If a driver wants to protest that decision, he has to make a written protest to EFRA with a deposit of 500.- EUR.

14. All drivers that qualify for the semi finals will have their fuel tank capacity tested prior to the semi finals. After testing the fuel tank will be emptied,

the drivers fuel container will be marked and remain in technical inspection (facilities permitting) until the driver/car is preparing to go out on track for their semi final and main final warm up. Only fuel from the drivers own marked fuel container is allowed to be used.

4.2. EXHAUST/NOISE REDUCTION

4.2.1 Maximum noise level is 81dB (A) measured at 10 metres, 1 metre above the track. The race director has the authority to decide a different method of measuring (using the EFRA noise trap) as long, as the result will be the same.

If a cars average over 10 or more laps exceeds the limit (with an additional +4db(A) for off Road and F1 classes) during the qualifying then the driver will loose their best qualifying result. If this level is exceeded during a final then the penalty is a 1 lap deduction at the end of that final. Under exceptional circumstances common sense will be used.

Both the Race Director and Referee's can decide if any car producing excessive noise is allowed to race.

Exhausts have to be of minimum three chamber type. No open exhausts or pipes are allowed.

The total exhaust must be inside the body, with the exception of the tail end of the pipe, which may protrude the body by no more than 10 mm.

No adjustable or moving parts are allowed in the manifold or muffler. The body may be cut out at that point max. 20 mm more than the tail end diameter.

Max. inside diameter tail end 13 mm.

4.2.2 All cars to be equipped with an air - box to reduce the intake noise of the carburettor. The air box must change the direction of air entering the carburettor by 90 degrees(or more) and be made of a rigid material. The exhaust must have a second muffler (if a two chamber exhaust is used) or be a three chamber type muffler. All three chambers must be designed so that the exhaust fumes will pass through and have to change direction twice to get the maximum possible noise reduction.

The design of that additional silencer is free, but with both systems together, the max. noise level must not be over 81 dB (A).

4.2.3 No refuelling allowed during racing for all cars in 1:5 Touring Cars and Off Road. Refueling is allowed only in Formula 1.

4.2.4 The Engines adjustments and warming are strictly forbidden in pits and working areas. They are allowed only on protected tables supplied by the Organisers, and in the proximity of pit lane, and of the Rostrum.

4.3. CAR

a. The car has to have a functioning brake, which has to be capable of keeping the car stationary whilst the engine is running.

b. A mechanical fail-safe has to be fitted to the carburettor which returns the throttle to a closed position in case of breaking of the throttle linkage.

c. Variable ratio transmission is not allowed.

d. Only 2WD (rear-wheel drive) In class Off road 4WD only four wheel drive cars are allowed.

e. No other function than steering and throttle/brake are allowed to operate with radio control by the driver. Any other electronic or hydraulic systems are not allowed in the car, with the exception of electronic fail save to stop the car in case of radio failure and the hydraulic brake system. Movable upper formula1 wing (DRS) can be operated together with brake or throttle function. A separate radio channel to operate DRS is not allowed.

f. The use of an electronic fail-safe system is highly recommended.

g. The ignition kill switch must be on his original place on the engine and the window on this side must be cut. The position must be market with an E (size 20 mm) on the bodyshell. To create more safety, it is allowed to have a second kill switch fixed near the rear window to allow easy access. This kill switch should be away from hot or moving parts.



4.4 TYRES

Tyres have to be black. The design of the tyre profile is free. It is not allowed to treat the tyres in the pit area. This means it is clearly forbidden. But if someone use it at home, it is recommended that the chemical components of these products must be harmless for people and environment. Liability at the use of tyre additives lies at the user and manufacturer. Oil of wintergreen, paragon and other strong smelling products are prohibited.

