



FÉDÉRATION INTERNATIONALE
DE MOTOCYCLISME

FIM WORLD CHAMPIONSHIP GRAND PRIX REGULATIONS

2021

*RÈGLEMENTS DU CHAMPIONNAT
DU MONDE FIM DES GRANDS PRIX*



Articles amended for the season 2021 are in bold type
Articles amended since 31.1.2021 are in red and bold type

FIM WORLD CHAMPIONSHIP GRAND PRIX REGULATIONS



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THIS BOOK PREVAILS OVER ALL OTHER FIM RULE BOOKS EXCEPT THOSE REFERRED TO AS AN APPENDIX.

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AMENDMENTS TO THE FIM WORLD CHAMPIONSHIP GRAND PRIX REGULATIONS

The FIM, through the Grand Prix Commission and the Grand Prix Permanent Bureau, may at any time amend any or all provisions of the Regulations.

Any subsequent changes that take place after the printed versions are completed will be made electronically, and the on-line versions will be the prevailing versions.

The Permanent Bureau consists of:

- One Representative of the Fédération Internationale de Motocyclisme (FIM).
- One Representative of DORNA.

Which shall meet on a regular basis to discuss and decide on all issues of the FIM Grand Prix pertinent to the respective interests of the members.

The procedures for the calling of meetings of the Permanent Bureau and for procedures during such meetings (which may be held by telephone or other electronic means) and for the appointment and/or vacancy of representatives and all procedures for their deliberations shall be as mutually agreed by the members from time to time provided always that a decision of the Permanent Bureau shall only be effective with and upon the unanimous vote of the members.

The Grand Prix Commission is competent to study any proposal of changes to the FIM World Championship Grand Prix Regulations.

The Grand Prix Commission consists of:

- One Representative appointed by the Fédération Internationale de Motocyclisme (FIM).
- One Representative appointed by the manufacturers, through MSMA.
- One Representative appointed by the teams and riders, through IRTA.
- One Representative appointed by DORNA who will be the Chairman of the Grand Prix Commission.

Any resolution voted by the Grand Prix Commission shall require the simple majority and the Chairman will have the casting vote in case of a tie. The resolutions of the Grand Prix Commission shall be effective subject to the approval of the Permanent Bureau. The parties shall procure that the meetings of the Grand Prix Commission take place no later than fourteen (14) days following the request of any Representative for that meeting.

GENERAL UNDERTAKINGS AND CONDITIONS

These Regulations derogate and supersede all and any other previous regulations in place before the date of publication of these regulations.

Any references to the male gender in these documents are made solely for the purposes of simplicity, and refer also to the female gender except when the context requires otherwise.

All riders, team personnel, officials, promoters/organizers and all the persons involved in any capacity whatsoever participating in the FIM World Championship Grand Prix (hereinafter collectively referred to as the “Championship”) undertake, on behalf of themselves, their employees, and agents, to observe all the provisions of:

1. SPORTING REGULATIONS
2. TECHNICAL REGULATIONS
3. DISCIPLINARY AND ARBITRATION CODE
4. CIRCUIT STANDARDS
5. MEDICAL CODE
6. ANTIDOPING CODE
7. ENVIRONMENTAL CODE
8. CODE OF ETHICS

as supplemented and amended from time to time (hereinafter collectively referred to as the “Regulations”).

All the persons mentioned above may be penalised in accordance with the provisions of the Regulations.

Whilst the Regulations may be translated into other languages, in case of any dispute regarding interpretation the Official English text will prevail.

It is the responsibility of the team to ensure that all persons concerned with its entry observe all the requirements of the Regulations. The responsibility of the rider, or any other person having charge of an entered machine during any part of the Event with respect to observance of the Regulations is joint and several with that of the team.

All persons concerned in any way with an entered machine or present in any capacity whatsoever in the Paddock, Pits, Pit lane or Track, must wear an appropriate pass at all times during the Event.

ANTIDOPING CODE

All the persons concerned must at all times observe the FIM Anti-Doping Code and may be penalised accordingly.

1. SPORTING REGULATIONS

1.1 Introduction

1.1.1

A series of motorcycle races counting toward the FIM World Championships for Riders, Teams and Constructors (engine for Moto3 and MotoGP; frame for Moto2) will be organised.

When applicable, Riders and Teams will also compete for Trophies.

1.2 Events

1.2.1

The Event shall be deemed to commence at the scheduled time for Technical and Sporting Checks and finish after all the races at the expiry of the deadline for the lodging of a protest and the time at which technical or sporting verifications have been concluded, whichever is the latest.

The race control must remain operative with all equipment in place until the end of the period provided for the lodging of a protest, and all officials and marshals must remain at the circuit available to the Race Direction and FIM Stewards during that period.

1.2.2

Events must be staged on race circuits that have been homologated by the FIM for the Championship.

1.2.3

Events must not include any other races except for support races approved by the FIM and DORNA.

1.2.4

Any activity involving 4 wheeled racing vehicular use of the track during the event, including “demonstrations”, displays or the suchlike must receive prior approval from FIM and Dorna.

1.2.5

Event Promoters (hereinafter “Promoter”)* will be nominated by the FIM and DORNA.

* ”Promoter” in this Sporting Regulations section refers to the organiser and/or promoter of that individual Event.

1.2.6

The Promoter is responsible for providing the facilities and personnel to ensure the smooth and efficient running of the event.

1.2.7

The Promoter will arrange third party liability insurance including cover for all participants, teams, sponsors, service companies, officials, FIM, DORNA, IRTA, etc.

The cover provided for each event shall be US \$6 million, with the exception of the USA and Canada, where the cover shall be different.

The Organiser will send a copy of such liability insurance to Dorna by courier or telefax, at least 30 days prior to its event. At least 15 days prior to the event; Dorna shall let the Promoter know if some amendments must be made to the aforesaid liability insurance to meet the insurance laws of the organiser’s country.

The validity of the insurance must start at 00:00 hrs, on the Monday (or Sunday in the case of Saturday races) before the race and finish at 24:00 hrs on the Monday (or Sunday in the case of Saturday races) after the race.

1.2.8

At least 90 days prior to the Event, the Promoters of the event must submit the following information to the FIM and DORNA:

- a) Confirmation of the name and address of the Promoters, including email, telephone and facsimile numbers for correspondence.
- b) The date and place of the Event.
- c) A detailed plan of the circuit, its direction, clockwise or anticlockwise, and length.

- d) The location at the circuit of the rider information centre and the official notice board.
- e) The name and address of the company providing the third party liability insurance cover and the number of the policy.
- f) Name and address of FMNR.
- g) The name of the Clerk of the Course (with FIM Grand Prix Clerk of the Course Superlicence).
- h) The name, address and telephone number of the Chief Medical Officer (with FIM Grand Prix CMO Superlicence).
- i) The name, address and telephone number of the hospitals designated for the event.

N.B. The Promoter is not required to produce or publish any Supplementary Regulations for the event.

1.2.9

At least 60 days before the Event, DORNA must publish the above information and post it to IRTA for distribution to all teams with an entry for the Event.

1.3 The Paddock

1.3.1

The Paddock, pit boxes and all other facilities must be available to teams at least on the Wednesday prior to a Sunday race and remain available to competitors for at least one day and, if possible, two days after the event.

1.3.2

Access must be available for teams arriving to set up between the hours of 08:00 and 22:00.

1.3.3

At all times that the Paddock is occupied there must be 24 hour attendance at the gates providing vehicular access to the circuit and paddock.

1.3.4

When the Paddock is occupied there must be an adequate medical and fire fighting service available to all riders, teams, manufacturers, sponsors, service companies, officials, FIM, Dorna, IRTA, etc.

At minimum the services must be available from 08.00 - 18.00 hrs on the two days prior to the “setting up of teams day”, and on a 24 hour basis for the remainder of the event, ending at midnight on the day after race day.

1.3.5

Full security must be supplied to the Paddock area from at least midnight of the Wednesday prior to a Sunday race until midnight of the Monday following the race.

1.4 Officials

All the following Officials must be present and available at the time necessary to ensure smooth and efficient running of the Event:

1.4.1 Permanent Officials

All permanent officials shall be appointed for the Championship by the Permanent Bureau.

The following officials will be appointed to perform supervisory and executive roles. Except in cases of illness or Force Majeure the officials will be expected to be present at each event.

Race Director

Responsible for ensuring proper observance of the Regulations and efficient running of the practice and races. The Race Director is also responsible for all communications between the Event Management Committee and the FIM MotoGP Stewards Panel.

The Clerk of the Course shall work in permanent consultation with the Race Director. The Race Director shall have overriding authority in the following matters and the Clerk of the Course may give orders in respect of them only with his express agreement:

- a) The control of practice and the race, adherence to the timetable and, if he deems it necessary, the making of any proposal to the Race Direction to modify the timetable in accordance with the Sporting Regulations.
- b) The stopping of practice or the race in accordance with the Sporting Regulations if he deems it unsafe to continue and ensuring that the correct restart procedure is carried out.
- c) The starting procedure.
- d) The use of medical cars/fast interventions vehicles.

Deputy Race Director

Responsible for all duties of the Race Director in the event that the Race Director is unavailable.

Technical Director

Responsible for ensuring that technical Regulations are correctly enforced and supervising scrutineering and protests of a technical nature. The Technical Director has the power to disallow the use of any parts based on safety concerns at his/her sole judgement and discretion. The Technical Director may from time to time issue and update general design guidelines which are considered as part of the technical regulations.

Medical Director

Responsible for liaison with the Chief Medical Officer who is appointed by the Promoter to ensure compliance with the Medical Code.

FIM Safety Officer

Responsible for the supervision of all aspects of safety.

Starter

Responsible for the start procedure.

1.4.2 Individual Event officials

All individual Event Officials shall be appointed for each event by the FMNR/Promoter and shall be approved by the FIM.

They are:

i) Clerk of the Course

Responsible for:

- a) Ensuring that the circuit is suitably prepared for and maintained during the Event and that all legal requirements applicable for the running of the event have been complied with.
- b) Ensuring that all officials and services are in place.

The stationing of all track personnel and equipment (i.e. marshals, fire-fighting services, Moto-Taxi, recovery and intervention vehicles, flags, etc.) alongside the Circuit no later than 30 minutes prior to the beginning of all practice sessions and warm-ups.

Once the morning medical inspection is finished, Medical personnel should stand 5 metres behind the Track Marshals or leave. Only sportive personnel should stay on the edge of the track for the “sporting” track inspection.

The Race Director, the FIM Safety Officer, the Clerk of the Course and the Medical Director will make the final inspection of the Circuit to ensure this regulation is complied with, 30 minutes prior to the beginning of the day’s first practice sessions and/or warm up.

During the final inspection lap, the yellow flag must be waved at each flag marshal post together with the display of other flags and equipment requested by the FIM Safety Officer.

- c) Taking decisions to ensure the smooth and efficient running of the event.
- d) Ensuring that the event is run within the Regulations.
- e) Notification of protests to the FIM MotoGP Stewards Panel.
- f) Immediate approval and signature with time of provisional results (practices, warm-ups, starting grids and races) and presentation of reports to the Event Management Committee.

ii) Secretaries

Responsible for:

- a) During the event effecting communications between the various officials.
- b) Providing secretarial support for the Event Management Committee, the Race Direction and the FIM Stewards.

iii) Other Officials

Marshals, Technical Scrutineers, Security Personnel, Medical personnel etc., as required for the efficient running of the event.

All communications between the individual Event Officials must be made via the relevant Permanent Officials.

1.4.3 The Race Direction

The Race Direction shall be appointed for the Championship by the Permanent Bureau.

1.4.4 The FIM Stewards

The FIM Stewards shall be nominated by the FIM and approved by the Permanent Bureau.

1.5 Event Management

1.5.1

The management of the event will be carried out by the Event Management Committee which will comprise the following delegates:

The Race Director - who will chair the meetings

The Technical Director

The FIM Medical Officer

The Clerk of the Course

The Delegate appointed by DORNA

The FIM Safety Officer

1.5.2

At any time the duties of the members of the Event Management Committee are:

- a) To ensure the smooth and efficient running of the event.
- b) To make recommendations to the Race Direction concerning any organisational matter that is in contradiction to the Organiser's protocols or the Regulations.
- c) To report to the FIM MotoGP Stewards Panel any infringements of the Regulations.

1.5.3

The Event Management Committee will meet at any time required during the event, but at least:

- a) Prior to the first practice session.
- b) At the end of each practice day.
- c) At the end of the event.

1.5.4

The quorum for a meeting of the Event Management Committee is three persons.

1.5.5

All of the members have one vote. Decisions are based on a simple majority. In the case of a tie, then the Race Director will exercise a casting vote.

1.5.6

The FIM Stewards may attend the meetings of the Event Management Committee and the Race Director may also invite the participation of Officials or other persons to assist in the meetings. However, FIM Stewards and the invited officials or other persons will have no right of vote.

1.5.7

The duties of the Event Management Committee are:

- a) To receive reports from the various Officials concerning scrutineering, practice and races.
- b) To make recommendations to the Promoter to improve the smooth and efficient running of the event.

1.6 Race Direction

1.6.1

The Race Direction will comprise the following persons

- The FIM Representative
- The DORNA Representative
- The IRTA Representative (who is the Race Director)

These persons can perform other functions during the event.

1.6.2

The quorum for a meeting of the Race Direction is two persons.

1.6.3

Each member has one vote. Decisions are based on a simple majority.

1.6.4

The Race Direction will meet at any time required during the event.

1.6.5

The duties of the Race Direction are:

- a) To take decisions as provided in the Regulations.
- b) To oversee operational matters to ensure the safe, efficient, and timely running of the event according to the FIM World Championship Grand Prix Regulations.

- c) To make changes in the conduct and/or format of a race and/or a practice session based on safety considerations, provided that such decision is absolutely necessary to resolve a situation not foreseen in the FIM World Championship Grand Prix Regulations. In such exceptional cases, such decision may prevail over specific provisions of the FIM World Championship Grand Prix Regulations.
- d) Provided that it is absolutely necessary to resolve a situation not foreseen in the Regulations, the Race Direction may issue pre-race instructions or clarifications and in specific cases even create pre-race regulations (e.g. to take into account the local conditions at a particular circuit). However, such actions may only be taken within the limits set out by the FIM World Championship Grand Prix Regulations.

1.7 The FIM MotoGP Stewards Panel

1.7.1

There will be a panel comprised of three persons holders of an FIM GP Superlicence; Two FIM Stewards will be nominated by the FIM, the third one will be nominated by IRTA, who will be a permanent member and the Chairman.

Each FIM Steward may be a permanent appointment, or appointed by rota, and approved by the Permanent Bureau.

1.7.2

The quorum for a meeting of the FIM MotoGP Stewards Panel is two persons.

1.7.3

Each member has one vote. Decisions are based on a simple majority. In the case of a tie, the Chairman will exercise a casting vote.

1.7.4

The FIM Stewards have no executive role in the running of the events, except for the imposition of penalties and the adjudication of protests as per Art. 1.7.6.

1.7.5

The FIM MotoGP Stewards Panel will meet at any time required during the event.

1.7.6

The FIM MotoGP Stewards Panel is responsible for:

- a) Taking decisions as provided in the Regulations.
- b) Imposing penalties for any infringements of the Regulations.
- c) Adjudicating on any protest relating to infringements of the Regulations.

1.7.7

All decisions of the FIM MotoGP Stewards Panel must be communicated in writing to the Race Direction and all affected parties.

1.8 The Calendar

1.8.1

The calendar of races counting for the Championships will be, in principle, published by no later than 31st October of the preceding year.

1.8.2

The season is defined as starting on the day after the final race of the year, and finishing on the day of the final race of the following year.

1.8.3

The date of an event may be rescheduled due to force majeure, in consultation with FIM, Dorna and the Promoter, under the powers of Race Direction detailed in Art. 1.6.5.c).

1.9 Classes

1.9.1

Classes will be for the following categories:

Moto3	250cc 4 stroke, single cylinder
Moto2	Moto2 - official engine
MotoGP	1000cc 4 stroke, maximum 4 cylinders

1.9.2

Technical Regulations governing the three classes are provided in the FIM Grand Prix Technical Rules for the FIM Championship.

1.10 Eligible Competitors

1.10.1

In order to compete in the Championship, riders must be officially entered by a member team of IRTA (with the exception of wild card riders, see Art. 1.11.5/6).

The rider must be in possession of an “FIM Grand Prix Licence” issued by a FMN. Riders are designated by IRTA/Grand Prix Commission. Licences can, in certain circumstances, be for a single event.

FIM does not oblige a GP rider to be in possession of a national licence. However, a mandatory application for a national licence through the concerned FMN is reserved (depending inter alia on the National Legislation applicable). Should it be the case it will be at no additional cost to the rider.

The constructors must be in possession of the appropriate “FIM Manufacturer Licence”.

1.10.1.1 Minimum age

Licences for riders are issued only when the minimum age has been attained as below:

- Moto3: 16 years
- Moto2: 16 years
- MotoGP: 18 years

The limit for the minimum age starts on the date of the rider's birthday.

In the Moto3 class, an exemption applies to the winner of the FIM Junior Moto3 Championship or the Red Bull Rookies Cup to compete in the Moto3 class of the FIM World Championship Grand Prix, even if the rider has not reached the minimum age for the class (however a minimum age of 15 years will apply).

1.10.1.2 Maximum age MotoGP

For the MotoGP contracted riders, the limit for the maximum age finishes at the end of the year in which the rider reaches the age of 50.

1.10.1.3 Maximum age Moto2

For the Moto2 riders, the limit for the maximum age finishes at the end of the year in which the rider reaches the age of 50.

1.10.1.4 Maximum age Moto3

The maximum age is 28 years (25 years for new contracted riders participating in the Moto3 Grand Prix for the first time and for wild cards) at the 1st of January of the corresponding Championship year.

1.10.2 Definition of a Rookie Rider

To be classified as a Rookie, a rider must not have competed in six or more events, in the same class, in any one previous season.

1.11 Entries

1.11.1

Teams must submit their proposed entries to the Secretariat of IRTA by the absolute deadline of the last event of the preceding season. Each application must indicate the riders designated and the class in which they will participate.

The Selection Committee, comprising delegates of FIM, Dorna and IRTA will select the teams and riders accepted for participation in the following season which commences on the day after the last event of the preceding season. Once accepted for participation each team and its contracted riders are subject to the testing restrictions that apply in each class.

1.11.2

Every team accepted for participation is required to become a member of IRTA and conclude a Participation Agreement with IRTA prior to 28 February in the relevant season.

1.11.3

Every accepted team must complete an entry form in respect of each rider and submit this to the Secretariat of IRTA by 28 February of the relevant season.

Except when special dispensation is granted each entry commits the team to designate a rider to compete in all the events of the Championship in the chosen class. Exceptions can only be made as follows:

- i) A team may withdraw a rider from an event which has already started, due to injury of the rider, irreparable damage to the motorcycle(s) or in case of “Force Majeure” including rider changes in consultation with the Selection Committee. A withdrawal for medical reasons must be supported by a letter from the Chief Medical Officer of the meeting or the Medical Director.

The team may choose to substitute another rider for the withdrawn rider, with the deadline for substitution of the entered rider being two hours after the end of the Free Practice 2 session for that class, except in the MotoGP class when the limit is 2 hours before the qualifying practice.

A substitute rider may not be a rider currently contracted in the Championship, unless approved by the Grand Prix Commission to avoid that such substitution may be motivated by reasons other than sporting or medical (circumventing engine allocation rules, etc.). If approved, the team from which the substitute rider is taken must fulfil their current entry obligations.

Substitute riders are subject to approval by the Selection Committee.

- ii) A team may withdraw a rider from additional events in the Championship only for medical reasons or other reasons of “Force Majeure” including rider changes in consultation with the Selection Committee. Withdrawals for medical reasons must be supported by a letter from a qualified Doctor and are subject to verification by another medical practitioner appointed by IRTA at its own expense. DORNA shall then have the right to require an additional examination and verification by at least two other medical practitioners appointed by DORNA for that purpose. In the event that the medical practitioners appointed by DORNA do not support the opinion of the medical practitioner appointed by IRTA, the following shall apply:
 - a) the opinion of the medical practitioners appointed by DORNA shall be deemed to prevail;
and
 - b) IRTA shall pay all costs incurred in the examination and reporting by the medical practitioners appointed by DORNA.

Teams must make every reasonable effort to provide a qualified substitute rider to fulfil their entry obligations within 10 days of withdrawal. However the deadline for substitution or replacement of the entered rider is two hours after the end of the Free Practice 2 session for that class, except in the MotoGP class when the limit is 2 hours before the qualifying practice.

A substitute rider may not be a rider currently contracted in the Championship, unless approved by the Grand Prix Commission to avoid that such substitution may be motivated by reasons other than sporting or medical (circumventing engine allocation rules, etc.). If approved, the team from which the substitute rider is taken must fulfill their current entry obligations.

Substitute riders are subject to approval by the Selection Committee.

- iii) For reasons not being medical reasons and not being reasons of “Force Majeure”, and subject to the Team obtaining the approval of IRTA and then subject to IRTA obtaining the approval of DORNA/FIM (neither of whom shall be obliged to give reasons for any refusal to approve), a Team may replace a rider which that Team has entered in the Championship with another rider (“replacement rider”) for remaining rounds of the Championship.

A replacement rider may not be a rider currently contracted in the Championship, unless approved by the Grand Prix Commission to avoid that such substitution may be motivated by reasons other than sporting or medical (circumventing engine allocation rules, etc.). If approved, the team from which the replacement rider is taken must fulfill their current entry obligations.

Replacement riders are subject to approval by the Selection Committee.

Only one replacement of a rider will be permitted per season. Exceptional circumstances will be examined by IRTA and DORNA/FIM.

If a team is unable to provide a substitute rider, then IRTA may decide to allow another team to enter a rider, on an event by event basis, to reach the required number of entries. Article 1.10.1 will apply to all replacement and substitute riders.

1.11.4

Every rider accepted for participation must comply with the requirements to participate in certain promotional activities as defined in the Participation Agreement with IRTA:

- a) Riders must, if requested by Dorna, attend any pre-Event press conference on the Thursday afternoon prior to the Event subject to reasonable prior notice from Dorna. Both the current leader and the winner in the preceding race will be required to attend the pre-Event press conference. The rest of the riders and members of the Teams Management are the decision of Dorna depending on their results.

- b) Riders must comply in full with the podium procedures as designated in the Grand Prix Regulations.
- c) Riders must make themselves available for such promotional activities as may reasonably be designated by Dorna and, subject to 30 days notice, on the Wednesday or Thursday prior to each Event, for a period of three hours i.e. between 1300 hours and 1600 hours. Each Rider may be required to undertake a maximum of two promotional activities during each season.
- d) All riders must make themselves available, (subject to any prior professional commitments provided that reasonable evidence of the same is provided), for promotional purposes, subject to sixty days prior notice, at times and places unconnected with any particular Event. No rider will be required to participate in more than two activities per calendar year or to take part in such activities for an aggregate period in excess of three hours (excluding travel time). Dorna will reimburse all reasonable business class travel expenses and other reasonable out of pocket expenses.
- e) Riders must, when requested and unless given specific dispensation by IRTA or Dorna, participate in a maximum of one of any autograph signing sessions included in the schedule of events. Riders must attend the signing session for a minimum of 20 minutes.
- f) Riders must, when requested and unless given specific dispensation by IRTA or Dorna, take part in a parade lap in open cars included in the schedule of events.
- g) All of the riders must be aware of the utmost importance of full compliance with the designated procedures for promotional activities, press conferences, podium ceremonies and prize giving ceremonies and be fully aware that sanctions for non-compliance include financial sanctions and the imposition of other penalties laid down in the Grand Prix Regulations.
- h) Riders may be granted permission by Dorna or IRTA to not attend any particular promotional activity only due to injury or the requirement to be receiving medical attention at a time that coincides with such promotional activity. Requests for non-participation must be submitted to Dorna or IRTA in writing.