5. SPECIAL TECHNICAL SPECIFICATIONS
5.2 LARGE SCALE FORMULA

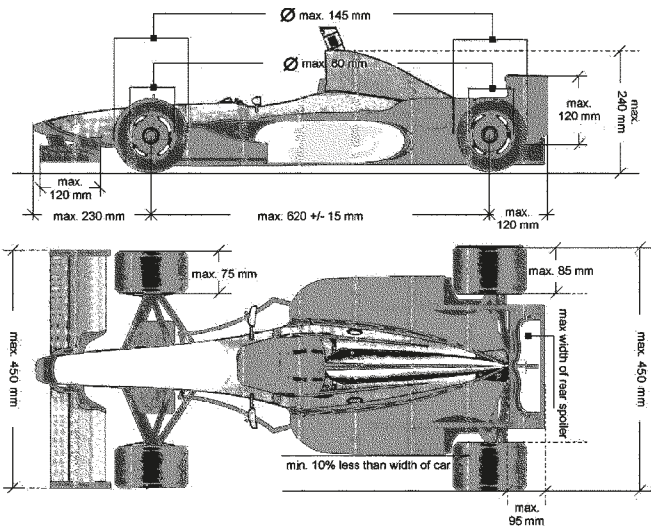
Only Formula one cars following the FIA 2000/1 (or younger) Formula One Regulations are allowed. Bodies must be the model of a existing car from the season 2000/1 or younger. Paintwork and colour is free. The design of the visible suspension parts must have the same appearance than the original F1 cars.

All cut-outs must exist also in the full size car. Cut outs for the engine and fuel tank are allowed in the area of the tank seal, starting device and adjusting screws for carburettor i.e. choke, neutral gear etc.

For Formula cars the side pods have to be used for the starting number. About the design of the Car numbers see 5. General Requirements EFRA Events 5.2.4

5.2.1 TECHNICAL SPECIFICATIONS

Minimum weight dry	10.000 g
Width Formula maximum	450 mm (incl. tyres)
Height maximum	250 mm



Wheel base	620 mm +/-15 mm
Fuel tank - capacity	Maximum 700 cm ³ with the fuel filter, fuel pipe and without any removable pieces inside
Tyres front diameter	142 mm +/- 5% = 134,9-149,1mm
Tyres rear diameter	142 mm +/- 5% = 134,9-149,1mm
Tyre width front minimum	60 mm, max. 75mm
Tyre width rear maximum	85 mm, rear wheels must be min. 5 mm wider than the front wheels
Rims outside diameter	80mm +/-5mm, indicators must be the same on tyres and rims.

No mixture of +/- is allowed on the wheels and tyres. No tyre will be measured after the race.

5.2.2 TYRES

Tyres must be semi-pneumatic rubber.

They must be moulded in one piece

In case of rain the use of rain tyre can be allowed by the race director.

5.2.3 FRONT SPOILER

Max width 450 mm max. cord 120 mm. The front spoiler must be fixed at the chassis, so that it can bend up or down in case of an accident.

REAR WING

The rear wing must fit into a side profile box of 95x120 mm. The number of added wings inside is free. The rear wing must not be wider than the space between the rear tyres.

The front part of the car should not overhang the centre of the front wheel by more than 230 mm. The rear wing and a the diffuser should not overhang the car by more than 120 mm.

The width of the side-pods must be min. 10% less than the overall width. They should not be higher than the tyres.

5.2.4 TANK SIZE, ENGINE RULES, AIR BOX, MUFFLER ETC.

Air box, muffler, engine rules, etc have to follow Large Scale General Technical Specifications.

Exhaust outlet pipes must exit within the body shell side pods and point down to the track.

5.2.5 F1 WINGS

Front and rear wing are part of the bodyshell of a F1 car and must be repaired immediately if they get damaged or come off the car.

5.3 1:5 Scale TOURING CARS

There is one series recognized in accordance to the 1:1 scale series namely the Touring Car Championship Series, following FIA class 2 Super Touring Car, FIA Group N and Touring Cars Super 2000.

Touring cars raced in national series like Australian V8 Supercars, CTCC ;German Procar, Italian Super Stars will also be allowed with the only restriction that rear wing has to follow 5.3.5.

5.3.1 GENERAL SPECIFICATIONS

The car body has to comply with the calculated scale dimensions 1:5 with the allowance of using the following tolerances.

Length:	within scale +/- 5%
Width:	max. 395 mm measured at the widest point of the bodyshell
Height:	within scale +/- 5%

- Tank capacity: 700 cm³ (including pipes to and from the carburettor and any fittings)
- Minimum weight, without fuel: 10.000 g
- Maximum weight, without fuel: 12.000 g

5.3.2 All 1:5 cars have to be genuine scale in all details and proportions and be a fully detailed model of an existing 1:1 touring race car. If the allowed tolerances are used, then all parts of the model in that particular view have to be within the same sign (wheelbase-, length-, //wheelbase+, length+). Mixtures of car designs are not allowed.

The minimum length of a Super Touring Car is 4.200 mm that gives a minimum length of 798 mm in scale including max.-tolerance.

All recognized cars must have a minimum length of 4,200 mm/165.35 in. All bodies that are produced world-wide, descend from a original touring car racing and are commercially available, under consideration of Paragraph 5.3, will be allowed. Only bodysells that are approved by EFRA will be allowed to race in EFRA sanctioned events. The EFRA homologation number has to be permanently engraved or moulded in within the space normally used for car registration numbers at the rear end of the model. The minimum weight of the body is 500g (ready to race including wing/support under the wing if used and body side guards but excluding any air ducting or other optional parts/braces). Weights are NOT allowed to be added to the body.

5.3.3 BODY

Bodies have to follow the description in point 5.3.2. They have to be properly fixed to the chassis and must cover the outer edge of the wheels at the centre of the axle when viewed from the top.

It is not permitted to cut the windscreen out. The side and rear windows may be cut out for cooling. It is not allowed to open them by cutting out only some holes. Also it is not allowed to mould air channels into the side windows to guide air into the interior. The body shells have to be painted and all windows to remain clear.

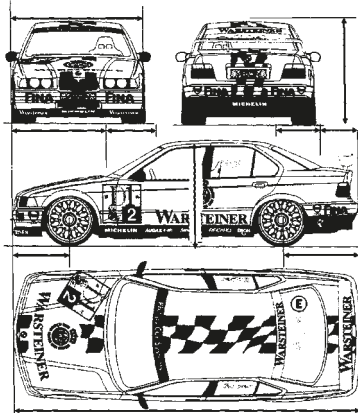
All parts of the car have to be covered by the body. Only the radio antenna is allowed to come outside. All openings in the body have also to be in the existing 1:1 race car.

It is not allowed to modify the car body by cutting it over the marked trim lines or to widen it by heating it or parts of it.

The start numbers must be placed according to the drawing (and the corresponding picture). About the design of the Car numbers see 5. General Requirements EFRA Events 5.2.4.

If the race-meeting has started, a competitor is only allowed to change the body shell in case of damage to a body shell of the same brand and car design. Only allowed for manufactures: Aerodynamic modifications at the front, the sides and the rear below the wheel hub centre are free subject to the requirements for ground clearance, overall length and overall width.

The modifications have to correspond to the original. The materials have to



be the same as that of the bodyshell. The homologation number has to be engraved. A photo of the modification 1:1/1:5 have to be sent to the responsible Homologation Officer.

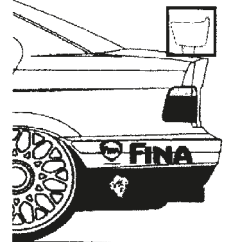


5.3.4 GROUND CLEARANCE

The measurement of the body shell height will be made with 6mm ground clearance.