1.11.4.1 Public Pronouncements by Teams and Riders

- a) Teams and Riders must avoid any public declaration or press release which could damage or negatively affect the MotoGP World Championship. Accordingly, it is an obligation for all Riders, Teams and Teams' directors and/or personnel and/or representative thereof, to refrain from releasing any public pronouncement which may irresponsibly harm the lawful interests of the MotoGP Members or which may be contrary to the integrity of MotoGP or the sport.
- b) Public pronouncements which harm irresponsibly the lawful interest of MotoGP or which are contrary to the integrity of MotoGP or the sport shall include, but not be limited to:
 - public statements or comments to the media that irresponsibly attack, disparage, disrepute or damage the MotoGP™ Members.
 - Public comments that members and Riders of the Team know, or should reasonably know, will irresponsibly harm the reputation, image or best interests of the sport and/or any of the MotoGP Members are expressly covered by this regulation.
 - It is understood that responsible expressions of legitimate disagreement with the MotoGP Members and/or MotoGP policies are not prohibited.

1.11.5 Moto2 and Moto3 wild cards

Moto2 Wild Card entries must be submitted and operated by an existing Moto2 team currently competing in the Championship.

Moto3 Wild Card entries must be submitted and operated by an existing Moto3 team currently competing in the Championship.

In each class there may be a maximum of two wild card entries. Wild cards may be proposed by an FMN, the FIM or Dorna.

Wild card riders must be holders of an FIM “one event Grand Prix” licence issued on behalf of any FMN and entries must be submitted to the FIM, on the official entry form issued by the FIM, at least 45 days before the event.

These entries will be submitted to the Grand Prix Commission who will decide which, if any, of the entries will be accepted.

No wild card entry will be granted to a rider who has ridden in the event as a wild card on 3 previous occasions in the same class. (For the purpose of this regulation the Moto3 class is considered as being the same as the 125cc class and the Moto2 class is considered as being the same as the 250cc class).

Accepted entries will be required to pay to IRTA a fee to cover the costs of materials provided for their participation **and for the FIM one event/wild card licence.**

For **2021** the fee will be:

13,372 Euros for a Moto2 entry,

3,872 Euros for a Moto3 entry.

If after acceptance and payment a rider withdraws their entry, only 50% of the IRTA fee will be refundable. A full refund may be applied in the following cases:

- a) the withdrawal is solely and verifiably due to rider injury,
- b) the withdrawal is due to the rider being taken as a substitute rider for a contracted team for that event,
- c) the FIM via their local Federation appoints another rider to take over the accepted wild card entry.

No financial compensation or reimbursement of expenses will be paid to wild card riders.

Wild card entries are covered by the IRTA insurance policy.

When a wild card licence is confirmed and issued, the cost of this licence will not be reimbursed to the rider who withdraws its participation to the race.

1.11.6 MotoGP wild cards

There may be a maximum of two MotoGP wild card entries per event.

Wild cards may be proposed by an FMN, the FIM, the MSMA or Dorna.

Wild card riders must be holders of an FIM “one event Grand Prix” licence issued on behalf of any FMN.

Applications may be submitted to the FIM, on the official entry form issued by the FIM, at least 90 days before the event.

Entries, as received by the FIM, will be submitted to the Grand Prix Commission who will decide which, if any, of the entries will be accepted.

An exception is made for the 2021 San Marino GP to permit three entries.

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Accepted entries may be required to pay to IRTA a fee to cover the costs of tyres provided by the official supplier for their use at the event. If after acceptance and payment a rider withdraws their entry, only 50% of the IRTA fee will be refundable. A full refund may be applied in the following cases:

- a) the withdrawal is solely and verifiably due to rider injury,
- b) the withdrawal is due to the rider being taken as a substitute rider for a contracted team for that event,
- c) another rider is appointed to take over the accepted wild card entry.

No financial compensation or reimbursement of expenses will be paid to wild card riders.

Wild card entries are covered by the IRTA insurance policy.

When a wild card licence is confirmed and issued, the cost of this licence will not be reimbursed to the rider who withdraws its participation to the race.

1.11.7

A compulsory briefing will be held for all the riders who will be participating for the first time in the current Championship, at 17:00 hrs on the day preceding the day scheduled for the first practice session.

Failure to attend the briefing in full may result in a penalty.

A waiver can be granted to a rider by the Race Direction.

1.11.8

A rider competing in any class of the FIM World Championship Grand Prix at a MotoGP event is not permitted to participate in any other non-Grand Prix class practices or races at the same event.

1.11.9

A rider shall be deemed to have taken part in the event when he participates in, at least, one practice session.

A rider shall be deemed to have started a race when he participates in, at least, the first lap of the race.

1.11.10 MotoGP Class Manufacturers

In the MotoGP class, Motorcycle Manufacturers are permitted to participate with a maximum of two entries in their own team. Those Manufacturers may also lease motorcycles and equipment to Independent teams.

Each Manufacturer is permitted a maximum of 3 Wild Card entries per season, with the exception of Manufacturers qualifying for Concessions (Art. 2.4.2), who will be permitted a maximum of 6 Wild Card entries per season.

A Manufacturer is not permitted to have Wild Card entries at consecutive events, with the exception of Manufacturers qualifying for Concessions, who may have entries at consecutive events.

(Refer also to Art. 2.4.6 regarding Technical regulations for Wild Cards)

1.11.11 Moto3 Class Manufacturers

- In the Moto3 class, Manufacturers intending to participate must announce to the Grand Prix Commission by the deadline of 31 August that they will offer to supply Moto3 machines for the following season. By the same date manufacturers must publish their offer to prospective teams together with a parts price list. No manufacturers or “brands” will be accepted for participation in the following season after that deadline.
- Interested teams must confirm their requests for machines to the manufacturers by the deadline of 15 September. Manufacturers must then confirm the team orders by the deadline of 30 September, respecting the minimum supply numbers (refer to Art. 2.6.3.2.22). Details of accepted orders will be sent to IRTA who will inform the Grand Prix Commission. Teams who have placed orders that were not accepted can then negotiate with other manufacturers.
- Refer to Articles 2.6.3 and 2.6.4 for Moto3 engine and chassis approval, supply and price regulations.

1.12 Starting Numbers

1.12.1

Each rider accepted for the Championship will be allocated a specific starting number which will be valid for the whole Championship.

1.13 Schedule

1.13.1

The provisional event schedule will be as follows:

WEDNESDAY: Arrival and setting up of Teams

THURSDAY: Arrival and setting up of Teams

10:00 - 17:00 Technical and Sporting Checks
and other formalities

FRIDAY			
09:00-09:40	40 min.	Moto3™	Free Practice 1 timed for Qualifying
09:55-10:40	45 min.	MotoGP™	Free Practice 1 timed for Qualifying
10:55-11:35	40 min.	Moto2™	Free Practice 1 timed for Qualifying
13:15-13:55	40 min.	Moto3™	Free Practice 2 timed for Qualifying
14:10-14:55	45 min.	MotoGP™	Free Practice 2 timed for Qualifying
15:10-15:50	40 min.	Moto2™	Free Practice 2 timed for Qualifying
SATURDAY			
09:00-09:40	40 min.	Moto3™	Free Practice 3 timed for Qualifying
09:55-10:40	45 min.	MotoGP™	Free Practice 3 timed for Qualifying
10:55-11:35	40 min.	Moto2™	Free Practice 3 timed for Qualifying
12:35-12:50	15 min.	Moto3™	Qualifying 1
13:00-13:15	15 min.	Moto3™	Qualifying 2
13:30-14:00	30 min.	MotoGP™	Free Practice 4 not timed for Qualifying
14:10-14:25	15 min.	MotoGP™	Qualifying 1
14:35-14:50	15 min.	MotoGP™	Qualifying 2
15:05-15:20	15 min.	Moto2™	Qualifying 1
15:30-15:45	15 min.	Moto2™	Qualifying 2
SUNDAY			
08:40-09:00	20 min.	Moto3™	Warm Up
09:10-09:30	20 min.	Moto2™	Warm Up
09:40-10:00	20 min.	MotoGP™	Warm Up
11:00		Moto3™	Race
12:20		Moto2™	Race
14:00		MotoGP™	Race

1.13.2

The above schedule including the date of the event, can only be varied as follows:

- i) Prior to the event by Dorna;
- ii) During the event by the Race Direction.

1.13.3

The schedule may include an allotted time for riders and teams to make track laps by bicycle or on foot, scooters are forbidden. All traffic at this time must be in the circuit direction.

1.14 Technical Control - Medical Control - Doping Control

1.14.1

Teams in the MotoGP class may present a maximum of two motorcycles per rider for Technical Control which will be carried out according the published schedule, prior to the first practice.

In the Moto2 and Moto3 classes, teams may present only one motorcycle per rider for Technical Control.

Unless a waiver is granted by the Race Direction, teams who do not comply with the schedule for technical or medical controls will not be allowed to take part in the event.

1.14.2

The procedure for Technical Control is described in the Technical Regulations, Articles 2.x.5.2, 2.x.5.3, and 2.x.5.4. The procedure for Medical Control is described in the Medical Code.

1.14.3

All articles regarding anti-doping procedures are mentioned in the FIM Anti-Doping Code.

1.15 Practice & Testing

1.15.1 Practice and Testing Restrictions

- a) For all classes the season is defined as starting on the day after the final race of the year, and finishing on the day of the final race of the following year.

A Grand Prix “Event” is defined as starting at the scheduled time for Technical and Sporting checks (Art. 1.2.1), usually a Thursday. This time and date is used when determining 14 days before an Event in regard to testing restrictions.

- b) A contracted rider is defined as a rider designated by the team according Article 1.11.1.
- c) Rider Training and Track Familiarisation is permitted at any time at any circuit under the following conditions:
- i) Such on-track activity is not permitted within the 14 days before a GP event at a circuit unless authorised by Race Direction.
 - ii) For motorcycles of the same capacity class as the rider is entered in, only standard production road-homologated motorcycles may be used.

For safety it is permitted to make the following changes, which must be notified to the Technical Director in advance:

- Wheels
- Brake calipers, master cylinders, lines and discs (carbon discs are not permitted)
- Front and rear suspension
- Removal of existing parts (eg. mirrors, lights, etc.)
- Tyres (commercially available tyres as approved by the Technical Director, NB. current specification of championship tyres are not permitted)
- Footrests, handlebars and control levers

- Exhaust
- Replica Bodywork in a different material is permitted, but the design must be identical to the original (except for blanking areas for removed lights, etc.)

NB. Motorcycles of non-roadracing disciplines (eg. Motocross, Enduro, SuperMoto) and roadracing machines of a different capacity class, as approved by the Technical Director, may be used without restriction (note that here, “capacity class” refers to racing class designation not just the cubic capacity, and the Technical Director will be the sole judge of eligibility of machines to be used). **According to Art. 1.15.1.2.B.d) the use of a roadracing machine from a different class may be counted as a test day for the team supplying that machine.**

Race Direction may grant an exemption for specific events using race machines of the same capacity class the rider is entered in. Such authorisation must be requested in advance.

- iii) In the Moto2 class, when track familiarisation takes place on a Grand Prix circuit then the road-homologated motorcycle may not be the same brand and within 100cc of the same engine capacity as the current Moto2 official engine supplier (or an announced future supplier). That is, if the motorcycle is the same brand as the official Moto2 engine supplier, it must be of a different engine capacity by 100cc or more to the official Moto2 engine.
 - iv) In the Moto3 class, when track familiarisation takes place on a Grand Prix circuit then the road-homologated motorcycle may not be the same brand and within 50cc of the same engine capacity as the rider’s current Moto3 machine. That is, if the motorcycle is the same brand as the rider’s current Moto3 machine, it must be of a different engine capacity by 50cc or more.
 - v) In case of dispute regarding machine eligibility the decision of the Technical Director will be final.
- d) Wild Card riders and substitute/replacement riders are not subject to any testing restrictions (with the exception that they cannot participate in non-Grand Prix class practices or races at the same event where he has been accepted as a Wild Card (refer Art. 1.11.8).

1.15.1.1 **MotoGP Class**

For the purposes of this regulation separate test teams of manufacturers (includes complete motorcycle Manufacturers and chassis Manufacturers) involved in the Championship are considered as part of the contracted team.

Teams may substitute their contracted rider at a test, provided that the maximum number of test days is respected, and that the substitute takes the place of the contracted rider, ie. both cannot be on track at the same time. Such substitute riders must be approved the Selection Committee.

Practice and testing by contracted teams using MotoGP class machines is permitted as follows:

A. Contracted Riders

- a) Practice included in the schedule of the events.
- b) One 3-Day official test in February, after the winter test ban period.
- c) One 3-Day official test at the circuit of the first event of the season, approximately 2 weeks before the event at that circuit.
- d) Two 1-Day official tests on Mondays after a GP event, at circuits to be agreed by the teams and Dorna/IRTA.
- e) One 2-day joint private test at one circuit in Europe during the season, the circuit and date to be agreed by the teams and Dorna/IRTA.
- f) Any activity authorised by the Race Direction.
- g) Teams using machines from manufacturers who qualify for Concessions (refer to Art. 2.4.2) are permitted to test with their contracted riders (except during the test ban periods, refer to Art. 1.15.1.1.A.h) below) or with test riders at any circuit during the season, using only the team's Test Tyre Allocation (refer to Art. 1.15.1.1.C, below). The amount of testing is limited only by the Test Tyre Allocation.

Test dates and riders participating must be informed to Race Direction prior to the proposed test, which may not be within 14 days before a GP event held at that circuit.

- h) No testing is permitted by contracted riders between 1 December and 31 January (Winter Test Ban) and between **28 June 2021** and **3 August 2021** (Summer Break), in both cases dates being inclusive (note that the exact dates of the Summer Break may be updated in line with calendar changes).

Clarification 4 June 2021

- i) Race Direction in consultation with the Technical Director may grant an exemption for testing and racing a “road-racing” machine for a specific non-GP event. Such authorisation must be requested in advance, together with details of the machine(s) to be used, for the Technical Director’s approval. If granted, the exemption will be for the specific machine(s) and/or circuit(s) involved and any other conditions as defined by Race Direction.
- j) MotoGP class Rookie riders are permitted to participate in the 3-day “shakedown” test for Factory test riders, held immediately prior to the first official test in February (ref. Art. 1.15.1.1.B.c) below).

B. Test Riders

Test riders are permitted only for Motorcycle Manufacturers with their own factory team, and for teams using machines from Manufacturers who qualify for Concessions (Art. 2.4.2).

If a Manufacturer does not have an entry with their own factory team, they must nominate one of their customer teams as their factory team for the purposes of testing with test riders for that season.

Each Manufacturer may nominate up to 3 current Grand Prix circuits, being the only GP circuits at which their test teams may test. There are no restrictions on testing at non-GP circuits.

- a) Test riders can participate in any of the tests described in 1.15.1.1.A, above, except for practice included in the schedule of an event.
- b) Test riders may test at any circuit, at any time, using only their nominated factory team’s Test Tyre Allocation. Tests are not permitted within the 14 days before a GP event at a circuit unless authorised by Race Direction.
- c) Test riders may conduct “shakedown” testing in the 3 days immediately prior to the first official test taking place after the winter test ban period. Such tests are exempt from the regulation specifying 3 nominated circuits for testing.

C. Test Tyre Allocation

Machine development is limited by the Test Tyre Allocation. The allocation is not transferable between teams or manufacturers and is supplied solely by the official tyre supplier, as follows:

All Factory Teams: 120 tyres per contracted rider per season. These tyres may be used by a test rider, or the team's contracted riders only subject to 1.15.1.1.A.g) and j) and 1.15.1.1.B, above.

All non-Factory Teams: 120 tyres per contracted rider per season. These tyres are for the sole use of the team's contracted riders only subject to 1.15.1.1.A.g) and j) and 1.15.1.1.B, above.

Test tyres will be of the same specification as those already allocated during previous Official tests or races, or those appearing in the allocation list provided by the tyre supplier before the beginning of the season. New tyre specifications may be provided for testing but these will not be included in a race allocation until they have been tested during an Official test.

Tyres for contracted riders at Official Tests will be subject to supply requirements of Art. 2.4.4.9.9. A), B), C) and will not be counted as part of the Test Tyre Allocation.

1.15.1.2 Moto2 and Moto3 Classes

i) Manufacturer Testing Moto3 Class

For the purposes of this regulation, test teams of Manufacturers (includes complete motorcycle Manufacturers and chassis Manufacturers) involved in the Championship are not considered to be contracted teams. However they may use contracted riders for testing under the conditions of clause e) below (any test days will be counted as part of the rider's allowance of **7** days).

ii) Manufacturer Testing Moto2 Class

For the purposes of this regulation, test teams of Moto2 chassis Manufacturers involved in the Championship are not considered to be contracted teams. These manufacturers may make private tests with test riders only (not contracted riders) for a maximum of **2** days during the **2021** season.

Grand Prix Commission 10 May 2021

A. Contracted Riders Moto2 and Moto3 Classes

Practice and testing by contracted riders, is permitted as follows:

- a) Practice included in the schedule of the events.
- b) **One 3-Day official tests organised by Dorna/IRTA, between 1 February and the first event of the season, using only contracted riders.**
- c) Any activity authorised by the Race Direction.
- d) Teams may test with contracted riders at any circuit in Europe or at a circuit in the country where the team is based for a maximum total of **7 days per rider during the season (except during the test ban periods, refer to Art. 1.15.1.2.e) below). This includes participation in practice or race sessions at an event of another series, using the same class of motorcycle for which the rider is contracted.**

Test dates and riders participating must be informed to Race Direction prior to the proposed test, which may not be within 14 days before a GP event held at that circuit.

Testing is deemed to have taken place when the rider has entered the track.

Any replacement or substitute rider is deemed to be the original rider for the purposes of counting test days, so test days accumulate for both rider and team (that is, a team cannot have more test days by changing riders and a contracted rider cannot have more test days by changing teams).

Teams may substitute their contracted rider at a test, provided that the maximum number of test days is respected, and that the substitute takes the place of the contracted rider, ie. both cannot be on track at the same time. Such substitute riders must be approved the Selection Committee.

Replacement or substitute riders who already have a contract in place to participate in another race series, may be permitted to continue to fulfil this existing contract, subject to the approval of the Selection Committee. In this case track activity only as part of a race event for the contracted series will not count as rider test days for the GP class, and may take place within 14 days of a GP event at the same circuit.

- e) No testing is permitted by contracted teams or contracted riders between 1 December and 31 January (Winter Test Ban) and between **28 June 2021** and **3 August 2021** (Summer Break), in both cases dates being inclusive (note that the exact dates of the Summer Break may be updated in line with calendar changes).

Clarification 4 June 2021

- f) Contracted riders who are in their first season of participation in the World Championship may compete in other events held in Europe, or in the country of the rider's nationality, during that season. **This track activity as part of a race event will not count as rider test days for the GP class, and may take place within 14 days of a GP event at the same circuit.**

To be considered as “contracted rider in his first season of participation, such rider must not have participated in six or more events, in any class, in any previous season.

- g) Race Direction in consultation with the Technical Director may grant an exemption for testing and racing a “road-racing” machine for a specific non-GP event. Such authorisation must be requested in advance, together with details of the machine(s) to be used, for the Technical Director's approval. If granted, the exemption will be for the specific machine(s) and/or circuit(s) involved and any other conditions as defined by Race Direction.

1.15.2 Practice Sessions at Grand Prix Events (including Warm Up)

- i) Riders will commence practice from the pit lane when the green light is displayed at the exit of the pit lane.
- ii) The duration of practice will commence from the illumination of the green light. A count-down will be shown on the official Timekeeping monitors to indicate the minutes of practice remaining.
- iii) The end of practice will be indicated by the waving of a chequered flag at which time the pit exit will be closed. A rider's time will continue to be recorded until he passes the finish line after the allotted time has elapsed. After the chequered flag, riders complete one additional lap prior to entering the pits.

- iv) If practice is interrupted due to an incident or any other reason, then a red flag will be waved at the start line and at all marshals posts. All riders must return slowly to the pit lane. When practice is restarted, the time remaining will be that shown on the monitors of the official timekeepers at the moment the red flags were waved, unless otherwise adjusted by Race Direction.
- v) After practice has started, it is not permitted for any person to alter the condition of the racing surface of the circuit. This includes track Marshals and other Officials, who cannot clean the track surface without prior instructions and/or authorisation from the Race Director and/or the FIM Safety Officer.

1.15.3 Motorcycles

In the MotoGP class, a rider may practice on two motorcycles providing that all such motorcycles have been scrutineered in the name of his/her team.

In the Moto2 and Moto3 classes a rider may practice on the one motorcycle that has been scrutineered in the name of his/her team. Moto2 and Moto3 class rider may change to another motorcycle only in the case of irreparable damage to the principal machine, and only with the permission of the Technical Director who will authorize the issue of a new scrutineering sticker to identify the new machine. The process of authorizing a new machine is not possible during a practice session or after the pit lane closes for the sighting lap of the race.

1.15.4 Lap time

All laps of the riders will be timed.

Official circuit records will be recognised as the following:

- All Time Lap Record - the fastest lap time in history, including all sessions at a race event.
- Best Race Lap - the fastest lap time in history recorded during a race.

For both practice and race, the lap time is the subtraction of the time between two consecutive crossings of the plane of the finish line indicated by the line painted on the track.

1.15.5 Qualification for the Race

A. Moto2 and Moto3

- i) Riders are automatically qualified for the race if they are qualified to participate in Qualifying Practice QP1 or QP2 (refer to Art. 1.16.3).
- ii) To participate in qualifying practice a rider must achieve a lap time at least equal to 107% of the time recorded by the fastest rider in the same session, in any one of the three Free Practice sessions (FP1, FP2, FP3).
- iii) Substitute riders, replacing a rider after the event has started, are subject to the above conditions if they have participated in two of the first three Free Practice sessions.
- iv) If a substitute rider only participates from FP3 onwards and does not achieve a lap time of 107% of the fastest rider in the same session of FP3, that rider may participate in QP1, where he/she must achieve a lap time of at least 107% of the fastest rider in QP1 to be allowed to start the race (unless QP1 is cancelled in which case the rider may start the race).

B. MotoGP Class

- i) Riders are automatically qualified for the race if they are qualified to participate in Qualifying Practice QP1 or QP2 (refer to Art. 1.16.3).
- ii) To participate in qualifying practice a rider must achieve a lap time at least equal to 107% of the time recorded by the fastest rider in the same session, in any one of the four Free Practice sessions (FP1, FP2, FP3, FP4).
- iii) Substitute riders, replacing a rider after the event has started, are subject to the above conditions if they have participated in two of the first three Free Practice sessions.
- iv) If a substitute rider only participates from FP3 onwards and does not achieve a lap time of 107% of the fastest rider in the same session of either FP3 or FP4, that rider may participate in QP1, where he/she must achieve a lap time of at least 107% of the fastest rider in QP1 to be allowed to start the race (unless QP1 is cancelled in which case the rider may start the race).

1.16 Grid Positions

1.16.1

The pole position, allocated to the fastest rider, will be determined during the homologation of the circuit.

1.16.2

For all classes, the Grid will be arranged in the “in echelon” 3-3-3-3 configuration.

Each line will be offset.

There will be a distance of 9 metres between each row.