5.3.5 WING/SPOILER

A single rear wing is permitted as long as it does not exceed the front view profile and the length of the car. The wing has to fit in a side "profile box" measuring 60 mm x 60 mm per side and should not overhang the end of the car. Extension pieces extending past the main end plates are not allowed



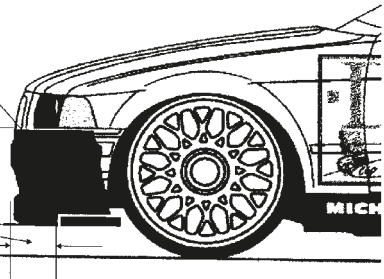
5.3.6 BUMPER

A bumper has to be fitted to the chassis. Bumpers have to be designed in a way that they fill the front of a car body completely and be a minimum height of 40mm. The material used has to be flexible like PU-RIM or other foams, that are used in 1:1 car construction to absorb impact energy. At

PU-RIM
or other
foams

min. 40 mm

min. 35 mm



no point may any part of inflexible material for bodyshell mounting protrude from the body more than 10mm. If an opening is created through the foam bumper for cooling air, the combined thickness of the foam (above and below the cooling hole/slot) must still be a minimum of 40mm in height.

5.3.7. TYRES

Rim Diameter	max.: 107 mm
Rim and fitted tyre Diameter	max.: 136 mm
Rim and fitted tyre width - front	max.: 75 mm
Rim and fitted tyre width - rear	max.: 80 mm

Only semi pneumatic rubber is allowed. Foam tyres are not allowed.

For European Championships, each manufacturer must nominate 4 compounds of wheels-tyres-insert to the EFRA Chairman a minimum of 28 days prior to the start of the event.

One of the nominated compounds must be a wet weather tyre. These must be available through distributors and the list will be published on the EFRA web site.

Only these tyres will be allowed to be used during timed practice, qualifying and finals. At the event each manufacturer will give one pair of wheels/tyres of each nominated compound to Technical inspection to be used as reference

and control tyres. These tyres can also be marked and exchanged (of the same compound) with any chosen driver to use during qualifying or finals (in due time for preparation/tyre warming etc). Any tyres remaining at the end of the event will be returned to the manufacturers.

Any driver found to be running any other compounds will be disqualified from that qualifying heat or final as appropriate.

5.3.8 Electric Touring Cars

Introduce Electric cars into the GP series for 2018, run as a separate class.

Minimum Weight 11Kg

Maximum Battery Size 25Ah, 8s.

The same battery size must be used during qualifying and finals.

All batteries must be either hard cased or enclosed in a box in the car and charged in a Lipo bag.

Semi Finals and Main Final 20 minutes duration.

Bumpers, wings, tyres etc as per the engine driven touring cars.

5.4 Large Scale Off - Road Rules

Technical requirements for Large scale off road racing with 2WD and 4WD.

5.4.1 Technical classes and weight

All cars have to be large scale

Only rear wheel drive allowed in the 2wd class

Minimum weight limit 10kg for 2wd & 4wd, and 14kg for short course.

Weight limits for a race ready car with transponder / PT but no fuel load

Modifying or self builder cars are allowed, as far as those fulfil the technical rules mentioned.

5.4.3 Exhaust: Exhaust as per General Technical Specifications, 4.2 Exhaust/Noise Reduction, except:

The exhaust end pipe may be outside the shell. This pipe must be fitted rearward or to the ground and within the size of the car.

5.4.4 Fuel tank sizes

The maximum content of the fuel tank including pipes to the carb is 700 cc for 2WD, 800 cc for 4WD and 850cc for the Short Course class.

5.4.5 Only 2 wheel rear drive is allowed in 2WD-class. Only all-wheel drive is allowed in 4WD-class.

Cars with electric drive, propellers or rocket-fuel drive are not allowed

Cars can only have 1 gearing: no multispeed transmissions allowed

5.4.6 Clutch and brake: The model cars must have a working clutch and brake system. Other than Active ABS systems there are no restrictions for brakes.