1.16.3

A. Moto2 and Moto3

- i) Grid positions will be determined by the fastest lap time recorded by each rider in the Free Practice (FP) sessions and two Qualifying (QP) sessions as follows:
- ii) Based on combined practice times, the 14 fastest riders in FP1, FP2, and FP3 go through to QP2.

The combined results of the FP1, FP2, FP3 sessions, and therefore the participants for QP1, will be finalised 60 minutes after the end of the FP3 session for that class. After this time the results are final and are not subject to protest or appeal and will not be revised for any infringements discovered by or reported to the FIM MotoGP Stewards after this time.

Grand Prix Commission 4 June 2021

- iii) All other riders take part in QP1, provided they are qualified according to Art. 1.15.5.A. The fastest 4 riders from QP1 progress to QP2.

The results of the QP1 session, and therefore the participants for QP2, will be finalised 5 minutes after the end of the QP1 session for that class. After this time the results are final and are not subject to protest or appeal and will not be revised for any infringements discovered by or reported to the FIM MotoGP Stewards after this time.

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- iv) The 18 riders in QP2 will take the first 18 grid positions according to their fastest lap time in QP2.

If a rider does not record a lap time in QP2 he/she will start from 18th grid position. In the case of more than one rider not recording a QP2 time, their grid positions from 18 upwards will be determined by their combined lap times of FP1, FP2 and FP3.

- v) The riders not in the first 4 positions of QP1 will take grid positions 19 and onwards according to their fastest lap time in QP1.

If any qualified riders do not record a lap time in QP1 they will start from the back of the grid, in order of their combined times from FP1, FP2, and FP3.

- vi) In the case where QP1 or QP2 or both are cancelled, the grid positions will be determined by the combined fastest lap times recorded by the riders of the affected group, in FP1, FP2 and FP3.

In the case of only QP1 being cancelled, then the 15th, 16th, 17th and 18th fastest riders from FP1, FP2 and FP3 combined will go through to QP2.

- vii) In the case of a rider qualifying for QP2 and subsequently withdrawing from the event, the list of riders to take part in QP2 will be revised **no later than 60 minutes** after FP3, with the next fastest rider from the FP1, FP2 and FP3 sessions taking the place of the withdrawn rider.

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B. MotoGP Class

- i) Grid positions will be determined by the fastest lap time recorded by each rider in the Free Practice (FP) sessions and two Qualifying (QP) sessions as follows:
- ii) Based on combined practice times, the ten fastest riders in FP1, FP2, and FP3 go through to QP2.

The combined results of the FP1, FP2, FP3 sessions, and therefore the participants for QP1, will be finalised 60 minutes after the end of the FP3 session for that class. After this time the results are final and are not subject to protest or appeal and will not be revised for any infringements discovered by or reported to the FIM MotoGP Stewards after this time.

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- iii) All other riders take part in QP1, provided they are qualified according to Art. 1.15.5.B. The fastest two riders from QP1 progress to QP2.

The results of the QP1 session, and therefore the participants for QP2, will be finalised 5 minutes after the end of the QP1 session for that class. After this time the results are final and are not subject to protest or appeal and will not be revised for any infringements discovered by or reported to the FIM MotoGP Stewards after this time.

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- iv) The twelve riders in QP2 will take the first 12 grid positions according to their fastest lap time in QP2.

If a rider does not record a lap time in QP2 he/she will start from 12th grid position. In the case of more than one rider not recording a QP2 time, their grid positions from 12 upwards will be determined by their combined lap times of FP1, FP2 and FP3.

- v) The riders not in the first two positions of QP1 will take grid positions 13 and onwards according to their fastest lap time in QP1.

If any qualified riders do not record a lap time in QP1 they will start from the back of the grid, in order of their combined times from FP1, FP2, and FP3.

- vi) In the case where QP1 or QP2 or both are cancelled, the grid positions will be determined by the combined fastest lap times recorded by the riders of the affected group, in FP1, FP2 and FP3.

In the case of only QP1 being cancelled, then the 11th and 12th fastest riders from FP1, FP2 and FP3 combined will go through to QP2.

- vii) In the case of a rider qualifying for QP2 and subsequently withdrawing from the event, the list of riders to take part in QP2 will be revised **no later than 60 minutes** after FP3, with the next fastest rider from the FP1, FP2 and FP3 sessions taking the place of the withdrawn rider.

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1.16.4

In the event of a tie, riders' second and subsequent best times will be taken into account.

1.16.5

The final grid will be published after the warm up has been completed, at the latest one hour before the start of the race.

1.16.6

In regard to grid positions and start procedures, "back of the grid" is defined as the grid position immediately after the final rider's qualifying grid position. In the case of multiple back of grid starts riders will take subsequent positions according to the specific rule being invoked.

Race Direction may change the back of the grid definition where necessary due to circuit conditions.

1.16.7

In the case of a rider starting the race from pit lane, when this is known before the final grid is published (eg. due to a penalty), the final grid will show the rider in last position and riders qualifying behind that rider will move up to fill the vacant positions. The rider will make the sighting lap and take last place on the grid, then enter pit lane at the end of the warm up lap, in order to start the race from pit lane.

1.17 Races

1.17.1

The length of races must be determined by the Permanent Bureau after publication of the calendar.

The length of a race may only be varied by the Race Direction.

1.17.2

A visible countdown board will be shown at the finish line to indicate the number of remaining laps in the race.

1.17.3

If the Timekeeping rooms are fed by normal power (electricity) supply, they must also be permanently connected to an U.P.S. (Uninterruptible Power System) and to a generator.

1.18 Standard Start Procedure

1. Only riders who have completed at least one sighting lap will be permitted to start the race from their position published on the final grid. Under no circumstances may they push onto the grid from the pit lane.
2. Approximately 15 Minutes (**25** minutes for MotoGP only, except in the case of a restarted or rescheduled race) before the Start of the Race - Pit lane exit opens for sighting laps.

Green lights on at the pit lane exit.

Count-down boards of 5, 4, 3, 2 and 1 minutes are shown at the pit exit.

Riders may complete more than one sighting lap by passing through the pit lane where they may make adjustments, change tyres, change machines in MotoGP only, or refuel.

3. Approximately 10 Minutes (**20** minutes for MotoGP only, except in the case of a restarted or rescheduled race) before the Start of the Race - Pit lane exit closes.

Red lights on at the pit lane exit.

4. Riders who do not go onto the grid may start the warm up lap from the pit lane under the instructions of a marshal positioned at the pit lane exit.

Riders starting the warm up lap from the pit lane must start the race from the back of the grid, provided that, in the MotoGP class only, weather-related tyre changes are not made after the pit lane exit has closed.

MotoGP riders who make weather-related tyre changes after the pit lane exit has closed will start the warm up lap from pit lane, take their qualifying grid position and serve a ride through penalty within the first **3** laps of the race.

Therefore riders still in pit lane must make a tyre choice (rain or slick) before the pit lane exit has closed. If this choice of type of any tyre (front, rear or both) is changed after the pit lane exit has closed, a ride through penalty will apply.

5. When riders reach the grid after the sighting lap(s) they must stop at the rear of the grid and turn off the engine. The motorcycle will then be pushed at walking pace by a team member to the grid position. The rider may dismount or remain on the motorcycle to be pushed to the grid position.

Riders on the grid may be attended by their mechanics and other staff including one person who may hold an umbrella. All attendants on the grid must wear a “Grid Pass”.

Riders in the MotoGP class only, having taken up their grid position, must take off their helmets, except in the case of a restarted or wet race.

Officials will display panels, at the side of the track, indicating the row of the grid, to assist riders in locating their grid position.

6. The Race Director will, at this stage, declare the race as “wet” or “dry” and will indicate this to the riders on the grid and those who may still be in the pit lane by the display of a board. If no board is displayed the race will automatically be “dry”.

For the MotoGP class the declaration of a Wet Race will be made as early as possible, in principle before the pit lane opens for the sighting lap, to assist the teams in planning.

7. Riders on the grid may at this stage make adjustments to the machine or change tyres to suit the track conditions.

Tyre warmers may be used on the grid.

One generator per machine may be used to power tyre warmers on the grid. The generator must be a compact portable type.

Starter engines may also be used on the grid.

Generator and starter engines should be located at the rear of the motorcycles.

To ensure ease of mobility when clearing the grid, the size and type of grid equipment such as generators, tool trolleys, etc. is subject to the approval of the Technical Director.

All adjustments must be completed by the display of the 3-Minute board. After this board is displayed, riders who still wish to make adjustments must push their machine to the pit lane. Such riders and their machines must be clear of the grid and in the pit lane before the display of the 1-Minute board, where they may continue to make adjustments, or change machine in MotoGP only. Such riders will start the warm up lap from the pit lane and will start the race from the back of the grid, provided that, in the MotoGP class only, weather-related tyre changes are not made.

Such MotoGP riders who make any weather-related tyre change (rain to slick or vice versa, front or rear or both) at this time, compared to their tyres when leaving the grid (if the same machine is used to start the race) or compared to their tyres used on their final exit for the sighting lap (when a different machine is used to start the race), will start the warm up lap from pit lane, take their qualifying grid position and serve a ride through penalty within the first **3** laps of the race.

8. Refuelling or changing fuel tank on the grid is forbidden.
9. 5 minutes before the start of the Warm Up Lap - Display of 5-Minute Board on the grid.
10. 3 minutes before the start of the Warm Up Lap - Display of 3-Minute Board on the grid.

Generators must be disconnected from tyre warmers and removed from the grid as quickly as possible.

At this point, all persons other than two mechanics per rider in the Moto2 and Moto3 classes, and three mechanics per rider in MotoGP, the person holding the umbrella for the rider, the television crew of the host broadcaster and essential officials, must leave the grid.

The MotoGP riders must put their helmets on.

No person (except essential officials) is allowed to go on the grid at this point.

11. 1 minute before the start of the Warm Up Lap - Display of 1-Minute Board on the grid.

Immediate removal of tyre warmers from machines on the grid.

At this point, all team personnel except the mechanics will leave the grid. The mechanics will, as quickly as possible, assist the rider to start the machine and will then vacate the grid.

12. 30 seconds before the start of the Warm Up Lap - Display of 30- Second Board on the grid.

All riders must be in position on the grid with engines running. No further assistance from mechanics is permitted. Any rider who is unable to start his machine must remove it to the pit lane, under the control of the grid marshals, where he may make further attempts to start it, or change machine in MotoGP. Such riders may start the warm up lap from the pit lane and will start the race from the back of the grid, provided that, in the MotoGP class only, weather-related tyre changes are not made.

Such MotoGP riders who make any weather-related tyre change (rain to slick or vice versa, front or rear or both) at this time, compared to their tyres when leaving the grid (if the same machine is used to start the race) or compared to their tyres used on their final exit for the sighting lap (when a different machine is used to start the race), will start the warm up lap from pit lane, take their qualifying grid position and serve a ride through penalty within the first **3** laps of the race.

13. 2 minutes before the start of the Race - Green flag waved to start warm up lap.

Any rider who stalls their engine on the grid or who has other difficulties must signal by raising an arm. Attempting to restart the motorcycle on the grid is not permitted. Under the supervision or assistance of an official the rider and machine will exit the grid to the pit lane as quickly as possible where mechanics may provide assistance. Such riders may start the warm up lap from the pit lane and will start the race from the back of the grid, provided they exit before the pit lane is closed and reach the grid before the Safety Car. If they do not exit before pit lane is closed, they will start the race from pit lane. Team personnel are not permitted to re-enter the grid after it has been cleared, unless instructed to do so by an official.

The riders will make one lap at unrestricted speed, followed by a safety car. The safety car will overtake slow riders.

As soon as the riders have passed the pit lane exit lights, the pit lane exit light will be turned green, and any rider waiting in the pit lane will be permitted to join the warm up lap. 30 seconds later, the light will turn red closing the pit lane exit.

On returning to the grid the riders must take up their positions with the front wheel of their motorcycle up to and behind the front line and between the side lines defining the grid position and keep their engines running. The front tyre must not be touching the track surface outside of the painted lines.

If two or more riders must start from the back of the grid, they will take up position in the order in which they qualified for the race.

An official will stand at the front of the grid holding a red flag motionless.

Any rider who arrives at the pit lane entry point at any time after the safety car must enter the pit lane and start the race from the pit lane exit (therefore a rider who does not make the race start from the grid at the correct time, must make the start from the pit lane exit).

Any rider who encounters a problem with his machine on the warm up lap may return to the pit lane and make repairs, or change machine in MotoGP only.

In the MotoGP class only, if any weather-related tyre change is made after the green flag to start the warm up, the conditions described in 1.18.12 will apply.

Any rider who stalls his engine on the grid or who has other difficulties must remain on the motorcycle and raise an arm. It is not permitted to delay the start by any other means. Attempting to restart the motorcycle on the grid is not permitted. Under the supervision or assistance of an official the rider and machine will exit the grid to the pit lane where mechanics may provide assistance or, in the MotoGP class only, change machine.

As each row of the grid is completed, the officials will lower the panels indicating that their row is complete. Panels will not be lowered when a rider in that row has indicated that he has stalled his motorcycle or has other difficulties. When all panels have been lowered and the safety car has taken up its position, an official at the rear of the grid will wave a green flag.

The Starter will then instruct the official at the front of the grid, displaying the red flag, to walk to the side of the track.

14. A red light will be displayed for between 2 and 5 seconds. The red light will go out to start the race

A safety car will follow behind the motorcycles for the whole of the first lap. The safety car will overtake slow riders.

If the red lights' device is fed by normal power (electricity) supply, it must also be connected to a set of car batteries or to an U.P.S. (Uninterruptible Power System) to provide power to the starting lights' device if the electric line breaks down just at the moment of the start.

Any rider who anticipates the start will be penalised by the FIM MotoGP Stewards. The standard penalty is two Long Lap Penalties as described in Article 1.19.2. The two Long Laps must be completed within 5 laps of the rider receiving notification of the penalty. Other penalties may be imposed.

The motorcycle must be stationary at the time the red lights are turned off. Anticipation of the start is defined by the motorcycle moving forward at the time the red lights are turned off.

In the case of a minor movement and subsequent stop whilst the red lights are on, the designated officials will be the sole judge of whether an advantage has been gained.

If a penalty is imposed for taking advantage by anticipating the start the Race Direction must communicate the penalty to the rider as soon as possible.

15. If, after the start of the race, a rider stalls their machine, officials will assist to push the machine into the pit lane, where his mechanics may provide assistance, or where the rider may change machine in MotoGP only.

Team personnel are not permitted to re-enter the grid after it has been cleared, unless instructed to do so by an official.

16. After the riders have passed the exit of the pit road, the green light at the pit lane exit will be switched on to start any riders still in the pit lane. **A pit lane race start will be made from a stationary position as indicated by the officials. However a rider who is delayed (for example due to machine problems or repairs) and arrives after the pit exit is open will not be required to stop at pit exit before joining the race.**

The exit of the pit road is defined as the point where the pit road joins the circuit, or as defined by Race Direction (refer to Art. 1.21.21).

When more than one rider is starting the race from the pit lane, officials will control their start position and order.

In the interests of safety, when more than 10 riders will start the race from pit lane exit, the start will be delayed and a new start procedure will take place (Quick Start).

If less than 11 riders will start the race from pit lane exit, they will follow the Pit Lane Race Start Protocol:

- Riders arriving at pit lane exit will be directed to line up in painted grid positions in the order that they arrive.
 - After the race start the pit lane exit will open for the riders in pit lane.
 - The use of Launch Control electronics is forbidden when starting the race from pit lane.
 - For riders starting the race from a stationary position, from one of the painted grid positions in pit lane, the pit lane speed limit does not apply.
 - Overtaking is forbidden until the broken white line defining the point where the pit exit road joins the race track.
 - The solid white lines defining the pit exit rejoin lane must be respected, it is forbidden to cross these lines until after the broken white line where the pit exit road joins the race track.
17. Unless the race is interrupted, no further changes of machines are permitted. Except that a rider who has not crossed the start line to start the race, is permitted to change machines up until the leading rider has passed the finish line at the end of his first lap. This change of machine is defined as when the second machine crosses the timing point at the pit exit lights.

After this time, in the MotoGP class only, machine changes are permitted only under the following circumstances:

- If the race has been declared wet, according to Art. 1.20.
- If the White Flags have been displayed indicating that machine changes are permitted, according to Art. 1.22.2.

In both cases, tyre warmers, changing tyres and adjustments are permitted on the machine in the pits and in the pit-lane. There are no restrictions on the type of tyres fitted to either of the machines.

The spare machine may be inside the pit box whether or not it has been used in the race, but any exchange of machine must be made in the pit lane. The rider must enter pit lane with his machine to make the exchange.

All exchanges of machine in pit lane must follow the protocols published by Race Direction, which include:

- The spare machine must be in the position as indicated by Officials prior to the race.
- The machine entering the pits must stop in the position as indicated by Officials prior to the race.
- It is not permitted to ride behind (pit box side) the spare machine of another rider.
- The team is responsible for the safe release of the rider, with one team member whose only role is to check for incoming traffic and release the rider only when it is safe. The rider leaving his machine change position must give way to approaching riders on pit lane who have right of way.
- The team is responsible for ensuring none of their equipment, motorcycles or staff impede the progress of another team or rider in any way.
- A maximum of 5 team staff per rider may assist in the machine change, other team members must remain in the pit box or signalling area.
- The 5 pit lane staff will be identified by compulsory wearing of a helmet, approved by the Technical Director.
- The location of the rider's pit box will be indicated by signs in pit lane and it is forbidden for team members to be positioned in the active part of pit lane to signal the pit box position to the rider.
- It is forbidden for the spare machine to be in gear before the rider changes bikes, only the rider may engage the gear (it is permitted for a team member to hold the clutch lever).

18. Start Delayed

Should there be a problem that might prejudice safety at the start, the Starter will invoke the Start Delayed procedure as follows:

- A red flag is waved from the Starter's rostrum and the red light stays on.
- The "Start Delayed" board is displayed from the Starter's rostrum and a marshal will wave a yellow flag at each row of the starting grid from the signalling platform.
- Riders should stay in their grid position with helmets on, engines may be switched off.
- The machine(s) which caused the Start Delayed procedure will be removed to the pit lane, regardless of what work is needed to restart the machine. If they can be restarted or a spare machine is taken (MotoGP class) the rider may start the warm up lap from pit lane, and will start the race from the back of the grid.
- After display of the Start Delayed board, a maximum of 3 mechanics per rider (MotoGP class) or 2 mechanics per rider (Moto2, Moto3 classes) are allowed on the grid. Only tyre warmers, stands, starter engines and hand-carried tools are allowed, no generators are allowed on the grid.
- Only essential officials are allowed on the grid, no media, guests, umbrella-holders or other team personnel will be permitted, with the exception of camera crew(s) authorised by the Championship Organisers.
- The start procedure will be re-commenced at the 3-Minute board, which the Starter will order to be displayed as soon as possible (normally as soon as all riders on the grid are attended by their team).
- Following the 1-Minute and 30-Second boards the riders will complete an additional warm up lap. The race distance will automatically be reduced by one lap, or more if deemed necessary by Race Direction.

- The conditions regarding weather-related tyre changes in the MotoGP class described in the Standard Start Procedure (1.18. clauses 4, 7, 12, 13, 16) will apply to the Start Delayed procedure.

Any person who, due to his behaviour on the grid is responsible for a “start delayed”, may be further penalised.

19. Rain on Grid

If the pit lane is opened for the sighting lap with the track dry but the track becomes wet during or after the normal sighting lap (i.e. when riders are on the track or on the grid), the Starter may invoke the following procedure.

This procedure does not apply after the start of the warm up lap or after a race has been declared Wet (Art. 1.18.6), riders are free to enter the pit lane after the warm up lap and start the race from there if they wish to make any adjustments. In this case Art. 1.18.16 will apply regarding the number of riders who will start from pit lane exit.

(Note: as climatic conditions and their severity can never be accurately forecast Race Direction may react to specific situations by issuing different instructions. All instructions will be displayed on timekeeping monitors and teams will be informed by IRTA staff.)

1. Moto2 and Moto3 Classes

- The Rain On Grid Procedure board is displayed. This may be before or after the normal five minute countdown has started on the grid, but would normally be after the last bike has arrived at the grid.
- Wheels may be changed and adjustments made only on the grid.
- 5 minutes extra working time is given to change settings, so approximately five minutes after the Rain on Grid Procedure board is displayed, the 5-Minute board is shown and the 5-3-1-30sec countdown is made before the start of the Warm Up lap.
- Team members must leave the grid as usual (refer to Art. 1.18.10), 11), 12) above). I.e. 3-Minute board: adjustments completed, 1-Minute board: tyre warmers removed, 30-Second board: start engines.

- After the green flag the normal warm up lap and start procedure applies, riders make one Warm Up lap as usual and take up their original grid positions.
- Any rider who wishes to make adjustments after the start of the Warm Up lap must enter the pit lane to make adjustments and start the race from there.
- The race distance is reduced to 2/3 of the original distance.

2. MotoGP Class

- The Rain On Grid Procedure board is displayed. This may be before or after the normal five minute countdown has started on the grid, but would normally be after the last bike has arrived at the grid.
- Any rider who does not arrive to the grid from the original sighting lap(s), or the additional sighting lap(s) in a Rain on Grid Procedure must start the warm up lap from the pit lane and will start the race from the back of the grid as per Art. 1.18.4.
- All machines and equipment must be pushed off the grid with wheel changes and adjustments being made in pit lane/**pit box**, or machines changed.
- Machines may be refuelled in pit lane/**pit box**.
- After the grid has been evacuated, a 5-minute countdown will commence to the opening of pit lane for a Quick Start procedure.
- After the countdown is completed the pit lane will be opened for sixty seconds and the procedures for Quick Start will be followed (ref. 1.18.21 below).
- The race distance will be reduced by one lap.
- The conditions regarding weather-related tyre changes described in the Standard Start Procedure (1.18. clauses 4, 7, 12, 13, 16) will apply to the Rain on Grid procedure.

1.18.20 Wet Race Start (following all dry practice)

In case a class has had all practice and warm up sessions dry (as declared by the Race Director), and the race start is declared wet before the opening of pit lane for the sighting lap, the following Wet Race Start procedure will apply.

- The declaration of Wet Race Start will be made as early as possible before the opening of the pit lane and communicated to teams.
- The pit lane will open on time and remain open for 10 minutes (5 minutes longer than normal).
- Riders may make more than one sighting lap, passing through the pit lane.
- Refuelling of any machine and change of machine (MotoGP Class only) is permitted in pit lane/pit box during the sighting laps period.
- The countdown boards at Pit Lane Exit will display 10-Min, 5-Min, 4-Min, 3-Min, 2-Min, 1-Min before the Pit Lane is closed.
- Three minutes (**8 minutes for MotoGP only**) after the close of Pit Lane, the normal warm up lap and start procedure applies, the countdown to the Warm Up lap will be made, 5-Min, 3-Min, 1-Min, 30-Sec.

Therefore the Warm Up lap and Race Start will be 5 minutes delayed for Moto3 and Moto2.

The Warm Up lap and Race Start will be on time for MotoGP (that is, a shorter period on the grid).

- **Race distance for Moto3 and Moto2 is reduced to 2/3 of the original distance.**
- Race distance for **MotoGP** is reduced by one lap.
- The conditions regarding weather-related tyre changes in the MotoGP class described in the Standard Start Procedure (1.18. clauses 4, 7, 12, 13, 16) will apply to the Wet Race Start procedure.

1.18.21 Quick Start Procedure

When a race is stopped, riders must return to the pit lane, unless otherwise instructed by officials. If there is to be a restart, the following procedure will apply:

- Upon arrival in the pit lane, repairs and adjustments may be made to the motorcycle. Refuelling is permitted, and change of machine (MotoGP class only) is permitted.
- When all riders have entered the pit lane the Race Director will announce the time remaining to the re-opening of the pit lane, which will be a minimum of 5 minutes. The time remaining to the opening of the pit exit will be displayed on timing screens and countdown boards.
- When the time period has elapsed, the pit lane exit will be opened for SIXTY SECONDS only. Riders will make one lap at unrestricted speed to the starting grid, followed by a Safety Car. Any rider delaying the progress of the sighting lap will be overtaken by the Safety Car. Any rider arriving behind the Safety Car must go into the pit lane. Such riders will have to start the warm up lap from the pit lane and will start the race from the back of the grid.
- Any riders remaining in the pit lane after it has been closed will have to start the warm up lap from the pit exit and start the race from the back of the grid.
- ONE mechanic only, per rider, may go onto the grid (without tools) to primarily indicate to his rider his position on the grid. In the case that the restarted race involves new grid positions, the mechanic should avail himself of his rider's new grid position from the classification displayed on the timing screen or from officials who will be positioned at the entry point to the grid with the revised starting grid information.
- Riders will arrive back on the starting grid and stop in their grid position, with engines running, no adjustments may be made. Any rider requiring repairs or adjustments on the sighting lap from the pit exit must enter the pit lane.

- As soon as the Safety Car arrives on the back of the grid, a 30-seconds board will be displayed at the front of the grid. At this point the mechanics must immediately leave the grid by the quickest route. The 30 seconds may be reduced at the discretion of the Starter when the grid is cleared and it is considered safe.
- After 30 seconds have elapsed and/or the grid is clear, a green flag will be shown to start the warm up lap.
- The riders will make one warm up lap at unrestricted speed, followed by a Safety Car. When the last rider has passed the pit exit lights it will be opened for a period of 30 seconds to release any rider waiting. After 30 seconds, the pit lane exit will remain closed until after the start of the race. Any rider not able to leave the pit exit whilst it is open will start the race from the pit exit. Any rider delaying the progress of the warm up lap will be overtaken by the Safety Car.
- Upon arrival back at the starting grid the normal start procedure will be followed, with the start signal given in the normal manner.
- Riders who started the warm up lap from the pit lane must start the race from the back of the grid as directed by officials. In case of two or more riders, they will take up the last grid positions in order of their grid positions. Any rider arriving at the pit lane entry point after the Safety Car must enter the pit lane and start the race from the pit lane exit.
- After the start signal has been given and the last rider has passed the end of the pit exit road, the pit exit will be opened, as per Article 1.18.16. Any riders still in the pit lane may then start the race.
- The race distance will be according to Art. 1.26. Note that for a MotoGP race interrupted before 3 full laps have been completed, the race distance for the restart will be reduced by 1 lap from the original race distance.
- The Quick Start procedure may be invoked by Race Direction as necessary in cases other than an interrupted race (for example a delayed start procedure).
- The conditions regarding weather-related tyre changes in the MotoGP class described in the Standard Start Procedure (1.18. clauses 4, 7, 12, 13, 16) will apply to the Quick Start procedure.

1.19 Special Race Penalties Procedures

Among various penalties, the FIM MotoGP Stewards may apply the following ones:

1.19.1 Ride Through Procedure

During the race, the rider will be requested to ride through the pit lane. Stopping is not permitted. The rider may then rejoin the race.

The rider must respect the speed limit (Art. 1.21.14), in the pit lane. In case of infraction of this speed limit, **the rider will be penalised by the FIM MotoGP Stewards (default penalty is a 2X Long Lap Penalty, however other penalties may be imposed), and repeated infractions during the race will be further penalised.**

In the event of a restarted race, the above regulation will also apply.

In the case of a race interrupted prior to the penalty being complied with and if there is a second part, the rider will be required to ride through after the start of the second part of the race.

Yellow boards (100 cm horizontal x 80 cm vertical) displaying the riders' numbers (black colour) will be shown at the finish line and the information will also be displayed on the timekeeping monitors and dashboards.

Failure by the relevant rider to ride through, having been shown the board 3 times, will result in that rider being shown the black flag.

In the case where the organisation has been unable to carry out the ride through penalty before the end of the race, the relevant rider will be inflicted with a time penalty as determined by Race Direction to reflect the ride through time, and notified to teams before the race.

1.19.2 Long Lap Penalty Procedure

During a race, a rider may be instructed to complete the Long Lap Penalty procedure. The rider must ride through the pre-defined route, usually painted on an asphalt runoff area.

The penalty will be communicated via dashboard signals (where possible) and a board displayed for the rider at the finish line or other pre-defined area.

If the rider does not comply after the board has been presented 3 times the rider will be penalised with a **2 x Long Lap penalty** or other penalty as decided by the FIM MotoGP Stewards.

The rider must stay within the lines defining the Long Lap route, infractions may result in the penalty being repeated, or other penalty applied as decided by the FIM MotoGP Stewards.

In the case of a 2 x Long Lap Penalty being given, these 2 long laps must be completed within 5 laps of the penalty notification.

If the rider does not complete this 2 x Long Lap Penalty after the board has been presented 5 times, he will be penalised with a pit lane ride through (or other penalty as decided by the FIM MotoGP Stewards).

The rider carrying out the Long Lap penalty is responsible for leaving and re-joining the track to follow the designated route, in a safe manner without disturbing or endangering other riders. Infractions will be strongly penalised.

Overtaking is forbidden within the Long Lap route.

The penalty should not be carried out when there are yellow flags covering the penalty area, in this case extra lap(s) will be added to the **number of laps** allowed to comply if the area is unusable due to yellow flags.

In the case where the organisation has been unable to, or has decided not to carry out the long lap penalty before the end of the race, the relevant rider will be inflicted with an equivalent time penalty, or other penalty applied as decided by the FIM MotoGP Stewards.

In the case of a race interrupted prior to a long lap penalty being carried out, the relevant rider will be required to carry out a long lap penalty in the second part if the race is restarted, or other penalty such as an equivalent time penalty, as decided by the FIM MotoGP Stewards.

The Long Lap route and equivalent time penalty will be notified to the teams prior to the first practice session.

1.20 “Wet” and “Dry” Races

All races will be categorised as either wet or dry. A board may be displayed on the grid to indicate the status of the race. If no board is displayed, the race is automatically dry. The purpose of this classification is to indicate to riders the consequence of varying climatic conditions during a race.

1.20.1 Moto2 and Moto3 races

1.20.1.1

Dry Races - a race classified as dry will be interrupted by the Race Director, if he considers that climatic conditions affecting the surface of the track makes it likely that riders will wish to change tyres.

1.20.1.2

Wet Races - a race classified as wet, usually commenced in varying or wet conditions, will not be interrupted for climatic reasons and riders who wish to change tyres or make adjustments must enter the pits and do so during the actual race.

1.20.1.3

In all cases where the first race is interrupted for climatic reasons, then the restart will automatically be a “wet” race.

1.20.2 MotoGP race

A race will not be interrupted for climatic reasons and riders who wish to change machine (when allowed), tyres or make adjustments must enter the pits and do so during the actual race.

1.21 Behaviour During Practice and Race

1. Riders must obey the flag signals, the light signals, and the boards which convey instructions, including dashboard messages from Race Direction. Any infringement to this rule will be penalised according to the provisions of article 1.22 or the relevant article for Race Direction messages.

2. Riders must ride in a responsible manner which does not cause danger to other competitors or participants, either on the track or in the pit-lane. Any infringement of this rule may be penalised by the FIM MotoGP Stewards.
3. Riders should use only the track and the pit-lane. However, if a rider accidentally leaves the track then he may rejoin it at the place indicated by the officials or at a place which does not provide an advantage to him.

Any infringement of this rule during the practices or warm up will be penalised by the cancellation of the lap time concerned and during the race, by a penalty decided by the FIM MotoGP Stewards Panel.

Penalties imposed during a race will be communicated via dashboard signals (where possible) and a board will be displayed for the rider at the finish line during a maximum of 3 laps. If the rider did not comply after the board has been presented 3 times, **(5 times in case of a 2 x Long Lap Penalty)** they will be penalised by the FIM MotoGP Stewards (penalties may include Long Lap, 2 x Long Lap, Ride Through, Black Flag).

A time penalty may be imposed in lieu of a penalty where necessary. Further penalties may also be imposed.

4. Any repairs or adjustments along the race track must be made by the rider working alone with no outside assistance, except that rendered by the marshals. The marshals may assist the rider to the extent of helping him to lift the machine and holding it whilst any repairs or adjustments are made. The rider may then be assisted by marshals or others to re-start by pushing or to move the machine on track, trackside or in the service road. No person other than marshals or riders are permitted on the track side of the first line of protection.
5. If the rider intends to retire, then he must park his motorcycle in a safe area as indicated by the marshals.
6. If the rider encounters a problem with the machine which will result in his retirement from the practice or the race, then he should not attempt to tour at reduced speed to the pits but should pull off the track and park his machine in a safe place or as indicated by the marshals.

7. Riders who are returning slowly to the pits for remedial work should ensure that they travel as far as possible off the racing line.
8. Riders may enter the pits during the race, but taking the motorcycle inside the pit box is not permitted.

In the MotoGP class, in the case of an exchange of machine during a race (Art. 1.18.17), machines may enter the pit box, and be used again in the race.

Adding and removing fuel in pit lane during the race (ie. after the race start) is strictly prohibited. Any infringement of this rule will be penalised with a disqualification.

9. Riders who stop their engines in the pits may be assisted to re-start their motorcycle by the mechanics.
10. Riders are not allowed to transport another person on their machine or to be transported by another rider on his machine (exception: Another rider or by another rider after the chequered flag or red flag).
11. Riders must not ride their motorcycles in the opposite direction of the circuit, either on the track or in the pit lane, unless doing so under the direction of an Official.
12. No signal of any kind may pass between a moving motorcycle and the rider's team, or anyone connected with the motorcycle's team, entrant or rider, except for the signals of the timekeeping transponder, lap trigger, GPS (as per Art. 2.4.3.5.1), legible messages on a pit board, or body movements by the rider or team. Onboard TV camera signals are allowed, but only when such signals are for the purposes of and managed by the Championship Organiser.
13. All machines are required to carry onboard camera(s) and any other equipment such as for messaging and media if requested by the Championship Organiser. This includes the Dorna Onboard Module and the **Official timing** transponder.

The cameras and equipment must be carried during all practice sessions and the race (refer to Art. 2.x.4.2.11 for technical details).

14. A speed limit of 60 km/h will be enforced in the pit lane at all times during the event. Riders must respect the speed limit from where the sign 60 km/h is placed up to where the sign 60 km/h crossed out is placed.

Any rider found to have exceeded the limit during the practice will be subject to the prevailing fine of for the first offence. Repeat offences at the same event will incur a higher fine each time, and any rider committing 3 offences at a single event may also be subject to further penalties from the FIM MotoGP Stewards. Excessively high speed, in the judgement of the FIM MotoGP Stewards, and multiple repeat offences during the season may incur higher fines and may also be subject to further penalties.

For exceeding the pit lane speed limit during a race the standard penalty will be a 2x Long Lap Penalty. However the FIM MotoGP Stewards may apply further or different penalties (for example for excessively high speed causing danger).

The Race Direction must communicate the offence to the pit of the rider after having received the information from the Official in charge.

15. Stopping on the track during practices and races is forbidden.
16. During the practice sessions and warm ups, practice starts are permitted;
 - a) when it is safe to do so, at the pit lane exit before joining the track and
 - b) after passing the chequered flag at the end of practice sessions and warm-ups when it is safe to do so, off the racing line and only in the designated Practice Start Zone(s) and following the procedure as communicated to teams prior to the first practice session.

Infringement of this rule will incur an instant fine and further penalties may be applied.

17. If any rider wishes to parade a flag or engage in any celebration after the chequered flag, they must ride to the side of the racing surface in a safe location to collect the flag and/or perform any celebrations and then rejoin the circuit when it is safe to do so.

It is forbidden to stop on the start-finish straight after the chequered flag for any celebrations of any kind.

18. It is not permitted to ride racing motorcycles within the circuit other than in the pit lane, service road or on the track.
19. After the chequered flag, riders riding on the track must wear a safety helmet until they stop on the pit lane/parc fermé.
20. Penalties for infringement of Article 2.x.3.3 (Engine durability in MotoGP and Moto3).
 - Infringement before the race: the rider will start the race from the pit lane 5 seconds after the green light is on at the pit lane exit.
 - Infringement during the race: ride through.

Each engine taken above allocation will result in a penalty. Where more than one extra engine is taken at one event, remaining penalties will be carried forward to the next event if necessary.

21. Pit Lane Exit

The pit lane exit road will be defined by Race Direction and marked with painted lines. A dotted white line (interrupted line) will signify the end of the pit lane road, which is the point where the track starts and racing may commence. Riders must stay inside the painted lines defining the pit exit road until passing the dotted white line, during all track sessions (practice and race).

Infractions may be penalised with an instant penalty by the FIM MotoGP Stewards and further penalties may be applied.

1.22 Flags and Lights

Marshals and other officials display flags or lights to provide information and/or convey instructions to the riders.

All flags are presented waved.

Light panels may be used in addition to, or instead of, flags and may have slight variations in appearance compared to the flag due to technical constraints. Flags and lights on track are both official signals.

As from 2022 the use of light panels in association with waved flags will be compulsory in all circuits.

1.22.1 Flags and Lights Used to Provide Information:

- **Green Flag**

The track is clear

This flag must be waved at each flag marshal post for the first lap of each practice session and of the warm up, for the sighting lap and for the warm up lap.

This flag must be shown waved at the flag marshal post immediately after the incident that necessitated the use of one or more yellow flags.

This flag may be waved at pit exit, in conjunction with the official signal of the green light, as an extra signal that pit lane exit is open.

- **Yellow and Red Striped Flag**

The adhesion on this section of the track could be affected.

This flag must be shown waved at the flag marshal post.

- **White Flag with diagonal red cross (stroke width of the cross: between 10 and 13 cm)**

Drops of rain on this section of the track.

This flag must be waved at the flag marshal post.

- **Blue Flag**

Waved at the flag marshal post, this flag indicates to a rider that he is about to be overtaken.

During the practice sessions, the rider concerned must keep his line and slow down gradually to allow the faster rider to pass him.

During the race, the rider concerned is about to be lapped. He must allow the rider(s) who are lapping him to pass him at the earliest opportunity, and passing within a group of lapped riders is forbidden under the blue flag.

Waved at a marshal post after the pit lane exit, this flag indicates to a rider exiting pit lane that riders are approaching on track. The rider exiting pit lane must do so safely and without disturbing riders on track.

- **Chequered Black / White Flag**

This flag will be waved at the finish line to indicate the finish of race or practice session.

- **Chequered Black / White Flag and Blue Flag**

The chequered black/white flag will be waved together with the blue flag at the finish line when a rider(s) precedes closely the leader during the final lap before the finish line (see Art. 1.24.1).

- **Green Light**

This light must be switched on at the pit lane exit to signal the start of each practice session and of the warm up, the start of the sighting lap(s) and the start of the warm up lap.

- **Flashing Blue Lights**

Will be switched on at the pit lane exit at all times during practices and races, except when the red light is displayed.

1.22.2 Flags Which Convey Information and Instructions:

- **Yellow Flag**

Waved at each row of the starting grid, this flag indicates that the start of the race is delayed. Waved at one row (or more) of the starting grid, this flag indicates that a rider on that row is having difficulties.

A single yellow flag waved at the flag marshal post indicates that there is a danger ahead beside the track.

Two yellow flags waved together at the flag marshal post indicate that there is a hazard wholly or partly blocking the track.

The waving of a single or a double yellow flag does not signify a degree of danger, but only the location of the incident.

The riders must slow down and proceed with caution. During practice and warm up sessions, the lap time of riders passing a yellow flag(s) will be cancelled.

During a race, overtaking is forbidden up until the point where the green flag is waved.

An infringement of this rule will result in a penalty.

If immediately after having overtaken, the rider realises that they committed an infraction, they must let pass the rider(s) they have overtaken. In this case, no penalty will be imposed.

Penalties imposed during a race will be communicated via dashboard signals (where possible) and boards will be displayed for the rider on the finish line. If the rider does not comply after the board has been presented 3 times, **(5 times in case of a 2 x Long Lap Penalty)** they will be penalized.

A time penalty may be imposed in lieu of a penalty where necessary, and further penalties may also be imposed.

During the final inspection lap, this flag must be waved at the exact place where the flag marshal will be positioned during the practices, the warm ups and races.

- **White Flag**

Waved at the flag marshal post during the race, this flag indicates that the riders are allowed to change machine.

Only the Race Direction can take this decision.

- **Red Flag and Red Lights**

When the race or practice is being interrupted, the red flag will be waved at each flag marshal post and the red lights around the track will be switched on. Riders must return slowly to the pits.

When the pit-lane exit is closed, the light will be switched on, and the red flag may be used in conjunction with the official red light signal. Riders are not allowed to exit the pit lane.

The red flag will be shown motionless at the back of the starting grid at the end of the sighting lap.

The red flag will be shown motionless at the front of the starting grid at the end of the warm up lap.

The red flag may also be used to close the track.

The red lights will be switched on at the start line for between 2 and 5 seconds to start each race.

- **Black Flag**

This flag is used to convey instructions to one rider only and is waved at each flag marshal post together with the rider's number. The rider must stop at the pits at the end of the current lap and cannot restart, when this flag results from a penalty.

This flag can also be presented to a rider for a reason other than a penalty, eg. to rectify a non-dangerous technical problem such as a transponder problem, or to indicate to a rider on the warm up lap arriving at pit lane entry after the safety car, that they must enter pit lane.

- **Black Flag with orange disk (Ø 40 cm)**

This flag is used to convey instructions to one rider only and is waved at each flag marshal post together with the rider's number. This flag informs the rider that his motorcycle has mechanical problems likely to endanger himself or others, and that he must immediately leave the track. The rider cannot rejoin the track unless authorised to do so by an official.

1.22.3 Flag Dimension

The flag dimension should be 80 cms in the vertical and 100 cms in the horizontal.

The flag dimension will be checked the day preceding the day of the first practice session.

1.22.4 Flag Colour

The Pantones for the colours are as follows:

Orange:	Pantone 151 C
Black:	Pantone Black C
Blue:	Pantone 298 C
Red:	Pantone 186 C
Yellow:	Pantone Yellow C
Green:	Pantone 348 C

The flags' colours will be checked the day preceding the day of the first practice session.

1.22.5 Rider's number board

Black board (70 cm horizontal x 50 cm vertical) which enables the race number of a rider to be attached with a set of numbers in white, whose stroke width is minimum 4 cm and height minimum 30 cm.

This board must be available at each flag marshal post.

1.22.6 Flags Marshals posts

The location will be fixed during the circuit homologation.

1.22.7 Marshals Uniforms

It is strongly recommended the marshals' uniforms to be in white or orange (Ref. Pantone: 151 C) and the rain coat to be transparent.

1.23 Medical cars

The medical cars must be equipped with yellow flashing lights. The words "MEDICAL" should be clearly indicated on the back and the sides of the car.

1.24 Finish of a Race and Race Results

1.24.1

When the leading rider has completed the designated number of laps for the race, he will be shown a chequered flag by an official located at the finish line, behind the 1st protection line. The chequered flag will continue to be displayed to the subsequent riders.

When the chequered flag is shown to the leading rider, no other rider will be permitted to enter the track from the pit lane.

As soon as the chequered flag is shown to the leading rider, the red light will be switched on at the pit lane exit.

If a rider(s) closely precedes the leader during the final lap before the finish line, the official will show to the rider(s) and to the leader simultaneously the Chequered flag and the Blue flag. That means that the race is finished for the leader while the rider(s) closely preceding the leader has (have) to complete the final lap and take the Chequered flag.

1.24.2

To be counted as a finisher in the race and be included in the results a rider must:

- a) Complete 75% of the race distance.
- b) Cross the finish line on the race track (not in the pit lane) within five minutes of the race winner. In case the rider is not in contact with the machine, the finish time is determined by the first part of the rider or machine to cross the finish line, whichever arrives last.

1.24.3

The results will be based on the order in which the riders cross the line and the number of laps completed.

1.24.4

In case of a photo-finish between two, or more, riders, the decision shall be taken in favour of the competitor whose front wheel leading edge crosses the plane of the finish line first.

In case the rider is not in contact with the machine, the finish time is determined by the first part of the rider or machine to cross the finish line, whichever arrives last.

In case of ties, the riders concerned will be ranked in the order of the best lap time made during the race.

1.24.5

The riders placed in the first three positions in the race will be escorted by officials, as quickly as possible, to the podium for the awards ceremony. Participation in the podium ceremony by the first three riders is compulsory.

1.25 Interruption of a race

1.25.1

If the Race Director decides to interrupt a race at any point from the start of the warm up lap onwards, then red flags will be displayed at the finish line and at all marshals' posts and he will switch on the red lights around the circuit. Riders must immediately slow down and return to the pit lane.

The results will be the results taken at the last point where the leader and all other active riders on the same lap as the leader had completed a full lap without the red flag being displayed.

Exceptions:

1. If the race is interrupted after the chequered flag, the following procedure will apply:
 - a) For all the riders to whom the chequered flag was shown before the interruption, a partial classification will be established at the end of the last lap of the race.
 - b) For all the riders to whom the chequered flag was not shown before the interruption, a partial classification will be established at the end of the penultimate lap of the race.
 - c) The complete classification will be established by combining both partial classifications as per the lap/time procedure.
2. In an interrupted race, if the leader and all active riders on the same lap have completed a full lap before the red flag is displayed, and at that time there is a rider in pit lane which closes due to the red flag without the rider crossing a timekeeping point to complete the lap, the results will be taken from the last timekeeping point that the race leader and all other active riders on the same lap as the leader have crossed.

If there is a problem with a rider's timekeeping transponder, the results will be taken from the previous finish line results.

At the time the red flag is displayed, riders who are not actively competing in the race will not be classified.

Within 5 minutes after the red flag has been displayed, riders who have not entered the pit lane, crossing the designated pit lane entry timing point riding on their motorcycle, will not be classified.

An exemption may be granted in exceptional circumstances (eg. post-race celebration in an interrupted race deemed to have been completed as per Art. 1.25.4.

1.25.2

If the results calculated show that less than three laps have been completed by the leader of the race and by all other active riders on the same lap as the leader, then the race will be null and void and a completely new race will be run.

If it is found impossible to re-start the race, then it will be declared cancelled and the race will not count for the Championship.

1.25.3

If three laps or more have been completed by the leader of the race and all other active riders on the same lap as the leader, but less than two-thirds of the race distance (Moto2, Moto3) or three-quarters of the race distance (MotoGP), in both cases rounded down to the nearest whole number of laps, then the race will be restarted according to Art. 1.26. If it is found impossible to restart the race, then the results will count and half points will be awarded in the Championship.

1.25.4

If the results calculated show that two-thirds of the race distance (Moto2, Moto3) or three-quarters of the race distance (MotoGP), in both cases rounded down to the nearest whole number of laps have been completed by the leader of the race and by all other active riders on the same lap as the leader, then the race will be deemed to have been completed and full Championship points will be awarded.

1.25.5

For the purposes of these regulations “active” and “actively competing” are defined as the rider riding on track, or attempting to repair/restart the machine, or to rejoin the track or return to pit lane, **with the machine in a condition fit to rejoin the track**. The FIM MotoGP Stewards will be the sole judge of whether a rider is actively competing **including the condition of the machine** and no appeal is possible against the FIM MotoGP Stewards’ decision.