5.4.7 Bumper: All models must have a front bumper, a rear bumper is allowed but not mandatory. Bumpers must be made from a flexible material. The front bumper must have a minimum width of 100mm, a maximum size of 220 mm width, and 300 mm minimum width for short course. A rear bumper can have a max size of 300 mm width.

5.4.8 Tyres and wheels

Wheels: maximum diameter 160mm and maximum width 75mm.

Tyres: maximum diameter 190mm and maximum width 85mm.

Only wheels and tyres designed and made for large scale off road use are allowed and they must be commercially available .

The tyres have to be on the market a minimum of 4 weeks before the event starts.

The tyres must have been sold to everybody who wanted to buy them.

5.4.9 Chassis, Body measurements

Only large scale body shells are allowed.

The body must be fully painted except for the windows.
 Short Course bodies must cover the wheels.
 Motorstop access must be easy.
 The chassis must be flat underneath and no screws may extend.

Car size

2wd & 4wd buggy:

Max length	820 mm
Max with	480 mm with fully compressed suspension
Max height	360 mm with fully compressed suspension
Max wheel base	599mm (Rule applied from 2020 onwards)

Short course truck:

Min length	850 mm
Max length	1000 mm
Min width	480mm Track measured at full suspension ride height
Max width	530 mm Track with fully compressed suspension
Min height	300 mm
Max height	350 mm with fully compressed suspension
Min wheel base	600 mm
Max wheel base	650 mm.

5.4.10 Wing

The wing must be made from a flexible material

2WD Max size 300 mm x 140 mm offroad.

Overhang max 150 mm from the middle of the rear drive shafts

4WD 315 mm x 140 mm

Overhang max 230 mm from the middle of the rear drive shafts

5.4.11 Marshalls have to be 16 years of age minimum. If not they need to have an experienced substitute who is made known to the race director. Through qualifying the on track marshals shall be from the previous heat (the last heat of the round will marshal the first heat) and marshal on their car number positions. For the finals, each marshal point will be allocated to a country to cover marshal duties through out all the finals. This will be based on each countries driver numbers (a large country team may be required to cover 2 marshal points, where as small country teams may be required to cover 1 marshal point between them). All marshals must be competitors at the event.

5.4.12 Race procedure's as in EFRA Large scale except:

Semi final duration will be 20 minutes.

The top 5 from each semi final will be promoted to the main final.

QUALIFYING SYSTEM: In each round drivers will score points based on laps and times achieved. The fastest competitor (based on laps & time) in each Round will score zero (0) points, second place 2 points, third place 3 points, fourth place 4 points and so on. If two (or more) competitors achieve an equal time in any Round they will be awarded equal points. The next competitor not included in the tie will be awarded points corresponding to his position in the particular Round. (NOTE: drivers not recording a time or having a time disqualified in any Round score points for last place in that Round). Overall Qualifying positions are decided by each drivers "best" (lowest) points being added together, based on the number of rounds to count. In the event of a tied position the driver with the single highest finishing position in any of the best rounds that counted will be awarded the tie (eg. 1+3+3 = 7 beats 3+2+2 = 7). In the event of a continuing tie then the laps and times from the best points Round will be compared. The driver with the fastest laps and time will be awarded the tie. In

the case of a continuing tie, then the times from the next best scores will be compared. Only counting Rounds will be used to decide Qualifying positions (or ties), all other Qualifying Round scores and times will be discarded. Out of 5 (five) completed rounds 3 (three) to count. Out of 3 (three) and 4 (four) completed rounds 2(two) to count. Out of 1 (one) and 2 (two) completed round 1 (one) to count.

5.4.13 Tracks

a) Size: Minimum preferred total length: 200 meter. Minimum preferred width between marking/lanes: 3.5 meter for GP's 4 meter for an EC. The point most far away from the middle of the drivers rostrum can be 60 meters

b) The track design can be made by the organiser. Obstacles as trees, etc cannot be inside the track area. The drivers view to the track must be free without obstacles of any sort.

The track must be made with a reasonable variety of small and large corners, left as well as right handed. The straights must have different lengths.

c) Marking

The lanes must be clearly viewable by the competitors on the rostrum and the track markers must be chosen in such way the cars will not be damaged if they hit the track markers. The track markers must be solid enough not to be moved by a single contact.

d) Track markings

The organiser must make sure a car can never come into the public. Safety of the public, drivers, mechanics and race directors / assistants must be maintained all time by a safe and functional track surrounding. The track markers must be situated so that corner cutting is highly impossible and cars cannot enter another lane easily. Track markers can be made of wood, fire hoses filled with sand, rubber hoses etc. By choosing the track markers the safety of the public is far more important as preventing damage to the cars.

e) Start / Finish

There must be a clearly visible start/finish line. On the finish line the timing loop must be placed in such a way that the cars may not damage it. In case of a loose track surface the markings for start finish can be made on the track markers.

f) Pits: It needs to be separated from the track Pits entrance and exit needs to be at least 1 meter width.

g) The drivers preparation area needs to be within a reasonable distance of the track. It needs to have pit tables for all drivers and 220 volts available. Only drivers, mechanics and race officials can enter the pit area. They have to show ID cards, made available by the organiser to identify. Each driver should receive a card for himself and 2 cards for mechanics

h) Only weather resistant track surfaces to be used at European Championships from 2014 on.

5.4.14 All warnings and instructions must be clear to hear for all competitors and mechanics.

5.4.15 Adequate sanitary must be available during the event.

APPENDIX 8

HOMOLOGATION OF MUFFLERS

1. GENERAL

Each motor must be equipped with an exhaust system and an inlet silencer to reduce the amount of noise generated by the car. The noise level is a combination of RPM, motor design and performance, muffler, manifold, gearing and body. The better the combination, the more performance and more RPM. Since EFRA can only check 2 of these items (muffler and INS box) there is no way to control the noise in a good way on a track without extra measurements. The only solution is measurement on the track by means of a so called "Noise Trap. For the future we will talk about registration of mufflers and no longer about homologation, simply to avoid interpretations as that a homologated muffler is always OK. The legal noise level within the European Community is 83 dB's, without the need for extra personal protection. EFRA's definition of a noise level is always final. For 1/8th IC track races only EFRA registered mufflers with a minimum of 3 chambers are allowed on EFRA sanctioned events. The EFRA registration number must be engraved on the sidewall of the muffler.

For 1/8th Off Road, only EFRA registered with a minimum of 3-chamber mufflers are allowed. The EFRA registration number must be engraved on the sidewall of the muffler. For 1/10th IC track, only EFRA registered 2-chamber mufflers list are allowed on EFRA sanctioned events. The EFRA registration number must be engraved on the sidewall of the muffler. The sections will use a so called "noise trap" to check noise level on the events. Depending on the track layout the noise trap will be installed and used to take out cars that make too much noise. The final noise limit for an event must be set prior to timed practice.

All mufflers on the 2013 list that are still sold and manufactured must be registered again before March 1st 2014 to be able to be used for the 2014 season. The registration period will be limited to 2 years and needs to be renewed after that period. Mufflers that were allowed in 2013, EFRA 2103 till 2109 do not need registration for 2014, including the RCE mufflers with the double wall and rear muffler outlet. WHY REGISTRATION. Registration is needed to be sure mufflers are made according to specific dimensions. Registration is needed to make sure there is a product available in the shops Registration is needed to avoid self made mufflers used at club level. Registration is needed to control the design and weight which are part of the noise production.

2. REGISTRATION FEE

will be: see General Rules 3.5.7. > 120 euro (60 euro for Assoc. Members).

3. REGISTRATION NUMBER:

Every accepted muffler is issued with an EFRA registration number which must be indelibly pressed or milled on the sidewall.