1.26 Re-Starting a race that has been interrupted

Re-started races will in principle follow the protocols defined in Article 1.26. However, as local track and climatic conditions and circumstances may vary, Race Direction may reschedule re-started races in the race programme as necessary, and will make the final decision on whether, when and how many times to re-start any interrupted race according to circumstances.

Note that in all cases of restarted races, the calculation of race distance required to declare a result (2/3 distance in Moto2/Moto3, 3/4 distance in MotoGP) is based on the number of laps of the current race, not the original Race 1 distance.

1.26.1

If a race has to be re-started, then it will be done as quickly as possible, consistent with track conditions allowing. As soon as the riders have returned to the pits the Race Director will announce a time for the new start procedure to begin which, conditions permitting, should not be later than 10 minutes after the initial display of the red flag.

1.26.2

The results of the first race must be available to teams before the second part of a race can be started.

1.26.3

The start procedure will be the same for all classes and will follow the Quick Restart Procedure, Art. 1.18.21), unless otherwise informed by Race Direction.

1.26.4

Conditions for the re-started race will be as follows:

- i) In the case of situation described in 1.25.2 (less than 3 laps completed) above:
 - a) All riders may start, including riders who may not have completed the sighting or warm up lap for the original start.

- b) Motorcycles may be repaired or changed. Refuelling is permitted.
 - c) - For Moto2 and Moto3, the number of laps will be two-thirds of the original race distance rounded down to the nearest whole number of laps.
 - For MotoGP, the number of laps will be 1 lap less than the original race distance.
 - d) The grid positions will be as for the original race.
- ii) In the case of situation described in 1.25.3 ie. 3 laps or more and less than two-thirds completed (Moto2, Moto3), or 3 laps or more and less than three-quarters completed (MotoGP):
- a) Only riders who are classified as finishers in the first race, as per Art. 1.25, may re-start.
 - b) Motorcycles may be repaired or changed. Refuelling is permitted.
 - c) - For Moto2 and Moto3, the number of laps of the second race will be the number of laps required to complete two-thirds of the original race distance rounded down to the nearest whole number of laps with a minimum of 5 laps.
 - For MotoGP, the number of laps of the second race will be the number of laps required to complete the original race distance with a minimum of 5 laps.
 - d) The grid position will be based on the finishing order of the first race.

Riders who are classified 1 lap down in the first race will start the restarted race from Pit Lane.

Riders who are classified 2 or more laps down in the first race will not be eligible to restart.
 - e) The final race classification will be established according to the position and the consolidated number of laps of each rider at the time he crossed the finish line at the end of the last part of the race. Provisions of Art. 1.24.2 will apply.

1.26.5

In the case of Art. 1.25.3 (race interrupted with 3 or more laps completed), any start position penalties applying to a rider in the first race. e.g. a drop of grid position or starting the race from pit lane, will be considered to have been served at the original race start and will not apply to the restarted race.

Any existing penalty applied before the race (eg. Long Lap Penalty, Ride Through) which has been completed in the first part of the race, will be considered to have been served and will not apply to the restarted race. If such penalty was not completed in the first part of the race it will be carried forward to be served in the restarted race.

In the case of Art. 1.25.2 (race interrupted with less than 3 laps completed) the new start will be a completely new race so therefore existing start position penalties and other penalties applied before the race will apply.

Penalties applied for offences (such as jump start, track limits) during the first race which was interrupted with less than 3 laps completed, will not normally carry forward to the restarted race. However the FIM MotoGP Stewards may specifically designate a penalty for an offence (for example dangerous or irresponsible riding) in the first race to be served in the restarted race where necessary.

1.26.6

Should a re-started race be interrupted and Race Direction deems it possible to re-start, then the conditions for a further re-start will follow Art. 1.26.4, with the race distance and results defined as follows:

A. For Moto2 and Moto3

1. If Race 1 was interrupted before 3 laps completed, and:

- a) Race 2 has completed at least two-thirds of Race 2 distance (according to 1.25.1) before being interrupted, then:

The race is deemed completed and full Championship points awarded.

b) Race 2 completes less than two-thirds of Race 2 distance, then:

I. Restart not possible:

Race 2 is declared cancelled and no Championship points awarded.

II. Restart possible:

Race 3 started as follows:

If Race 2 completed more than 3 laps, 1.26.4.ii applies (only finishers of Race 2 may start, machines may be repaired and refuelled, grid based on Race 2 result), with race distance of two-thirds of Race 2 distance with a minimum of 5 laps.

If Race 2 completed less than 3 laps, 1.26.4.i applies (all riders may start, machines may be repaired and refuelled, original grid), with race distance of two-thirds of Race 2 distance with a minimum of 5 laps.

If Race 3 is interrupted, results as follows:

If at least 2/3 of Race 3 distance or 5 laps (whichever is less) have been completed (according to 1.25.1), the race is deemed to have been completed and full Championship points awarded.

If less than 2/3 of Race 3 distance or 5 laps (whichever is less) have been completed, the race is declared cancelled and no Championship points awarded for this race.

(In this case, any further restart will be at the discretion of Race Direction, following Article 1.26.6.A.1.)

2. If Race 1 was interrupted after 3 laps but less than two-thirds race distance completed, and:

- a) Race 2 has completed at least two-thirds of Race 2 distance (according to 1.25.1) before being interrupted, then:

The race is deemed completed and full Championship points awarded. for this race (regardless of the number of laps completed in Race 1).

- b) Race 2 completes less than two-thirds of Race 2 distance, then:

I. **Restart not possible:**

Race 2 is declared cancelled and full Championship points awarded based on the results of Race 1, provided 5 or more laps were completed in Race 1.

If less than 5 laps were completed in Race 1 then the race is declared cancelled and no Championship points awarded.

II. **Restart possible:**

Race 3 started as follows:

If Race 2 completed more than 3 laps, only finishers of Race 2 may start, machines may be repaired and refuelled, grid based on Race 2 result, with race distance of two-thirds of Race 2 distance with a minimum of 5 laps.

If Race 2 completed less than 3 laps, only finishers of Race 1 may start, machines may be repaired and refuelled, grid based on Race 1 result, with race distance of two-thirds of Race 2 distance with a minimum of 5 laps.

If Race 3 is interrupted, results as follows:

If at least 2/3 of Race 3 distance or 5 laps (whichever is less) have been completed (according to 1.25.1), the race is deemed to have been completed and full Championship points awarded.

If less than 2/3 of Race 3 distance or 5 laps (whichever is less) have been completed, the race is declared cancelled and full Championship points awarded based on the results of Race 1, provided 5 or more laps were completed in Race 1.

If less than 5 laps were completed in Race 1 then the race is declared cancelled and no Championship points awarded for this race.

(In this case, any further restart will be at the discretion of Race Direction, following Article 1.26.6.A.1.)

B. For MotoGP

1. If Race 1 was interrupted before 3 laps completed, and:

- a) Race 2 completes at least three-quarters of Race 2 distance (according to 1.25.1) before being interrupted, then:

The race is deemed completed and full Championship points awarded.

- b) Race 2 completes less than three-quarters of race distance, then:

I. Restart not possible:

Race 2 is declared cancelled and no Championship points awarded.

II. Restart possible:

Race 3 started as follows:

If Race 2 completed more than 3 laps, 1.26.4.ii applies (only finishers of Race 2 may start, machines may be repaired and refuelled, grid based on Race 2 result), with race distance of the number of laps to complete Race 2 distance with a minimum of 5 laps.

If Race 2 completed less than 3 laps, 1.26.4.i applies (all riders may start, machines may be repaired and refuelled, original grid), with race distance of the number of laps to complete Race 2 distance with a minimum of 5 laps.

If Race 3 is interrupted, results as follows:

If at least $\frac{3}{4}$ of Race 3 distance or 5 laps (whichever is less) have been completed (according to 1.25.1), the race is deemed to have been completed and full Championship points awarded (regardless of the number of laps completed in Race 2).

If less than $\frac{3}{4}$ of Race 3 distance or 5 laps (whichever is less) have been completed, this race is declared cancelled and no Championship points awarded for this race.

In this case the race may be restarted again at the discretion of Race Direction, following Article 1.26.6.B.1.b).

- c) Race 3 completes less than $\frac{3}{4}$ of Race 3 distance or 5 laps (whichever is less), then:

I. Restart not possible:

Race 3 is declared cancelled and full Championship points awarded based on the results of Race 2, provided 5 or more laps were completed.

If less than 5 laps were completed in Race 2 then the race is declared cancelled and no Championship points awarded.

II. Restart possible:

Race 4 started according to the same criteria as the Race 3 start (if Race 2 over 3 laps then only finishers of Race 2 may start, grid based on Race 2 result. If Race 2 less than 3 laps then all riders may start, original grid) with race distance of the number of laps to complete Race 2 distance with a minimum of 5 laps.

If Race 4 is interrupted, results as follows:

If at least $\frac{3}{4}$ of Race 4 distance or 5 laps (whichever is less) have been completed (according to 1.25.1), the race is deemed completed and full Championship points awarded for this race (regardless of the number of laps completed in Race 2).

If less than $\frac{3}{4}$ of Race 4 distance or 5 laps (whichever is less) have been completed this race is declared cancelled and full Championship points awarded based on the results of Race 2, provided 5 or more laps were completed in Race 2.

If less than 5 laps were completed in Race 2 then the race is declared cancelled and no Championship points awarded.

2. If Race 1 was interrupted after 3 laps but less than three-quarters race distance completed, and:

- a) Race 2 completes three-quarters of Race 2 distance (according to 1.25.1) before being interrupted, then:

The race is deemed completed and full Championship points awarded for this race (regardless of the number of laps completed in Race 1).

- b) Race 2 completes less than three-quarters of race distance, then:

I. Restart not possible:

Race 2 is declared cancelled and full Championship points awarded based on the results of Race 1, provided 5 or more laps were completed.

If less than 5 laps were completed in Race 1 then the race is declared cancelled and no Championship points awarded.

II. Restart possible:

Race 3 started as follows:

If Race 2 completed more than 3 laps, only finishers of Race 2 may start, machines may be repaired and refuelled, grid based on Race 2 result, with race distance of the number of laps to complete Race 2 distance with a minimum of 5 laps.

If Race 2 completed less than 3 laps, only finishers of Race 1 may start, machines may be repaired and refuelled, grid based on Race 1 result, with race distance of the number of laps to complete Race 2 distance with a minimum of 5 laps.

If Race 3 is interrupted, results as follows:

If at least $\frac{3}{4}$ of Race 3 distance or 5 laps (whichever is less) have been completed (according to 1.25.1), the race is deemed to have been completed and full Championship points awarded (regardless of the number of laps completed in Race 2).

If less than $\frac{3}{4}$ of Race 3 distance or 5 laps (whichever is less) have been completed, the race is declared cancelled and full Championship points awarded based on the results of the preceding race provided 5 or more laps were completed.

If no previous race completed 5 or more laps, the race may be restarted again at the discretion of Race Direction, following Article 1.26.6.B.1.b). If a restart is not possible, the race is deemed cancelled and no Championship points awarded.

If restarted, and Race 4 completes at least $\frac{3}{4}$ of Race 4 distance or 5 laps (whichever is less), the race is deemed completed and full Championship points awarded for this race (regardless of the number of laps completed in Race 2).

If Race 4 completes less than $\frac{3}{4}$ of Race 4 distance or 5 laps (whichever is less), the race is declared cancelled and no Championship points awarded.

1.27 Check Area

At the end of the race, or the final part of a race that has been interrupted, the first three motorcycles plus any other motorcycles specified by the Technical Director, must be removed to a check area pending inspection by the Technical Scrutineers or potential protests. Machines will normally be released from the check area 60 minutes after the finish of the race.

1.28 Championship Points and Classification

1.28.1

Riders and Constructors will compete for the FIM World Championship Grand Prix.

Riders in MotoGP class independent teams will compete for the MotoGP Class Independent Team Rider Trophy.

Teams will compete for the FIM MotoGP Team World Championship, the FIM Moto2 Team World Championship, the FIM Moto3 Team World Championship or for the MotoGP Independent Team Trophy, as applicable.

1.28.2

For riders, the points will be those gained in each race.

1.28.3

For Constructors, only the highest placed motorcycle of a Constructor will gain points, according to the position in the race.

1.28.4

Teams in the MotoGP class will, in principle, be comprised of two riders. The names of the teams will be composed of three elements:

1. The name of the Manufacturer of the motorcycle or engine. (Mandatory).
2. The name of the Team. (Mandatory except where the Team name is the same as the Manufacturer).

3. The name of one principal Sponsor. (Optional).

Teams in each class will compete for a Championship or Trophy. For teams with more than one rider, in each race, points scored by the best placed rider and the worst placed rider in the team, including substitutes and replacements, will count towards the Team Championship.

In the case of a Team entered in an event with more than two riders, but starting the race with one/two riders, only the best placed rider will score points counting towards the Team Championship.

Wild card riders will not score points for the Team Championship.

1.28.5

For each race, Championship points will be awarded on the following scale:

1 st	25 points
2 nd	20 points
3 rd	16 points
4 th	13 points
5 th	11 points
6 th	10 points
7 th	9 points
8 th	8 points
9 th	7 points
10 th	6 points
11 th	5 points
12 th	4 points
13 th	3 points
14 th	2 points
15 th	1 point

1.28.6

All races will count for the Championship classification.

1.28.7

In the event of a tie in the number of points, the final positions will be decided on the basis of the number of best results in the races (number of first places, number of second places etc.). In the event that there is still a tie then, the date in the Championship at which the highest place was achieved will be taken into account with precedence going to the latest result.

1.28.8

The World Champions in each category are obliged to attend an official FIM ceremony.

1.29 Instructions and Communications to Competitors

1.29.1

Instructions may be given by the Race Director and/or Clerk of the Course to Teams and/or Riders by means of special circulars in accordance with the Regulations. Circulars must be posted on the official notice board, or delivered by electronic means such as email and/or placed in the special team mail box which will be provided by IRTA at each Event. Posting on the official notice board, or via electronic means and/or placing in the team mail box will be deemed as proof of delivery.

1.29.2

All classifications and results of practice and the race, as well as all decisions issued by the officials, must be posted on the official notice board or otherwise delivered to the Teams.

Posting on the official notice board and/or delivery to the Teams by other means will be deemed as proof of delivery and official publication.

1.29.3

Any communication from the Race Direction, the Permanent Officials, the Clerk of the Course or the FIM MotoGP Stewards Panel to a team or rider must be communicated in writing or via electronic means including but not limited to email and official Timekeeping monitors. Similarly, any communication from a team or rider to the Race Direction, the Permanent Officials, the Clerk of the Course or the FIM MotoGP Stewards Panel must also be made in writing including electronic means such as email.

1.30 Team personnel in the pit lane

For safety reasons, the following rules must be strictly respected.

1.30.1

Team personnel will not be permitted in the pit lane during practices, warm-up and race of another class unless they are making adjustments to their motorcycle.

1.30.2

The maximum number of team personnel per rider in the working area in front of the pits is limited to:

- 8 for MotoGP in free practice sessions and warm up
- 6 for MotoGP in Qualifying 1, Qualifying 2 and on Sunday warm up sessions and 5 in case of machine changes during a race declared wet (refer to Art. 1.18.17). These team personnel will be identified by the compulsory wearing of a helmet, approved by the Technical Director.
- 6 for Moto3 and Moto2

1.30.3

The maximum number of team personnel per rider on the signalling platform is limited to 4 for all the classes.

1.30.4

For safety reasons, it is not permitted to start the engine of racing motorcycles inside the pit box (permanent or temporary box) at any time. Engines must be started in the pit lane or other location outside of the pit box or tent.

1.30.5

For safety reasons it is not permitted to have the motorcycle engine running during any wheel change.

2. TECHNICAL REGULATIONS

2.1 Introduction

2.1.1

The Championship is for motorcycles, i.e. vehicles with two wheels that make one track propelled only by an internal combustion engine, controlled by one rider.

2.1.2

Providing that the following Regulations are complied with, the constructors are free to be innovative with regard to design, materials and overall construction of the motorcycle.

2.1.3

In the Technical Regulations section, the term “Organiser” refers to the Championship Organiser and/or Promoter.

2.2 Classes

The following classes will be accommodated, which will be designated by engine type:

<u>MotoGP</u> (ref. Section 2.4)	Up to 1000cc. 4-stroke only, maximum 4 cylinders, maximum cylinder bore 81 mm.
<u>Moto2</u> (ref. Section 2.5)	Moto2 Official Engine
<u>Moto3</u> (ref. Section 2.6)	Up to 250cc. 4-stroke only, single cylinder only, maximum cylinder bore 81 mm.

2.4 MotoGP Class Technical Regulations

Note that due to the disruption caused by the COVID-19 disease outbreak in 2020, the following cost-saving measures have been approved by the Grand Prix Commission.

For the 2021 season: Non-Concession and Concession manufacturers must start the first event of the season using only parts and specifications homologated as at March 2020*.

Normal upgrade regulations will apply for the rest of the 2021 season.

- * Where an option to upgrade parts exists in 2021 - specifically the one upgrade of Aero Body per rider and, in the case of Concession manufacturers, the ability to upgrade engine specification - this upgrade option may be taken at the first event of the 2021 season.
- * Therefore manufacturers are not required to start the first practice session of the 2021 season with a 2020 Aero Body that they may not intend to use in 2021 (ie. they are permitted to take their one allowed upgrade immediately at the first event).
- * The same applies to manufacturers who have Concessions in 2020, they are not required to start the first practice session of the 2021 season with a 2020 engine specification they may not intend to use in 2021 (ie. they may take their permitted upgrades of specification immediately at the first event).
- * Therefore a manufacturer with Concessions in 2020 who starts 2021 as a non-Concession manufacturer is subject to engine homologation regulations from the first event of 2021 where the 2021 specification will be presented to the Technical Director.

Clarification notes:

Engine Homologation for MotoGP Concession Manufacturers: Manufacturers benefitting from Concessions may delay the homologation of their 2020/2021 engine specification. The new deadline to submit specifications and sample engines to the Technical Director is 29 June 2020.

Sensors. Although sensors are homologated, these may continue to be developed and changed from time to time during the 2020 and 2021 seasons under the existing sensor regulations.

Machine Specification per rider. A rider may start the 2021 season using any of the homologated Aero Body specifications, engine specifications, or any other homologated parts specifications that have been homologated by the manufacturer in 2020.

Examples:

- Any rider in the 2021 season may start with any of the specifications that has been homologated in 2020 by the manufacturer he will ride for.
- A manufacturer is permitted to change the type of homologated machine specification level supplied to any rider using their machines at the start of the 2021 season.

For example, a 2020 rider continues in 2021 but receives either an upgrade of level from (such as B Spec to A Spec) or a downgrade of level (such as A Spec to B Spec).

Similarly, if a manufacturer has four riders in 2020 season using 2 x A Spec machines + 2 B Spec machines that manufacturer could choose any combination for 2021 - such as 4 x A Spec machines or any other mix.

2.4.1 Definition

Motorcycles participating in the MotoGP class must be prototypes. Those that are not entered by a member of MSMA must be approved for participation by the Grand Prix Commission.

2.4.2 Concessions

1. Various concessions in the Sporting and Technical regulations are granted to new MotoGP Class manufacturers entering the class for the first time since 2013, and to those manufacturers who have not achieved a race win in dry conditions since the 2013 season.

2. The full concessions are as follows

- The use of 9 engines per rider per season (Art. 2.4.3.3.1.b).
- Engines are exempt from the engine approval regulations (Art. 2.4.3.1.4.h).
- Teams may test with contracted riders (except during the test ban periods, refer to Art. 1.15.1.1.A.h) and test riders at any time and any circuit, using the team's Test Tyre Allocation, respecting the restrictions of Art. 1.15.1.1.A.g).
- Manufacturers are permitted a maximum of 6 Wild Card entries per season (Art. 1.11.10).

3. The granting and removal of concessions is based on the accrual by the manufacturer of Concession Points during races, in dry or wet conditions, taking into account all riders using that manufacturer's machines. Concession points are cumulative over all seasons until such time as a manufacturer accumulates 6 Concession Points and therefore loses the concessions (**taking into account that Concession Points expire after 2 years from the date they were accrued**). When 6 Concession Points are gained and concessions lost, the points count for this manufacturer re-sets to zero.

First place = 3 concession points

Second place = 2 concession points

Third place = 1 concession point

When a manufacturer reaches 6 concession points:

- The right to test on unlimited days according to Art. 1.15.1.1.A.g) is immediately cancelled. From that point the teams are subject to the testing restrictions of Art. 1.15.1.1.A. and the manufacturer is restricted to Art. 1.15.1.1.B, ie. test riders only.
- The right for Test Riders to test at any GP circuit is cancelled from the following season, at which time Art. 1.15.1.1.B will apply and the manufacturer must nominate 3 current GP circuits for testing.

- The use of 9 engines per rider per season is cancelled from the following season. For the next season all riders using the manufacturer's machines will be subject to Art. 2.4.3.3.1.a), ie. 7 engines per rider per season.
- The exemption from the engine approval regulations is cancelled from the following season. For the next season all engines of the manufacturer will be subject to Art. 2.4.3.1.4.
- The right to a maximum of 6 Wild Card entries per season is cancelled from the following season. For the next season the Manufacturer is limited to a maximum of 3 Wild Card entries per season (Art. 1.11.10).

When a manufacturer has accrued no concession points during any one season, all riders using this manufacturer's machines will benefit from the full concessions from the following season.

However any Concession Points (being less than 6) accrued by a manufacturer whilst benefitting from concessions during previous seasons remain on the points total for that manufacturer, until such time as 6 Concession Points are gained and concessions are lost. Such accrued Concession Points expire after 2 years from the date they were accrued. Concession Points are not recorded against manufacturers whilst they do not benefit from concessions.

2.4.3 Engines

Refer also to the new homologation regulations noted in Art. 2.4 above.

2.4.3.1 Engine Description

1. Engines may operate on the reciprocating piston four stroke principle only.

The normal section of each engine cylinder and piston in plan view must be circular. Circular section cylinders & pistons are defined as having less than 5% difference in the diameter measured at any two points.

2. Engines must be normally aspirated.
3. Cubic capacity of the engine will be defined by the swept volume of the cylinder, ie. the area of the bore of the cylinder multiplied by the stroke, multiplied by the number of cylinders.

No tolerance on capacities is permitted.

Engine capacity will be measured at ambient temperature.

4. Engine Approval is applicable to all MotoGP engines, except those from Manufacturers who qualify for Concessions (clause h), below), as follows:
 - a) An approved MotoGP engine is one which has all parts included within the seals (Art. 2.4.3.3.2) identical in every respect to the parts included within the seals of a sample engine delivered to the MotoGP Technical Director no later than close of Technical Control of the first event (Art. 2.4.5.1.5.e)i, below) or where all the parts included within the seals are the same for all sealed engines of the same rider (Art. 2.4.3.1.5.e).ii, below). All parts not within the seals are free to be changed. Once approved in accordance with the above, no changes may be made to the design or construction of the approved parts for the duration of the approval period of one full season.
 - b) Exceptions can be made for sealed parts that are solely associated with safety issues and which have no performance benefit, which may be changed during the approval period with the unanimous consent of the MSMA MotoGP Commission. Such exceptions will be on a strictly limited basis to correct a proven problem which may have safety implications (eg. a faulty batch of parts, with supporting documentation from the parts supplier to identify the problem). Engines already sealed, including used engines can be updated in this way with the unanimous consent of the MSMA MotoGP Commission and under supervision of the MotoGP Technical Director or his staff. If a competitor intends to modify the approved engine in this way he must provide precise details of the planned changes to the MSMA MotoGP Commission. In each case, only the approved changes may be made.

- c) The supplier of an approved engine and/or the team using the approved engine must comply with the requirements as determined by Race Direction to satisfy the MotoGP Technical Director that an engine used at an Event is indeed identical to the corresponding sample engine sealed and identified by the Technical Director (Art. 2.4.3.5.1.e).i, below).
- d) If the Technical Director requests that an engine is opened for verification, the following procedures will apply:
 - The checks will be carried out before the end of Technical Control at the following European event, at a time agreed between the Technical Director and the manufacturer or team involved, using one of these options:
 - I. At the end of the event where the inspection request was made.
 - II. Between events, at the European workshop of the manufacturer or team. The Technical Director or his representative will attend and oversee the inspection.
 - III. At the following European event, before the end of Technical Control.
 - Inspection checks will not be carried out at events outside of Europe, the check will be scheduled for the next European event.
 - No inspection check would be carried out until such time as the rider in question has 3 engines in allocation and available for use.
 - If an inspected engine is found to comply with the regulations, the manufacturer or team has the right to rebuild the engine with any new approved parts they wish, and re-submit the engine for sealing. Such a rebuilt engine will be limited to 3600 km of use in total, including any use before the inspection was made.
 - If an inspected engine is found to not comply with the regulations, it will be withdrawn from allocation and not replaced. Any penalties imposed by the **FIM MotoGP Stewards Panel** may be applied retrospectively to each time the non-compliant engine was used at an event.

- If an engine inspection is the result of a protest, the following conditions will apply:
 - I. All protests will first be referred to the **FIM MotoGP Stewards Panel** for approval to proceed. Protests may be denied approval to proceed if they are deemed by the **FIM MotoGP Stewards Panel** to be frivolous or an attempt to confer advantage on the protested team.
 - II. If the protest is unfounded due to the engine being in conformity with the regulations, the party lodging the protest will be required to pay to the protested manufacturer or team, an amount of 5,000 Euros to defray freight and rebuilding expenses.
- e) Each manufacturer may receive approval for up to a maximum of three different engine specifications for the season. These different specifications may include specifications approved in a previous season provided that such engines comply with the current technical regulations.

If a manufacturer loses Concessions and therefore becomes subject to engine approval regulations for the following season, then in this first season only, the maximum number of specifications allowed depends on the number of teams supplied:

- Factory team + up to 2 Satellite teams = 3 specifications
- Factory team + 3 satellite teams = 4 specifications
- Factory team + 4 Satellite teams = 5 specifications

Each manufacturer must nominate one team as it's Factory Team and each rider in that team must use the same approved engine specification.

Each rider must nominate, before the first event of the season, one specification of approved engine to be used exclusively for the season. In teams other than the nominated Factory Team it is permitted that this specification may be different for each rider.

- f) For engine specification verification, manufacturers may choose between two options:
- I. give one sample engine per specification, to be sealed as per Art. 2.4.3.3.2. prior to the close of Technical Control of the first event of the season. All the parts in this engine that are multiple examples of the same part, eg. piston, conrod, valve, etc. can be fitted in this sample engine using just one piece, eg. one piston, one conrod, etc. All the parts in this engine can be used parts, or
 - II. seal all engines available for a rider for the season before the first day of the first event. All such engines should be prepared ready for the seals required under Art. 2.4.3.3.2 to be fitted, and will be sealed by the Technical Director or his staff before the first practice session of the first Event of the season. All engines for the rider must be the same specification, and by choosing this option it is not necessary give a sample engine prior to the close of Technical Control of the first event. However, the first engine from each rider which is declared end-of-life and withdrawn from allocation by the team will be kept sealed and held as the sample engine to be used in any engine inspections.
- if a sample engine is presented for sealing in Option I. above, then any different specification engines may be represented by parts only. Only the parts that are different from the initial sample engine are required to be presented, in a container suitable for security sealing.
- g) The above approval procedure applies to all engines used by the rider, including any extra engines taken, above the allocated number of engines (Art. 2.4.3.3.4).
- h) The engines from a Manufacturer who qualifies for concessions, according to Art. 2.4.2, are exempt from these engine approval regulations. The period of the exemption is defined according to Art. 2.4.2.3.

2.4.3.3 Engine Durability

MotoGP Class

1. The number of engines available for use by each permanent contracted rider is limited to 7 for all of the scheduled races of a season of up to 20 races. The limit applies to all practice sessions and races at GP events, engines used for testing outside of GP events are not controlled. The following terms and exceptions will apply:
 - a) Contracted riders using machines from a Manufacturer who qualifies for concessions, according to Art. 2.4.2, will be limited to 9 engines for all of the scheduled races of a season of up to 20 races. The period of the concession is defined according to Art. 2.4.2.3.
 - b) Should a rider be replaced for any reason, the replacement rider will be deemed to be the original rider for purposes of engine allocation.
 - c) Each Wild Card entry is allowed 3 engines for their exclusive use during each event.
2. The engines available for the exclusive use of each rider must be marked and sealed by the Technical Director or staff prior to first use. It is the Team's obligation to register any new engine with the Technical Director prior to use. Once registered and used for the first time, engines may not be swapped between riders, even within the same team. A new engine is deemed to be used when the motorcycle with that engine crosses the transponder timing point at the pit lane exit.
3. The engines will be sealed (e.g. by means of wiring and identification tabs, stickers, etc) so that:
 - a) the timing system is not accessible (e.g. the head cover must be wired to the cylinder head),
 - b) the timing driving system is not accessible (e.g. the gear train/chain cover is wired so that it cannot be removed),

- c) the cylinder head and the cylinders block (if any) cannot be removed from the engine (e.g. the cylinder head is wired to the cylinders block and the cylinders block is wired to the engine crankcase),
- d) the crankcase cannot be opened (e.g. the crankcase halves are wired together).

All the parts that are accessible without removing the sealing wiring can be replaced. Breaking or removing the seal or wiring without supervision by the Technical Director or staff will be deemed to be “engine rebuilding” and engines with broken, tampered with or missing security seals will be treated as a new engine in the allocation.

- 4. Should a competitor, for any reason (e.g. mechanical failure, crash damage, etc.) require the use of another engine above their allocation, the Technical Director must be informed before the new engine is used, and **FIM MotoGP Stewards Panel** will apply the appropriate penalty according to the Sporting Regulations (Art. 1.21.20).

The damaged engine will be removed from the allocation and if it is used again, it will be treated as a new engine with the appropriate penalty.

- 5. There is no limit to the number of times a sealed, allocated engine can be fitted to and used in a motorcycle, provided the security seal is not broken or removed. Replacing an engine with another sealed engine (new or used) from the rider’s allocation is allowed with no penalty.

2.4.3.5 Electronics

1. GPS

In the MotoGP class, satellite Global Positioning Systems (GPS and similar) are not permitted, except those GPS units supplied by the Organisers and used for their media and promotional purposes. No GPS or similar system may be connected (wired or wireless) to any part of the machine, other than as directed by the Championship Organiser (hereinafter “Organiser”). Specifically it is prohibited to control any aspect of engine or motorcycle performance using the GPS signal.

2. Tyre Sensors

Tyre Air Pressure Sensors (TAPS) to monitor and log tyre pressure and temperature are mandatory in the MotoGP Class with the following conditions:

- All wheels (front and rear) fitted with tyres must have TAPS fitted and the data logged at all times the wheels are on the motorcycle.
- The Technical Director and staff, and the Official Tyre Supplier staff may check the pressure and temperature of a tyre at any time.
- Such measurement will normally be taken using a hand-held RF receiver so only tyre data is taken. In exceptional circumstances (eg. following an incident or safety concern) the Technical Director may request the logged tyre data from the ECU/datalogger, and teams must comply with such requests.
- The TAPS devices must be of a type approved by the Technical Director. Sensors currently listed on a Manufacturer's sensor approval form will be allowed until the end of 2018, and any manufacturer wishing to approve an alternative sensor must first submit it to the Technical Director for approval.
- Teams using TAPS devices with a locked signal must provide the access codes/addresses of all sensors to the Technical Director.
- The Technical Director may remove and send for analysis any TAPS device that he suspects is not sending accurate information.
- It is mandatory for each sensor identification code (ID) to be sent via the approved CAN protocol to the ECU, which will in turn forward this ID data to the timekeeping transponder (X2) by CAN packet 0x0CC. Refer to the official ECU supplier communications or the Technical Director for full details.

3. ECU and IMU

a) Hardware

- i) The exclusive use of the official MotoGP Electronic Control Unit (ECU), with no modifications or additions, is mandatory for all machines.

Only this specific type of official MotoGP ECU may be used, and any ECU used on a MotoGP machine at a GP event must be registered with the Technical Director.

- ii) The connection of any devices to/from this ECU must follow the diagram “MotoGP ECU Connections”. Refer to the Appendix, MotoGP: Fig. 2

- iii) The use of any additional device or module to modify the signals sent from the ECU to the actuators is forbidden. All engine management systems including injectors, bypass systems, variable intake systems, ignition, valves (including timing system and exhaust) must be operated exclusively by the original and unmodified ECU signal.

The use of “power modules”* is allowed, where the logic signal comes unmodified from the ECU, and the electric power may come from another source.

* A power module is defined as a module that has only:

- an electric power input
- an input from a MotoGP ECU
- a power output to an actuator

- iv) The exclusive use of the official MotoGP Inertial Measurement Unit (IMU)*, with no modifications or additions, is mandatory for all machines.

Only this specific type of official MotoGP IMU may be used, and any IMU used on a MotoGP machine at a GP event must be registered with the Technical Director.

The IMU is not considered as a “sensor” under these regulations, so sensor regulations herein do not apply.

* The designated MotoGP IMU is the Magneti Marelli IPS-160.

- v) Where a CAN decoupler is required, only the use of the official MotoGP unified CAN decoupler**, with no modifications or additions, is permitted, **and more than one piece is allowed on the same machine.**

Only this specific type of official MotoGP CAN decoupler may be used, and any CAN decoupler used on a MotoGP machine at a GP event must be registered with the Technical Director.

To the extent of these regulations, the unified CAN decoupler is considered a “Free Device”.

** the unified CAN decoupler is the Mastertech CAN2CAN Isolator C2C101.

b) Software

- i) The use of the Official MotoGP ECU and IMU software for engine and chassis control is mandatory for all machines, and no other engine and chassis control software strategies may be used on the machine at race events.

To this extent the logics inboard of CAN alternators and related regulators/powerboxes, and CAN actuators [see 3.d).i)] are not considered as engine control strategies, but communication with such devices is subject to the limitations in 3.d).ii).

Furthermore it is not permitted to override in any way the Official MotoGP ECU software strategies outputs, regardless of whether this may be achieved without altering the ECU outputs to the actuators (eg. overriding tools designed for dyno calibration purposes are not permitted to be used on track).

Only currently-approved versions of the Official MotoGP software are permitted to be used on MotoGP machines at race events.

- ii) If a change to the official software is requested unanimously by the MSMA MotoGP manufacturers permanently entered in the Championship, then the Organisers must adopt this modification, with the costs of such modification being the responsibility of these manufacturers.
- iii) Any changes to the official software strategies requested by the Organisers must be approved unanimously by the MSMA MotoGP manufacturers permanently entered in the Championship before they may be implemented. Approval is not required for normal maintenance and bug-fixing which does not change the software strategies.
- iv) Software (SW) version and data checking. The Technical Director may check the official SW version and data used on any MotoGP machines at any official MotoGP race event.

To achieve this, an approved ECU connector is compulsory (refer to the Appendix, MotoGP: Fig. 1). If this is a separate item and not permanently fixed to the machine, 3 examples of the cable per manufacturer must be delivered to the Technical Director prior to the close of technical control at the first race of the season.

Such checking will normally be made after timed practice/qualifying sessions and races, with the following procedure:

- The Technical Director will designate which machines are to be checked, and checking will be carried out in Parc Ferme. No team personnel may access the machine prior to checking without consent of the Technical Director.
- Only the Technical Director or his/her appointed Deputy is permitted to make a connection to the ECU and only using the approved Personal Computer (PC)*, running the Official Supplier's SW check tool to verify the SW version. A staff member from the Official supplier and a staff member of the team may be present for the checking.

- The Technical Director may at their choosing check specific data channels to confirm that the motorcycle complies with the FIM GP Regulations. The Technical Director will inform the team of which specific data channels that will be checked, with only these specific data channels being downloaded onto the approved PC. It will not be permitted for any data to be removed from the official PC or supplied to any third party without the permission of the team or Manufacturer. All data analysis must be carried out only on the official PC and under the supervision of the team and/or the manufacturer. The Technical Director may request the presence of a staff member from the Official ECU supplier to assist him in the checks.
- Once it has been confirmed that the data conforms to the FIM GP Regulations, it will immediately be deleted from the official PC.
- The machine will be returned to the team only with the consent of the Technical Director.

If, due to force majeure, the Technical Director is unable to attend to carry out SW checks, he/she may appoint a Deputy for this purpose. The Deputy must be a member of the Technical Director's full-time staff and cannot be an employee of the Official software supplier.

* approved PC must be secure, with the following conditions:

- PC will always be the same, any change of equipment must first be informed to the MSMA.
- PC will be password-protected and have the hard drive encrypted by Bitlocker®.
- PC will have the access ports locked, including USB, SD, CD, and Wireless LAN disabled (NB. the Ethernet port is required for communication with the ECU, so the IP and Netmask of the ECU will be the same for all, as specified by the Official Supplier).

- PC must always be in the possession and control of the Technical Director and not used by any other person without his consent. Specifically it is prohibited for the Official Supplier staff to have access to this PC other than to load the Official Supplier's SW check tool.
 - PC will have the minimum required operating system to run the Official Supplier's SW check tool, and may only be used for this purpose (specifically it may not be used for Internet browsing).
- v) All calibration parameters of the Official MotoGP ECU Software must remain fixed while the machine is running on track at MotoGP events. Calibration parameters may be changed by the team during track sessions only when the machine is stationary in the pit lane, pit box or paddock, or when out of track sessions (eg. on the grid before the race).

It is permitted to switch between different fixed sets of parameters while the machine is moving (ie. maps switching), but this can only be done by the rider's manual input.

The Technical Director may check that no calibration parameters have been changed while any machine has been running on track. In order to do so, the team may be required to deliver to the Official ECU Supplier the datalogs of certain specified channels (Checking Channels) according to clause 2.4.3.5.3. e) below.

An updated Checking Channels list will be supplied by the Official ECU Supplier at the same time as the release of any new Official MotoGP ECU Software version.

c) Sensors

Refer also to the new homologation regulations noted in Art. 2.4 above.

The only allowed input for sensors used as inputs for the official MotoGP ECU software is electric power. The output of such sensors cannot depend on anything other than electric power and the physical dimension they are intended to gauge (eg. the output of one such sensor cannot depend on, or be replaced or altered by, the signal from any other sensor or computational unit), and their output must be fed unaltered to the ECU.

All sensors and acquisition devices on MotoGP machines must be approved as follows:

- For each season the motorcycle manufacturer must submit an approval request to the Technical Director on the official form, detailing the sensor description/function, and the following:
 - I. For commercially available sensors from third party suppliers: the required information is the supplier's sensor identification code. Such sensors are approved as delivered from the supplier, but wiring and connector(s) may be changed or modified.
 - II. For proprietary sensors made by the motorcycle manufacturer: the required information is the sensor identification code, price, and availability/lead-time. Such sensors are approved as produced by the manufacturer, but wiring and connector(s) may be changed/modified. Approval is subject to the price and availability of such sensors being reasonable and in line with similar technologies in the market, at the sole discretion of the Technical Director.
- The deadline to submit approval requests is 7 days after the conclusion of the **final** pre-season test.
- The motorcycle manufacturer may request to add sensors to the list during the season by submitting an updated approval form to the Technical Director. Sensors already approved may not be removed from the list during the season.
- Approval will be valid for one season, and changes to a sensor specification during the season will only be permitted in exceptional circumstances (eg. to rectify a safety issue) and upon unanimous request by the MSMA to the Technical Director.
- The list of approved sensors will be published by the FIM.
- The relevant manufacturer must undertake to supply such approved sensors to all teams under the same price and lead-time conditions, if requested.

- The following exceptions to approval will apply:
 - I. Sensors included in the list of Free Devices (see below).
 - II. Non-approved sensors are permitted for testing and for the Free Practice 4 and Warm Up sessions at events. Only approved sensors may be used at all other times during a Grand Prix event.
 - III. Each manufacturer may nominate one Additional Sensor which may or may not be available to all MotoGP teams. This nominated sensor is permitted during all sessions including Qualifying and Race, but it may only be used for datalogging. It cannot be used as an input to any sensor or device other than the datalogger, and must not have any effect on the ECU control strategies. The connection to the wiring harness must be identifiable by the Technical Director by means of the wiring connection from the sensor being yellow in colour (minimum 50 mm length of yellow colour). If the sensor is connected directly to a CAN converter the connection wiring between the sensor and the CAN must be entirely yellow in colour. The deadline to submit the details of this additional sensor to the Technical Director is the same as for approved sensors, using the same approval form.

d) Free Devices

- i) Apart from approved sensors, there is a list of Free Devices permitted:
 - All actuators, such as fuel injectors, ignition coils, electric motors, actuation coils, fuel pumps, coolant pumps, engine lubricant pumps.
 - Alternator and related regulator/powerbox.
 - Dashboard and message display devices.
 - Wiring Harness.
 - Any device specifically allowed by the Organiser (eg. the unified CAN decoupler).

- ii) Only signals that are inputs of the official MotoGP unified software (USW) or calculated by the USW (eg. the vehicle speed), specifically excluding the IMU signal (regardless of whether it is re-routed and/or forwarded through the ECU) can be used to operate CAN alternators and related regulators/powerboxes and CAN actuators [see 3.d)i)]. That is, they can neither operate on the unified IMU signal nor on any signal that is not an output of the USW, or calculated by the USW.

Any costs incurred by the manufacturer or official ECU supplier in enabling such communication and implementation, and any performance risks associated with such devices, will be borne by the manufacturer.

- iii) Free Devices are free from approval, but are subject to disclosure and checking by another manufacturer as follows:
- A manufacturer (“checker”) may request to check a free device from a specific machine of another manufacturer (“owner”). The device will be removed by the Technical Director after the event and given to the checker.
 - The checker has 7 days to check the device, and a representative from the owner is entitled to be present during such checking if requested by the owner.
 - The details of the checking process and the results of the checking will be reported to the MSMA MotoGP members, and if necessary to the Technical Director.
 - If necessary, a checker may be required to refund the owner for any component damage or loss.
 - No manufacturer will be required to undergo more than 5 device checks per season, whether the same component or different components are involved (the wiring harness is considered to be a single component).

e) Datalogging

Checking of data acquisition channels may be requested by the Organiser, according to the conditions specified in a separate agreement between the Manufacturers and the Organisers.

2.4.3.6 Fuel System

MotoGP Class fuel system

1. In the MotoGP class the maximum permitted relative fuel pressure is 10 Bar, at a re-circulated flow rate of 50 litres/hour.

- a) It is mandatory to use an official approved fuel pressure regulator, as specified by the Technical Director. This official regulator must be fitted downstream of the fuel pump, such that the maximum fuel pressure available to the injectors is never more than 10 Bar.

The official regulator manufacturer may supply regulators set at any lower pressure and/or any higher flow rate, as requested by MotoGP teams, provided these regulators are not capable of delivering more than 10 Bar at 50 litres/hour.

- b) Additional regulators may be used in conjunction with the official regulator to further reduce and control fuel pressure, but no device or strategy capable of increasing fuel pressure at the injectors above 10 Bar may be used anywhere in the system.
- c) The approved fuel pressure regulator will be sealed, marked and certified by the regulator manufacturer, and may be inspected and/or removed for testing at any time by the Technical Director.
- d) Teams must supply a schematic diagram of their fuel system including the location of the fuel pressure regulator when requested by the Technical Director.
- e) In measuring the fuel pressure and flow rate delivered by the regulator, the tolerance as specified by the official approved regulator manufacturer will be taken into account.

2.4.3.7 Exhaust

1. The outlet of the exhaust must not extend behind a line drawn vertically through the edge of the rear tyre.
2. For safety reasons the exposed edge of the exhaust pipe outlet must be rounded to avoid any sharp edges.
3. Variable length exhaust systems are not permitted.
4. Exhaust Gas Recirculation (EGR) systems are not permitted.

2.4.3.8 Control Systems

1. The use of hydraulic and/or pneumatic pressurized powered systems is not allowed, with the **following** exceptions:
 - Normal hydraulic hand/foot controls such as master/slave cylinders for brakes/clutch are allowed, where pressure is built and released only by the rider's force.
 - Pneumatic engine valve closing systems in the MotoGP class only.
 - Oil/coolant pumps for engine lubricating/cooling, but the use of engine lubricating/cooling fluids for any purpose other than lubrication and cooling (such as powered hydraulic systems) is not allowed.

To this extent a hydraulic and/or pneumatic powered system is a system in which:

- the operating fluid does not complete an ideal cycle (efficiency = 1) during the system operation when running, or
- the ideal cycle (efficiency = 1) made by the operating fluid during the system operation when running is not conservative (i.e. the net energy balance is not zero), where a cycle is the sequence of changes in pressure and volume that ends with the same initial values and the same operating fluid mass.

For example, according to the above definitions and exceptions:

- Any system in which there is an operating fluid mass exchange with the ambient air is not allowed (e.g. a discharging reservoir, or an intake).
- Any system in which the operating fluid is displaced between chambers at different pressures is not allowed (e.g. pumps, despite pumping energy is recovered like in suspensions-driven pumps).
- A system in which the operating fluid increases or reduces its volume within a sealed variable volume chamber is allowed (e.g. pressurized damping cartridges), as the ideal fluid cycle is conservative.

- A fluid serving the only function of damping is not considered as “operating”, so pure dampers are allowed (e.g. the hydraulic damper in a conventional passive shock absorber).
2. Variable valve timing and variable valve lift systems, driven by hydraulic and/or electric/electronic systems are not permitted.

2.4.3.9 Transmission

1. A maximum of six gear ratios is permitted.
 - a) In the MotoGP class the total number of gearbox ratios (pairs of gears) permitted is 24, plus 4 different overall ratios for the primary drive, for each season.
 - b) Teams will be required to declare all the gearbox ratios chosen for each gearbox speed before the first race of the season, and only these declared ratios may be used during the entire season. Any ratios not declared before the first race of the season may not be used during that season.
2. Twin clutch transmission systems (DSG) are not permitted.
3. Continuously Variable Transmission systems (CVT) are not permitted.
4. Automatic transmission systems are not permitted. Manual transmissions with gearshifts assisted by quick-shifter systems are permitted.

2.4.3.10 Materials

- NB. “X-based alloy” or “X materials” here means the element X (e.g. Fe, for ferrous or iron-based alloy) must be the most abundant element in the alloy, on a % w/w basis.
1. The use of titanium in the construction of the following parts is forbidden:
 - The frame/chassis, excluding bolts and fasteners (the decision of the Technical Director will be final when determining what constitutes a part of the chassis).