4. TECHNICAL DETAILS

A very important factor in the control of the noise level of a muffler is the design of the mandatory 2nd and 3rd chamber and the total length of the outlet pipe. The outlet pipe for 1/8th scale may have a maximum of 8.00mm diameter. For 1/10th the maximum is 5.20 mm

5. TOLERANCES

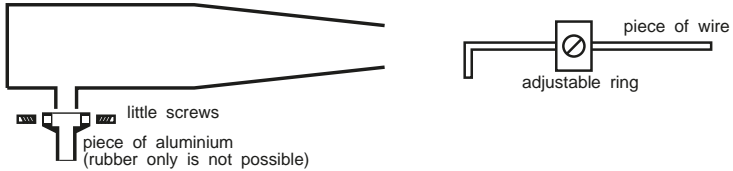
Recognizing that the component parts of a muffler are joined together, it is quite clear, that there may be some slight differences in total measurements. This will not lead to dramatic noise level variation, but one important point

must be mentioned: The 2nd cone must be in line with the outlet pipe, if this is a feature of the original design. The outlet pipe may have a minus-tolerance of 2 mm. To check the total length of the outlet pipe use a tool similar to that shown below.

6. PRACTICAL TIP

Some drivers cut the outlet pipe, because they fear damage during the race. Of course this is not allowed. To help in such a case, here is a tip:

7. EFRA REGISTERED MUFFLERS



Updated lists of mufflers which are registered each years will be found on the EFRA-website.

8. INS box dimensions.

The performance of the INS box is based on its form and measurements. Therefore it is strictly forbidden to change anything on its internal dimensions. The INS box for 1:8 and 1:10 are the same, only the foam filter has another dimension to fit the carburetor. A list of the approved INS-Box will be published on the EFRA webpage.

APPENDIX 9

PROCEDURE FOR BODY-APPROVAL (1/8 TRACK, 1/10 TRACK, ELECTRIC TRACK & LARGE SCALE)

1. Any manufacturer, who wishes to submit a bodyshell for homologation must first contact the EFRA Treasurer who will invoice them the required amount and forward to them, together with the invoice, the EFRA Bodyshell Homologation Form. Sanction Fee will be set at the EFRA Annual General Meeting.
- 1.a Bodies for 1:10th, 1:8 class and Electric Track.
Anyone who wishes to have a body tested and homologated must submit 2 samples before January 31st to the body homologation officer.
Bodies will be checked and verified between December 1st and February 28th and will be put on the EFRA webpage for publication on March 1st.
After publication no other bodies will be added to the list before the end of the running year.
2. All manufacturers must submit the following to the EFRA Homologation Officer (DO NOT SEND BODY SHELL TO THE TREASURER):
 - a) The completed EFRA Homologation Form
 - b) Pictures of original 1/1 car body from two of the following elevations.
 - top
 - front end
 - rear end
 - side
 - c) Any other information that may be necessary
e.g. Race results for real car races
Manufacturers data for production cars
 - d) TWO examples of the model body from the final tool with all character lines and other elements present. This will be retained for referral. All wings custom designed for the body must be included.
 - e) For Large Scale models it is only necessary to send 1 (one) example of the body shell. Drawings and photographs will be retained by the Homologation Officer as proof of the homologation. Bodyshell must be clearly marked (stamped or engraved) with the homologation number.
 - f) All Bodies currently on the EFRA approved list will remain legal for five years or earlier removed.
3. Upon receipt of the above items, the Manufacturer will receive a confirmation from the Homologation Officer with the date of receipt. If any of the above items are missing, or photographs or other data are considered by the Homologation Officer to be of insufficient quality, homologation will be refused. The reason for refusal will be given.
4. Within one month of confirmation of receipt, subject to confirmation from the EFRA Treasurer that the sanction fee has been paid, the Homologation Officer will either:-
 - a) Approve the body, when the model body is an acceptable representation of the original.

OR

 - b) Refuse homologation, when the differences from the original are too great. If the body shell is refuse the reason for refusal will be stated.