- The swinging arm, excluding bolts and fasteners.
 - The swinging arm spindles.
 - The wheel spindles (for wheels spindles, the use of light alloys is also forbidden).
 - The handlebars.
 - The front suspension inner and outer tubes and bottoms (ie. axle mounting point).
 - The shock absorber piston shaft and damper tube.
2. The basic structure of the crankshaft and camshafts must be made from ferrous materials, steel or cast iron. Inserts of a different material are allowed in the crankshaft for the sole purpose of balancing.
 3. Pistons, cylinder heads and cylinder blocks may not be composite structures which use carbon or aramid fibre reinforcing materials.
 4. Brake calipers must be made from aluminium materials with a modulus of elasticity no greater than 80 Gpa.
 5. All connectors from the brake hose to the brake calipers (front and rear) and the brake master cylinders must have structural components (*) manufactured from either steel or titanium alloys with a tensile strength no less than 500 Mpa.

* Brass connectors are permitted for rear brake hoses only.
 6. No parts of the motorcycle or engine may be made from metallic materials which have a specific modulus of elasticity greater than 50 Gpa/(g/cm³).
 7. The use of MMC (Metal Matrix Composite) and FRM (Fibre Reinforced Metal) materials is forbidden.
 8. In the MotoGP class, hollow structure connecting rods are not permitted. Oil galleries of less than 2 mm diameter in the connecting rod are permitted.



2.4.4 Chassis

2.4.4.1 Weights

- 1. The following are the minimum weights permitted:

MotoGP	up to 800cc	motorcycle	150 kg
	801 - 1000cc	motorcycle	157 kg
- 2. Ballast may be added to achieve the minimum weights.
- 3. Weight may be checked at the initial technical control, but the main control of weight will be made at the end of practice sessions or at the end of the race. The weight of the motorcycle will be that measured in the form that the motorcycle participated, with fuel tank on and including normal levels of oil and water, and all additional equipment attached to the motorcycle, for example timekeeping transponders, camera equipment, electronic datalogging equipment etc.

2.4.4.2 Safety and Construction criteria

Note: Please also refer to the Appendix, General and MotoGP sections.

- 1. Chassis Design and Construction

The chassis must be a prototype, the design and construction of which is free within the constraints of the FIM Grand Prix Technical Regulations. The main frame, swingarm, fuel tank, seat and fairing/bodywork from a non-prototype (ie. series production road-homologated) motorcycle may not be used.
- 2. Throttle Twist grips

Throttle twist grips must close automatically when released.
- 3. Steering
 - a) Handlebars must have a width of not less than 450 mm and their ends must be solid or rubber covered. The width of the handlebar is defined as the width measured between the outside of the handlebar grips or throttle twist grips.
 - b) There must be at least 15 degrees of movement of the steering each side of the centre line.

- c) Stops must be fitted to ensure a clearance of at least 30 mm between the handlebar and the fuel tank frame and/or bodywork when at the extremes of steering lock.

4. Footrests

Footrests must have rounded ends with a minimum solid spherical radius of 8 mm.

5. Handlebar Levers

Levers must not be longer than 200 mm measured from the pivot point.

6. Clearances

- a) The motorcycle, unloaded, must be capable of being leaned at an angle of 50 degrees from the vertical without touching the ground, other than with the tyre.
- b) There must be a clearance of at least 15 mm around the circumference of the tyre at all positions of the motorcycle suspension and all positions of the rear wheel adjustment.

7. Breather Pipes

Any breather pipe from the engine or gearbox must discharge into the airbox and/or a suitable container.

8. Chain Guards

A guard must be fitted in such a way as to prevent trapping between the lower drive chain run and the final drive sprocket at the rear wheel.

9. Engine Covers

Lateral engine covers containing oil and which could be in contact with the ground during a crash, should be protected by a second cover made from composite materials, e.g. nylon, carbon or Kevlar®. Plates and/or bars from aluminium or steel are also permitted. All these devices must be designed to be resistant against sudden shocks and abrasion and must be fixed properly and securely.

Such protection is mandatory for non-prototype engines in the MotoGP class, and as directed by the Technical Director.

10. Timing Transponders

- a) All machines must have a correctly-positioned timekeeping transponder, of the correct type for the class entered. The transponder must be supplied or approved by the official Timekeeper and fixed to the motorcycle in the position advised by Timekeeping and approved by the Technical Director.
- b) The transponder must be supplied with power at all times the machine is in pit lane or on the track, including when the engine is switched off by the rider.
- c) The **Official timing** transponder must be mounted at the front of the motorcycle under the radiator to optimize performance and cooling, with a tolerance of 10 cm backwards toward the rear of the motorcycle. The fairing must incorporate a Kevlar window under the Transponder with the following dimensions:

covering the entire profile of the transponder plus 6 cm at the front and 6 cm at the rear, and plus 3 cm on each side. The transponder and Kevlar window must not be covered with metallic tape or other material which inhibits transponder function.
- d) Transponders must be fully functional on the motorcycle as required by the Organiser, including wiring, power supply, and inputs / outputs for data or signals purposes. Where signals are required to be displayed on the motorcycle, the display device (eg. dashboard) must be compatible and fully functional for this purpose, as approved by the Technical Director. Refer to the Appendix, General: Fig. 7 for the current list of signals required to be displayed.
- e) Virtual Pit Board messaging systems (VPB) in the MotoGP class are optional, but if used they must follow the regularly updated technical protocols issued by Dorna Timekeeping. The dashboard must display exactly the same the message as that sent by the team and received by Timekeeping/TV, following the protocols in the current VPB documents. Refer to the Appendix, General: **Fig. 12** for technical details of the VPB system.

11. Onboard Cameras

Where the Organiser has required a team to carry onboard camera(s) or other equipment such as the **Dorna Onboard Module** and the **Official timing transponder and relevant antennas**, under Art. 1.21.13, such cameras and equipment must be carried during all practice sessions and the race, or as requested by the Organiser.

Cameras and other equipment will be supplied to the designated Teams no later than 10h00 on the day preceding the first day of practice at an event.

Teams must give reasonable access and assistance to the company designated for the supply of the camera equipment to facilitate the mounting of the equipment.

All onboard cameras and **Organiser's** equipment must be fitted to the machine following the mounting instructions and only in the location(s) specified by the Organiser. Such fitting details will be communicated to the manufacturers and teams before July of the previous season.

CAN devices such as the Dorna Onboard Module and Official timing transponder shall be connected as per Appendix item MotoGP: Fig. 2, MotoGP ECU Connections.

12. Safety Lights

All motorcycles must have a functioning red light mounted at the rear of the machine to be used in rain or low visibility conditions as instructed by Race Direction. The team must ensure that the light is switched on whenever a rain tyre is fitted on the motorcycle.

Lights must comply with the following:

- a) lighting direction must be parallel to the machine centre line (motorcycle running direction), and clearly visible from the rear at least 15 degrees to both left and right sides of the machine centre line.

- b) mounted on the seat/rear bodywork approximately on the machine centre line, in a position approved by the Technical Director. In case of dispute over the mounting position or visibility, the decision of the Technical Director will be final.
- c) power output/luminosity equivalent to approximately: 10 - 15W (incandescent) 0.6 - 1.8 W (LED).
- d) safety light power supply may be separated from the motorcycle main wiring and battery.

2.4.4.3 Brakes

1. Motorcycles must have a minimum of one brake on each wheel that is independently operated.
2. In the MotoGP class, carbon brake discs must be one of the permitted sizes for outside diameter, that is: 320 mm and 340 mm.

At certain circuits, for safety reasons, the use of 340 mm carbon brake discs is mandatory for the race, if declared Dry by the Race Director. There are no restrictions on brake disc sizes in a race declared Wet. The circuit(s) currently listed for mandatory 340 mm brake disc use are:

I. Motegi (Japan)

3. In all classes, the proportion of ceramic composite materials in brake discs must not exceed 2% by mass.

Ceramic materials are defined as inorganic, non metallic solids (e.g. Al₂O₃, SiC, B₄C, Ti₅Si₃, SiO₂, Si₃N₄).

Refer to Art. 2.4.3.10. 4) and 5) for other permitted materials in brake component construction.

4. Motorcycles must be equipped with brake lever protection, intended to protect the handlebar brake lever(s) from being accidentally activated in case of collision with another machine. Acceptable protection includes the fairing extending sufficiently to cover the brake lever, as viewed from the front.

Such devices must be strong enough to function effectively and designed so that there is no risk for the rider to be injured or trapped by it, and it must not be considered a dangerous fitting (at the sole discretion of the Technical Director).

In case the brake lever protection is attached to any part of the braking system (e.g. brake master cylinder), then the brake system manufacturer must officially confirm in writing to the Technical Director that the device does not interfere with the proper brake operation.

5. Anti-lock Brake Systems (ABS) are not permitted. Braking inputs must be powered and controlled solely by the rider's manual inputs. Conventional hydraulic hand/foot controls such as master/slave cylinders for brake systems are allowed (refer also to Art. 2.4.3.8 Control Systems) but no increase or control of brake pressure by electronic or mechanical systems apart from the rider's direct manual inputs are allowed. Specifically, brake systems designed to prevent the wheel from locking when the rider applies the brake are forbidden.
6. In the MotoGP class the brake suppliers commit to sell to their customer teams a front brake "MotoGP Season Package" for a price of no more than 70,000 Euros per rider (excluding VAT, excluding freight).

The package is intended to cover the basic minimum dry weather front wheel braking needs for one rider for one MotoGP season, and will consist of:

- 3 left-hand + 3 right-hand calipers, (following the materials restrictions in clause d. below)
- 3 master cylinders
- 10 carbon discs *
- 28 carbon pads *

* In the case of carbon discs where certain sizes are mandated by the regulations, at least one set of each mandated size plus sufficient brake pads for that size must be included.

- a) Each brake supplier must deliver to the Organiser a list of the items available in their package, with individual prices and identification notes.
- Prices must comply with a “reasonable market value” standard, as determined by the Organiser.
 - Identification notes must be as requested and approved by the Technical Director to enable him to identify permitted components (eg. drawings and/or a table of parts markings showing the main dimensions, weight and features corresponding to each marked part). Such identification notes will be strictly confidential, for use of the Technical Director and not published.
 - The deadline for submission of this information is 7 days after the conclusion of the **final MotoGP pre-season** test.
- b) Different versions of the same part may be listed for the teams to choose from. All versions must be shown on the parts package list, including but not limited to the examples below:
- different specification master cylinders
 - different compound carbon disc material
 - different disc carriers for mounting to various wheel/motorcycle brands

Note that some “fitting” items may be changed in shape and specification without the versions being noted separately in the parts package list. These items include:

- different master cylinder brake levers, for rider preference
 - different brake pad retaining devices, for different pad shapes
- c) Teams are permitted to purchase extra quantities than those defined in the package, but only items in the brake supplier’s original list may be used on a MotoGP machine (eg. if two master cylinders are in the list, teams may purchase one or both in unlimited quantities, but may not use a third different specification that is not in the list).

- d) The construction materials allowed for the main body of each component are:
 - Calipers, Master Cylinders, Disc Mounting Hubs - Al2024, Al7075, Al6082, Al2618, Al6061 (Specifically Al-Li material is forbidden).
 - Brake Disc Rotors - Ferrous or Carbon (refer to Art. 2.4.4.3.4).
 - Brake Pads for Carbon Discs - Carbon.
 - Brake Pads for Ferrous Discs - no restriction.
- e) The parts list may not be updated during the season, other than with the express consent of the Technical Director (eg. to alleviate a safety problem).
- f) Evolution and updates are permitted from one season to the next, with the following limitations:
 - Construction materials must comply with the Allowed Materials list (Art. 2.4.4.3.6. d, above).
 - Individual component prices and the total package price must not increase for 3 years (ie. for the 2018, 2019 and 2020 seasons), after which time the suppliers may submit a new price list to the Organiser for approval.

2.4.4.4 Suspensions and Dampers

Electric/electronic controlled suspension, ride height and steering damper systems are not allowed. Adjustments to the suspension and steering damper systems may only be made by manual human inputs and mechanical/hydraulic adjusters, or **passively determined by forces/displacements directly transmitted by mechanical/hydraulic connections (e.g. suspension position, load, acceleration, pitch... may be used as mechanical triggers of a passive adjustment).**

For example, according to the above, ride height systems that operate on collapsible elements that collapse/extend under the load they are subjected to, and are locked/unlocked by the rider and/or by mechanically-triggered locks are allowed.

2.4.4.5 Fuel Tanks

1. Fuel caps must be leak proof and have a positive closing device.
2. Fuel tank breather pipes must discharge into a catch tank, one per motorcycle with a minimum capacity of 200cc and a maximum capacity of 250cc (the capacity includes all tubing supplying the catch tank from the fuel tank), and must be equipped with a valve between the fuel tank and the catch tank. Any fuel overflow from the fuel tank must be collected by the catch tank only.

The catch tank must be manufactured from a transparent material to allow for visual inspection, and be positioned on the machine so as to be easily accessible for inspection.

The Technical Director or the assigned Technical scrutineer must confirm that the catch tank is empty before fuel can be transferred to the fuel tank for the race.

3. Fuel tanks of all construction types must be filled with fire retardant material or be lined with a fuel cell bladder.

In all classes, fuel tanks made of non-metallic composite materials (carbon fibre, aramid fibre, glass fibre, etc.) must be fitted with a fuel cell bladder, or have passed the appropriate FIM test standards for composite material fuel tanks as described in the FIM Fuel Tank Test Procedure for fuel tank approval.

Such composite fuel tanks without a fuel cell bladder must bear a label certifying conformity with FIM Fuel Tank Test Standards. Such labels must include the fuel tank manufacturer's name, date of tank manufacture, and name of testing laboratory.

Each manufacturer is requested to inform the FIM/CCR Secretariat of its fuel tank model(s) which have passed the FIM test standards, together with a copy of the fuel tank label.

Full details of the FIM Fuel Tank Test Standards and Procedures are available from the FIM. (<http://www.fim-live.com/en/library/>)

Fuel cell bladders must conform to or exceed the specification FIM/FCB-2005. Full details of this standard are available from the FIM.

4. Except for the case that a fuel tank is fixed on the chassis with bolts, all fuel lines from the fuel tank to the engine/injector system must have a self sealing breakaway valve. This valve must separate at less than 50% of the load required to break any part of the fuel line or fitting or to pull it out of the fuel tank.
5. Fuel tank capacity.
 - The fuel tank capacity limit in the MotoGP Class is a maximum of 22 litres.
 - In defining fuel tank capacity all containers/devices of the motorcycle capable of supplying fuel to the carburettors/injectors may be taken into account (with the exception of the fuel catch tank including it's supply tubing, and any containing devices downstream of the fuel pump).
6. Refuelling may only be carried out from an unpressurised container, and the motorcycle fuel tank may not be artificially pressurised above atmospheric pressure at any time. It is allowed to vent the fuel tank to the atmosphere via the airbox in order to equalise pressure in the airbox and fuel tank.

2.4.4.7 Bodywork

Refer also to the new homologation regulations noted in Art. 2.4 above.

Refer to the Appendix, General: Fig. 1, Fig. 2, Fig. 3, Fig. 4, Fig. 5, Fig. 6; all figures and prescriptions are relevant to the motorcycle to be checked as follows:

- i) Any motorcycle that is chosen for technical verification will be checked in the condition that it **was used during the session**. Meaning, it will not be permitted to make any mechanical adjustments to the motorcycle (other than the preload to the front forks to accommodate the checking tool as listed below).

In case the machine is equipped with a passive ride height system, it will be checked in the following conditions:

- up until the end of the 2021 season: with the ride height system in the fully up position.

- from the 2022 season onwards:
 - Up: with the ride height system in the fully up position.
 - Down: with the ride height system and the rear suspension unlocked and free to move, the rear of the machine being supported at the rear wheel spindle, the rear wheel touching the ground, and a weight of 80kg will be applied to the rear of the machine.
- ii) Before the close of technical control of the first Grand Prix of the season, each manufacturer must declare their fully extended fork travel length, they will also need to provide to the Technical Director a spacer/checking tool that is manufactured to the declared length and will fit within the fork travel. Therefore, every time a motorcycle is checked, the spacer as supplied by the manufacturer will be used to determine that the correct length of front fork travel is achieved. The only adjustment allowed to accommodate the spacer is on the preload of the forks.
- iii) The rear of the motorcycle should be supported at the foot pegs only, with the rear wheel itself supported only by its own weight and have no more than 3 mm of ground clearance.
- iv) No lean angle (i.e. machine straight up).
- v) The cameras and equipment referred to in 1.21.13 are not subject to the bodywork regulations, prescriptions and limit dimensions, unless otherwise specified.
- 1. The windscreen edge and the edges of all other exposed parts of the streamlining must be rounded.
- 2. The maximum width of the Aero Body (see 10.) must not exceed 600 mm above the Reference Line, or 550 mm below the Reference Line.

The Reference Line is a horizontal line 550 mm above ground level (refer to Appendix, General: Fig. 2, 3, 4.).

The parts of the motorcycle that, in a side view, are behind a vertical line that is 500 mm ahead of the vertical line touching the rear edge of the rear tyre cannot exceed 1250 mm in height and, in a top view, they must not exceed a tapered area going from the width of 450 mm in correspondance of 500 mm ahead of the rear edge of the rear tyre, to 200 mm in correspondance of the rear edge of the rear tyre, with the exception of exhaust pipes and/or exhaust pipe covers that are contained in a 20 mm offset of the outer exhaust pipes surface.

Any unsprung parts of the rear suspension, and any part that moves as a consequence of the rear wheel suspension travel (e.g the swingarm, the rear mudguard, swingarm crash covers...), is not limited by the tapered rear body limits, but it is subjected to the specific 400 mm width limit, with the sole exception of round section rear wheel lift bolts.

Swingarm covers that match the swingarm surface and are contained inside a 10 mm swingarm offset are not considered as parts of the Aero Body, if the swingarm itself is not part of the Aero Body (see 10.ii.).

The maximum dimensions and outer profile of the upper and lower parts of the main fairing are shown in the Appendix, General: Fig. 3 and Fig. 4, and will be controlled with a template of these dimensions, under conditions as detailed by the Technical Director.

Any attachment to the front suspension unsprung parts (e.g. brake rotors covers, calipers, cooling ducts...), with the exception of the Front Fender (see 10.) and the parts of the braking circuit (calipers, hoses), must be contained inside a horizontal cylinder that is centered in the wheel center, symmetrical with respect to the symmetry plan of the front tyre and having a maximum diameter of 500 mm and a maximum staggered width of 330/365 mm, as per the diagrams the Appendix, General: Fig. 5, Fig. 6.

The width of the windscreen must not exceed 300 mm (measured in a straight line).

The length of the windscreen must not exceed 370 mm (measured along the windscreen surface).

3. Bodywork must not extend forward past a vertical line drawn 150 mm behind the front edge of the front tyre.
4. When viewed from both sides, it must be possible to see:
 - a) One or more portions of the rear wheel rim that, together with other parts not belonging to the Aero Body, make a total of at least 50% of the inner rim circumference (i.e. parts not belonging to the Aero Body will contribute to the 50% minimum, together with the exposed portions of the rim). To this extent the rim is the circular portion of the wheel fitting the tyre, with the exception of hub and spokes, and its inner circumference is clarified in Fig. 6. A rear mudguard not belonging to “Area A” is not part of the Aero Body, so it is counted in the 50% of the rear rim inner circumference, together with the swingarm when it is not part of the Aero Body.
 - b) The whole of the front rim (to this extent the rim is the circular portion of the wheel fitting the tyre, with the exception of hub and spokes), other than the part obscured by the Front Fender, forks, brake parts or front suspension attachments (see 2.).
 - c) The rider, seated in a normal position with the exception of the forearms.

Note: No transparent material may be used to circumvent the above rules.

5. No part (or portions of) of the motorcycle may be behind a line drawn vertically at the edge of the rear tyre, or closer than 50 mm to the ground, **with the following exception: parts of the Aero Body belonging to Area “A” cannot be closer than 20 mm to the ground when the machine is checked according to 2.4.4.7.i) in the “down” position.**

6. The seat unit shall have a maximum height of the (approximately) vertical section behind the rider's seating position of 150 mm. The measurement will be taken at a 90° angle to the upper surface of the flat base at the rider's seating position, excluding any seat pad or covering.
7. When fitted, Front Fenders must not extend:
 - a) Front leading edge: In front of a line drawn upwards and forward at 45 degrees from a horizontal line through the front wheel spindle.
 - b) Rear trailing edge: Below a line drawn horizontally through the front wheel spindle.

The Front Fender mounts/brackets and fork-leg covers, close to the suspension leg and wheel spindle, and brake disc covers are not considered part of the Front Fender.

8. Moving aerodynamic devices are prohibited; to this extent, any part of the Aero Body (see 10.) shall be attached so that neither active adjustability is possible (e.g. linkages, bearings and any design that permits an intentional change in shape/orientation/position are not allowed), nor passive; to this extent any part of the Aero Body (see 10.), when mounted on the bike in normal operating condition, shall have a maximum deflection of 10 mm in any point, when a 50N vertical load is applied in the downward direction with a spherical 20 mm radius steel penetrator.
9. The lower fairing has to be constructed to hold, in case of an engine breakdown, at least half of the total oil and engine coolant capacity used in the engine (minimum 4 litres for MotoGP). This measurement should be taken with the fairing fitted to the motorcycle, whilst both wheels are on the ground and the motorcycle is upright at 90° to the horizontal, under its own weight (1g position). **This measurement should be taken according to 2.4.4.7.i) in the "up" position.**

The lower fairing should incorporate a maximum of two holes of 25 mm. These holes must remain closed in dry conditions and must be only opened in wet race conditions, as declared by the Race Director.

10. MotoGP Aero Body Approval.

The MotoGP Aero Body is defined as:

- i) The portion of the motorcycle bodywork that is directly impacted by the front airflow while the motorcycle is moving forward, and is not in the wake (ie. aerodynamic “shadow”) of the rider’s body or any other motorcycle body parts i.e. the two separate components Front Fairing and Front Fender, as per the diagrams the Appendix, General: Fig. 5, Fig. 6. Front suspension attachments complying with 2. are not part of the Aero Body. For the avoidance of any doubt:
 - a) parts, or portions of them, that are not belonging to the Front Fairing or the Front Fender, but still are directly impacted by the airflow while the motorcycle is moving forward, and are not in the wake (ie. aerodynamic “shadow”) of the rider’s body or any other motorcycle body parts (e.g. handguards), and
 - b) parts that, even if not directly impacted by the front airflow, are located ahead of the rider and have an horizontal cross-section that is tapering towards the rear of the motorcycle (e.g. drop-shaped fork covers), with the exception of front suspension attachments, or portion of, that are contained in the volume specified in 2., will automatically be considered as parts of the Aero Body, and collectively called “Other Aero Body parts”.
- ii) All the parts that in a side view belong, totally or in part, to area “A” and having design elements and/or portions that are not strictly necessary to let the rider control the machine (accelerating, braking, steering, gearshifting), or connect the two wheels with proper stiffness, allowing relative motion (suspension, steering), regardless they are structural (e.g. a monocoque swingarm that is shaped for extra functions) or not (e.g. a swingarm attachment) as per the diagrams the Appendix, General: Fig. 5, Fig. 6., with the exception of sensors, wiring harness, rear brake cooling ducts, and exhaust pipes and/or exhaust pipe covers that are contained in a 20 mm offset of the outer exhaust pipes surface.

Area “A” is defined in a side view as a rectangular area extending between the swingarm pivot center to the back of the rear wheel, and between 50 mm to the ground (see 5.) and the rear wheel spindle center.

Parts of the Aero Body belonging to “Area A” can be moved without the need of a new homologation, in order to restore a safe clearance or to eliminate interference with other parts that have been moved in adjusting the motorcycle setup, on the condition that they are just re-positioned without modification. However, removing any parts of the Aero Body belonging to “Area A” will require a new homologation.

Only the external shape, excluding the windscreen, is defined in this regulation, so the following parts are not considered as part of the Aero Body: windscreen, cooling ducts, fairing supports, and any other parts inside the external profile.