Each homologated body will have an unique EFRA number, even if the same

type of bodyshell is already approved for a different manufacturer. The EFRA number must be set in an area immediately adjacent to the cockpit, preferably in front of the windscreen. Body homologation number must be visible at time of technical inspection. Therefore manufacturers must place the number in an area of the body which will not be cut out. (Bonnet in front of the driver, front spoiler, windscreen)

All shells with separate customised wings must have the homologation number moulded into all parts of the wing as well as the body. The wing must be submitted for homologation at the same time as the body for which it is intended to be used. The wing may only be used with the shell with which it was homologated.

5. The homologation period lasts for five years, after which the body may be resubmitted, provided it still satisfies all regulations concerning the individual body class and is still in use.
6. The manufacturer may, if he wishes send a preliminary example of the model body to the Homologation Officer for interim advice. The body need not be taken from the final tool but all character lines and other details must either be moulded on or marked on the body in pen. Photographs etc. must be enclosed as in the full homologation procedure. The Homologation Officer will give a non-prejudicial opinion on whether the body would be homologated in finished form. If he decides that the body would not be approved, he may, if he wishes, give specific reasons. A fee to cover expenses will be charged for this service. Fee to be set at the EFRA Annual General Meeting.
7. Once approved, the tool must not be modified in any way. Should the tool be modified, the EFRA number must be filled in and an example of the modified body submitted to the Homologation Officer for full re-submission.
8. All information and examples of bodies sent to the Homologation Officer will be retained during the homologation period of five years. All examples of large scale bodies sent to the Homologation officer will be sent back to the manufacturer with the homologation number engraved in. The manufacturer has to retain the example body during the homologation period of five years. If the Homologation Officer suspects that a body has been modified post-homologation he may anonymously purchase an example of the body for checking. If he finds that the body has been modified it will be immediately removed from the approved lists.
9. After 5 years a body will disappear from the list unless the manufacturer asks for a license for another period of 5 years. The fee for an extra period is 40% of the normal homologation fee.
10. EFRA Homologation Officer:
See List on page 8 in the address section
11. Special Homologation rules for 1:8 scale.
The body must be a replica from an original race car.
Cars must have raced in either Sports Can Am classes, Proto-type, Group-C, Le Mans, American Le Mans or GT1/GT2 classes.
Bodies must be a 1:8 scale in character reproduction of vehicles that exist or have existed in the last five years. There will be an allowance of tolerance in all dimensions.
Once homologated by the homologation officer the name of the body can be changed to a name or production reference from the manufacturer. This name or reference will be used at the EFRA body list.

The rear of the body after the rear axle is free and does not have to be within the measurements of the original.

Overall dimensions of the car:

Wheel base: 270.00-330.00 mm, overall width max 267.00 mm

Overall width of the body max.: 267.00 mm, measured on top of the wing and on top of the sides and the lower front side.

The lower sides between the two front and rear wheel arches will not be taken into account for technical inspection as long as they are not wider as 277 mm.

The following differences from the original are allowed;

Side dams on the model after the rear axle may not be higher than 40 mm.

Side dams from the front axle till the rear axle may have the following dimensions;

From front axle over the first 150 mm, not higher than 8 mm and not more than 20 mm over the next 100 mm.

Behind the driver the body may be adapted to suit fuel tank. Driver may be moved slightly to the front or to the left or right to avoid conflicts with tank.

Driver may not be cut because of fuel tank opening.

All bodies will have the EFRA number engraved into the body at such a place that it is visible all the time.

For minor changes the body will get an extension on the number, for instance, EFRA2004001 will be EFRA2004001A after the changes. After a second change it will be EFRA2004001B.

All changes must be submitted to the homologation officer and need to be accepted by EFRA and will be charged with 40% of the original homologation fee.

Different bodies with the same number are not possible.

Bodies must be presented to the homologation officer latest end of January and will be published on a list on March 1st the latest.

12. **Body lists**

Lists of the approved bodies will be published on the EFRA webpage.

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