- a) The Aero Body is approved and samples or detailed drawings (to the satisfaction of the Technical Director) must be delivered to the Technical Director prior to the close of technical control at the first event of the season. The drawings must show the position of the “Aero Line”. The aero line is the horizontal line that in side view is 300mm above a reference line that is the horizontal line touching at least one point of the lower body profile and leaving all the side surfaces of the Aero Body above (refer to Appendix, General: Fig. 6).
- b) Approval is on a “per-rider” basis, so different riders with the same motorcycle manufacturer may have different Aero Bodies.
- c) One update per component of the Aero Body (Front Fender, Front Fairing, Area “A” and Other Aero Body parts) is allowed at any time during the season, for each rider. Samples or drawings of the updated items must be delivered to the Technical Director prior to the updated items being used on track.

To this extent area “A” and the Other Aero Body parts are considered as one single component each, so any change in one of them is considered as an update, regardless the number of parts that are changed, and including adding/removing parts; the same is for the Front Fender and the Front Fairing, regardless the number of components they are made of (e.g. if a motorcycle has a swingarm attachment and a rear mudguard both belonging to Area “A”, then if the swingarm attachment is changed or removed, it won’t be possible to update the rear mudguard later on during the season).

The update may consist of using a previously approved Aero Body component from the same manufacturer. Both the updated and the original Aero Body may be used (ie. each rider may have a maximum of 2 Aero Bodies available), The 4 components of the Aero Body (Front fairing, Front fender, Area “A”, and Other Aero Body parts) may be mixed, eg. the initial Front Fairing may be used on the motorcycle together with either the initial or the updated Area “A” (and vice versa). No component of the Aero Body is compulsory, but fitting or not fitting a component is considered as a change in the Aero Body (e.g. removing the Front Fender or a swingarm attachment requires updating).

- d) Each approved Aero Body component (Front Fairing, Front Fender, Area “A” and Other Aero Body parts) may consist of different parts, all of which must be assembled and used together on the motorcycle. The parts of each component are considered together and different options of the same part are not allowed.
- e) At the same time of the Aero Body approval according to clause a), or update according to clause c), and as an exception to d), it is possible to have the following parts approved as “add-ons”:
 - i) Hand guards. The hand guard profile must mirror the existing fairing profile at the point of attachment, and hand guards will have the sole objective of increasing the surface area around the rider’s hands, so as to provide extra protection from rain.

- ii) Rear tyre water spoiler. A spoiler that is not wider than the parts it attaches to, and in a side view is located in area “A”, ahead of the rear wheel center.

The use of “add-ons” is allowed only in the case that at least one rain tyre is fitted on the motorcycle. If such parts/ devices are not specifically approved as “add-ons” they will be considered as parts of the Aero Body and must therefore always be on the motorcycle, according to clause d); it is allowed to remove parts of the Aero Body to replace them with the “add-ons” (e.g. it is allowed to remove a swingarm attachment and replace it with a rear tyre water spoiler, if it shares the same attaching points).

- f) Material may be removed by grinding, drilling and cutting only from Aero Body parts, under the condition that it does not affect or change any profile of the approved design. The sole purpose of material removal shall be providing additional clearance and/or cooling where necessary, and all possible effort shall be made to have these as the only effects, at the sole discretion of the Technical Director. To this extent, removing or not mounting portions that are designed as parts of the same Aero Body component is not considered as “material removing” and is therefore not allowed according to clause d).

As examples, and for the avoidance of any doubt: it is allowed to trim the Front Fairing in case of interference with a new chassis design (clearance), it is not allowed to trim the profile of a lower swingarm attachment or change the homologated design to restore the minimum ground clearance in case the swingarm has been re-designed, and the attachment is moved down as a consequence of the new design.

- g) Material may not be added to the Aero Body, and the shape cannot be altered in any way.
- h) Manufacturers in their first season of participation in the MotoGP class are permitted to make an unlimited number of updates to Aero Body components as described in clause c., provided each Aero Body design complies with the rest of these regulations.

- i) Modifications to the Aero Body below the Aero Line in a side view are allowed, except for parts on the outer surface of a double-walled design, and provided that:
 - The only purpose of the modifications is to provide clearance from interfering covered motorcycle parts (eg. exhaust pipes, engine cases, etc.), and the design is such that providing clearance is the only effect, at the sole discretion of the Technical Director. Interference in absence of the modification shall anyway be proven to the Technical Director to his satisfaction.
 - The new outer body surface is no more than 30 mm offset from the existing outer surface.
 - The total amount of the modified surface (ie. the sum of all the changes to the left and right sides) is less than 300 cm² in side view.
- j) All leading edges must have a minimum radius of 2,5 mm for safety.
- k) Different parts of the Aero Body can be updated in different times of the season, and the initial and updated versions of the different parts can be mixed and matched.
- l) At certain circuits, for safety reasons it will be permitted for teams to remove the side pods from the aero body. The conditions are that all side pods are removed, and it does not affect the external profile of the homologated fairing. All modifications must be preapproved by the Technical Director. Race Direction will be responsible for determining and announcing if this concession will apply at any other events, based on adverse weather conditions.

Circuits where this condition currently applies:

1. Phillip Island



2.4.4.8 **Wheel Rims**

1. Permitted wheel rim sizes are as follows:

	<u>Front</u>	<u>Rear</u>
MotoGP	4.00” max. width 17” diameter only	6.25” max. width 17” diameter only

In the MotoGP class, each manufacturer is restricted to two different widths of front wheel rim, and one width of rear wheel rim, within the maximum widths noted above. All MotoGP wheel rims must be 17” (17 inches) diameter.

Each MotoGP manufacturer must notify the Technical Director of their selected wheel sizes no later than the close of technical control at the first race of each season.

2. In all classes, composite construction wheels (including carbon fibre reinforced, glass fibre reinforced, and similar) are not permitted. The permitted materials for wheel construction are magnesium and aluminium alloys.
3. All wheels must conform to the requirements published in the document “FIM Requirements for Grand Prix Wheels 2018”, and be certified by the wheel manufacturer. Wheels approved before the end of 2017 under the previous FIM standard (2015) are permitted to be used until the end of their service life.

(refer to <http://www.fim-live.com/en/library/> Motorcycle Parts Testing Standards)

The following procedures will apply:

- A sample wheel of each different design or model must pass all the tests described in the FIM requirements document.
- Every wheel of this design or model must be identified with the model code and a unique serial number, by a permanent marking, which must be visible with the tyre fitted.

MotoGP

- Each individual design or model that has passed the tests will be certified by an official document issued by the wheel manufacturer stating that the wheel conforms to the FIM Requirements for Grand Prix Wheels 2018.
- A copy of this compliance certificate must be sent to the MotoGP Technical Director (Danny Aldridge danny@irta.org.uk) and to the Racing Homologation Programme (frhp@fim.ch). A copy of this certificate must also be provided to customers together with approved wheels purchased.

2.4.4.9 Tyre restrictions

1. In all classes, only tyres from the Official appointed tyre supplier for each class may be used in a Grand Prix event, including official tests.

The Official tyre supplier will provide sufficient tyres for all riders entered in the event.

The tyre specifications available at each event will be determined by the tyre supplier. Identical tyres of each specification for the relevant class and/or designation must be available to every rider, and the total quantity of tyres will be the same for every rider. New tyre specifications will not be included in the race allocation until they have been tested during an Official test.

The Official Tyre Supplier will remain at all times the owner of all tyres supplied to the teams. The teams are required to return all tyres to the Official Supplier at the end of each event or test.

Tyres must be used according to the advised parameters which are agreed in consultation with the official tyre supplier, the Technical Director and the Organisers. Parameters may include pressure, temperature, maximum number of laps per tyre, time/temperature on tyre warmers, or other usage guidelines, **including that allocated tyres must be mounted and dismounted from wheels only by the official tyre supplier.**

Teams must comply with requests by the Technical Director, his staff, and the official tyre supplier to check tyre parameters at any time, which may include tyre pressure and/or temperature data from the datalogger.

The use of any device on the wheel to adjust the tyre pressure whilst on track is prohibited.

The use of Tyre Air Pressure Sensors (TAPS) on all wheels, front and rear, is mandatory in the MotoGP class, including logging of TAPS data at all times.

Any riders or teams found to be using tyres outside of these operating parameters will be subject to penalties. The decision of the Technical Director, in consultation with the official tyre supplier, will be final.

2. During the two days prior to the start of official practice, the tyre supplier must provide to the Technical Director details including specifications, quantities and the identification markings of the tyres available for that event.

The Technical Director and staff will allocate the tyres available for the exclusive use of each entered rider (as described in Article 2.4.4.9.3). The allocation of individual tyres will be made on a random basis with no involvement of any representative from the tyre supplier, teams or riders.

In the case of a rider change after the final tyre allocation has been made, the replacement rider must use only the tyres allocated to the original rider.

3. For Grand Prix race events, each rider will be restricted in the quantity and specification of tyres that they may use at a single race event as follows:

A. MotoGP Class

The quantity, specification and allocation of tyres will be determined by the official tyre supplier in consultation, and by agreement with, the Organisers and the Technical Director. Due to ongoing technical developments and changing conditions, the quantity, specification and allocation of tyres may be varied from time to time by mutual agreement.

The base allocation, subject to mutually agreed changes, is as follows:

During all practice sessions, warm up and the race a maximum of 22 slick tyres, specifically:

Front slick tyres:

10 in total, comprised of:

up to a maximum of 5 of specification A *

up to a maximum of 5 of specification B *

up to a maximum of 5 of specification C *

The rider's final selection of front tyre specification for the following day must be informed to the tyre supplier no later than 2 hours after the end of the current day's practice. The Technical Director will notify teams in advance of any change to this deadline, due to changes in the practice schedule.

If no specification selection is received by this time the allocation will be determined by the tyre supplier, respecting the maximum quantities above.

This allocation will be final and no changes are permitted after this time. In the case of a rider being replaced after this tyre selection deadline, the replacement rider must use only the tyres allocated to the original rider.

Rear slick tyres:

12 in total, comprised of:

up to a maximum of 6 of specification A *

up to a maximum of 5 of specification B

up to a maximum of 4 of specification C

* Riders who participate in both Q1 and Q2 qualifying sessions (maximum 2 riders) will be allocated one extra front tyre of their preferred specification (therefore, if taken, a maximum of 6 of that specification) and one extra rear slick tyre of specification A (highest grip level) after Q2 (therefore, if taken, a maximum of 7 of specification A).

In the case that Q1 and Q2 sessions are both declared wet by the Race Director, the extra tyres allocated will be rain tyres (of the rider's preferred specification for both front and rear tyre). In the case that Q1 and Q2 sessions are declared as different weather **conditions** then no extra tyre will be allocated.

The rider's final selection of rear tyre specification for the following day must be informed to the tyre supplier no later than 2 hours after the end of the current day's practice. The Technical Director will notify teams in advance of any change to this deadline, due to changes in the practice schedule.

If no specification selection is received by this time the allocation will be determined by the tyre supplier, respecting the maximum quantities above.

This allocation will be final and no changes are permitted after this time.

In the case of a rider being replaced after this tyre selection deadline, the replacement rider must use only the tyres allocated to the original rider.

At the sole discretion of the official tyre supplier, an extra specification (front and/or rear) may be supplied in order to cover all possible track and weather conditions. This specification will be allocated only at the discretion of the tyre supplier (in consultation with the Race Direction and the Technical Director). If allocated, it will be a maximum of 3 tyres per rider and will replace 3 unused tyres from the original allocation.

Rain tyres

For practice sessions, warm up and the race a standard allocation of 13 rain tyres, specifically:

Front rain tyres:

6 in total, of two specifications

Rear rain tyres:

7 in total, of two specifications

In the case that any 4 of the 5 sessions, being FP1, 2, 3, 4, and one Qualifying session (excluding warm-up), are declared wet by the Race Director, one more set (1 x front and 1 x rear) of rain tyres will be allocated to every rider, and the allocation automatically becomes:

7 Front rain tyres, and
8 Rear rain tyres.

Due to the variation in track surface conditions between circuits, the quantity of each rain tyre specification will be decided by the official tyre supplier, prior to each event.

The official tyre supplier will determine the criteria for the classification of tyres as Slick or Rain. In case of dispute the decision of the Technical Director will be final.

4.
 - a) Riders may use only the tyres allocated for his/her exclusive use (as described in Article 2.4.4.9.3).
 - b) Tyres will be individually identified and may not be exchanged between riders, including between team-mates, and may not be exchanged by the tyre supplier after allocation, except with the permission of the Technical Director (for example, under Article 2.4.4.9.8).
 - c) Tyres may not be materially altered in any way after allocation, such as hand-cutting and any other action or treatment that will alter the tyre's performance (with the exception of the use of tyre warmers), unless deemed necessary by the tyre manufacturer. Such alterations may be performed only by or under the supervision of the tyre manufacturer's representative, and shall be made available equally for all riders.
5. Each allocated tyre must be marked with its specification and carry an official identification label with a unique serial number. In the event of damage to or loss of the official label, the tyre company must be able to satisfy the Technical Director as to the tyre's specification. Tyres may be checked for compliance at any time, before or after use.
6. In the case of an interrupted race, a rider must use tyres from his allocation of marked tyres for the restarted race.
7. In the unlikely event of a tyre being accidentally damaged before it is used (for example during the fitting process) and deemed to be unusable by the Technical Director, it may be replaced with a tyre of the same specification with the permission of the Technical Director. Such replacement tyres will be marked and included in the allocation of the rider concerned. The damaged tyre will be removed from the allocation and may not be allocated again.

Once it is used (i.e. has exited pit lane) a tyre may not be replaced because of damage or defect, except if all the following conditions apply:

- a) The tyre supplier must confirm to the Technical Director that the damage is solely due to a manufacturing defect or fitting problem (i.e. out of the team's control), and not due to any other reason such as impact, cut, abrasion or accident.
- b) The tyre supplier must confirm to the Technical Director that the damage is significant enough to deem the tyre unsafe to use.
- c) Tyres that are deemed to have covered more than 2/3 of race distance will not be considered for replacement. The determination of distance covered will be the sole decision of the Technical Director in consultation with the tyre supplier, and the team may be required to submit information such as lap charts and logger data to support a claim.

In determining whether a replacement will be allowed the decision of the Technical Director will be final.

- d) If a replacement tyre is granted, it must be of the same specification as the damaged tyre and selected at random by the Technical Director and/or his staff.
8. Should an exceptional and unpredictable safety problem arise for the tyre supplier during an event, so as to prevent riders from safely competing in the race, then the tyre supplier must inform the Technical Director and Race Direction of the problem as soon as possible.

A re-allocation of suitable tyres may be made under the supervision of the Technical Director. Such allocated tyres will be the same specification(s) and quantities for all riders, the quantity being determined by the tyre supplier in consultation with the Technical Director.

9. Tests, MotoGP Class:

This article refers to Official tests. For private tests, refer to Art. 1.15.1.1.C Test Tyre Allocation for details of tyre specifications available.

A. For official Post-Race tests of 1 day duration, each rider will be restricted in the quantity and specification of tyres that they may use at a single test event as follows:

During all practice sessions, 8 slick tyres, specifically:

Front slick tyres:

4 front tyres chosen from the specifications available, with a maximum of 3 tyres of any one specification.

Rear slick tyres:

4 rear tyres chosen from the specifications available, with a maximum of 3 tyres of any one specification.

During all practice sessions, 4 rain tyres, specifically:

Front rain tyres:

2 tyres chosen from the specifications available.

Rear rain tyres:

2 tyres chosen from the specifications available.

In addition each rider may use 1 set of new slick tyres (1 front + 1 rear) and one set of new rain tyres (1 front + 1 rear) retained from their allocation for the preceding event.

In addition, any used tyres that are still mounted on wheels from the preceding event may be used. The team must inform the tyre supplier which tyres, if any, they wish to retain for the test within 2 hours of the preceding race finish.

- B. For official Winter or post-race tests of 2 days (or more) duration,
each rider will be restricted in the quantity and specification of
tyres that they may use at a single test event as follows:

During all practice sessions on Day 1, a maximum of 8 slick tyres,
specifically:

Front slick tyres:

4 front tyres chosen from the specifications available, with a
maximum of 3 tyres of any one specification.

Rear slick tyres:

4 rear tyres chosen from the specifications available, with a
maximum of 3 tyres of any one specification.

During all practice sessions on each additional day, a maximum of
6 slick tyres, specifically:

Front slick tyres:

3 tyres chosen from the specifications available, with a maximum
of 2 tyres of any one specification.

Rear slick tyres:

3 tyres chosen from the specifications available, with a maximum
of 2 tyres of any one specification.

During all practice sessions over the 2 (or more) days of the test,
a maximum of 4 rain tyres per day, specifically:

Front rain tyres: 2 per day chosen from the specifications available.

Rear rain tyres: 2 per day chosen from the specifications available.

- C. At any official Post-race or Winter test, the tyre supplier may choose to allocate extra tyres with a different specification. Such extra allocation will be determined solely by the tyre supplier.

The same quantity of identical specification tyres will be allocated to at least all permanent MotoGP class riders contracted to factory teams at the test.

When a new specification tyre is to be introduced, the tyre supplier should inform all teams at least one month in advance for winter tests and 2 weeks in advance for post-race tests.

2.4.4.10 Numbers and Backgrounds

1. The racing number must be affixed to the front of the motorcycle fairing in a central position. Rear or side numbers are optional.
2. Numbers should be a minimum height of 140 mm.
3. Numbers must be easily legible, in a clear simple font and contrast strongly with the background colour.
4. Backgrounds must be of one single colour over an area large enough to provide a minimum clear area of 25 mm around the numbers.
5. In case of a dispute concerning the legibility of numbers, the decision of the Technical Director will be final.



2.4.5 General

2.4.5.1 Fuel and Oil

- 1. All motorcycles must be fuelled with unleaded petrol, which must comply with the FIM Grand Prix specification for each racing class.
- 2. Unleaded petrol will comply with the FIM Grand Prix specification if:
 - a) It has the following characteristics:

Property	Units	Min.	Max.	Test Method
RON		95.0	102.0	ISO 5164
MON		85.0	90.0	ISO 5163
Oxygen	% (m/m)		2.7	ISO 22854
Benzene	% (v/v)		1.0	ISO 22854
Vapour Pressure (DVPE)	kPa		90	EN 13016-1
Lead	mg/L		5.0	EN 237
Density at 15 °C	kg/m3	720.0	775.0	ASTM D 4052
Oxidation Stability	minutes	360		ASTM D 525
Existent gum	mg/100 mL		5.0	EN ISO 6246
Sulphur	mg/kg		10	ASTM D 5453
Nitrogen	% (m/m)		0.2	ASTM D 4629
Copper Corrosion	Rating		Class 1	ISO 2160
Distillation:				
At 70 °C	% (v/v)	22.0	50.0	ISO 3405
At 100 °C	% (v/v)	46.0	71.0	ISO 3405
At 150 °C	% (v/v)	75.0		ISO 3405
Final Boiling Point	°C		210.0	ISO 3405
Residue	% (v/v)		2.0	ISO 3405
Olefins(*)	% (v/v)		18.0	ISO 22854
Aromatics(*)	% (v/v)		35.0	ISO 22854
Total di-olefins	% m/m		1.0	GCMS / HPLC GCMS / HPLC
Appearance		clear and bright		visual inspection



All test methods include a precision statement. In cases of dispute, the procedures for resolving the dispute and interpretation of the results based on test method precision, described in ISO 4259, shall be used.

- b) The total of individual hydrocarbon components, containing only hydrogen and carbon, present at concentrations of less than 5% m/m must be at least 30% m/m of the fuel.

Compliance with the compositional regulation is calculated on the following basis:

$A = 100 - B - C$

where:

A is the total concentration (in % m/m) of individual hydrocarbon components present at concentrations less than 5 % m/m,

B is the total concentration (in % m/m) of oxygenates present in the fuel, and

C is the total concentration (in % m/m) of individual hydrocarbon components present at concentrations greater than 5% m/m.

The test method will be gas chromatography.

- c) The total concentration of naphthenes, olefins and aromatics in each carbon number group will not exceed the limits given in the following table.

% m/m	C4	C5	C6	C7	C8	C9+
Naphthenes	0	5	10	10	10	10
Olefins	5	20	20	15	10	10
Aromatics			1.2	35	35	30

Bicyclic and polycyclic olefins are not permitted. The fuel must contain no substances which are capable of exothermic reaction in the absence of external oxygen.

- d) Only the following oxygenates will be permitted:

Methanol, Ethanol, Iso-propyl alcohol, Iso-butyl alcohol, Methyl tertiary butyl ether, Ethyl tertiary butyl ether, Tertiary amyl methyl ether, Di-isopropyl ether, n-Propyl alcohol, Tertiary butyl alcohol, n-Butyl alcohol, Secondary butyl alcohol.

- e) Manganese (<1 mg/L), lead (<5 mg/L), iron (<5 mg/L) and nickel (<5 mg/L) additives are not permitted above these limits.

4. Implementation of the fuel regulation

In the MotoGP class when a rider taking part in a meeting is under contract or agreement for the exclusive use of a certain brand of petrol or oil, the Organisers must give free access to the circuit for that fuel or oil.

Any final dispute will be settled in accordance with the FIM Grand Prix Disciplinary and Arbitration Code.

5. Fuel Approval

1. All fuel in use in the Championship must be approved prior to the race in which the fuel is to be used. Fuel companies supplying petrol to participating teams must submit ten litres (2 x 5 L) to the laboratory appointed by the FIM/Dorna for analysis in accordance with the specification. Providing the petrol is within the specification, a certificate containing a test report number will be issued. The test report number must be given to the appropriate teams before they take part in a race.
2. During Thursday's technical control, each team will declare the certificate test report numbers corresponding to the petrol to be used. This information will be entered in the Technical Control Book of each motorcycle at every Grand Prix.

Therefore, the fuel which is to be used must be approved by the Thursday afternoon before the race in which the fuel is to be used.

3. When a fuel sample is requested at any Grand Prix Circuit, either during practice, warm up or following the race, the certificate test report numbers corresponding to the petrol used must be declared to the Grand Prix Technical Director by the team. Failure to provide the correct number may result in a penalty.
4. Each fuel Company will be responsible for payment to the laboratory for these batch analyses costs and establishment of the basic fingerprints.

6. Fuel Sampling and Testing

1. The Grand Prix Technical Director will appoint a senior Technical Scrutineer to take responsibility for the administration and supervision of the fuel sampling procedure.
2. Motorcycles selected for fuel controls will usually be amongst the first three finishers, and will be directed to the “parc fermé” for technical controls.
3. Other finishers may be chosen at random for fuel controls. A Technical Scrutineer will be posted at the entrance to the pit box of the selected rider(s) whose machine must immediately accompany the Technical Scrutineer to the technical control area or “parc fermé”.
4. The fuel to be tested will be transferred into two bottles, “A” and “B” identified by reference to the rider, team and machine from which the sample was taken. The bottles will be closed, sealed and labelled by the Technical Director and/or Technical Scrutineer.
5. Only new bottles will be used for the fuel samples and only new materials will be used to transfer the fuel.
6. The Fuel Sample Declaration form will be filled out immediately, containing all necessary information, including the riders and machines identity, date and place of fuel sampling. A responsible team member will sign this declaration, after verifying that all the information is correct.
7. Sample “A” will be sent to the official appointed laboratory, accompanied by a copy of the Fuel Sample Declaration form. The fuel sample will be compared with the approved petrol. If necessary the concentration of other elements, including lead, manganese, iron, nickel, nitrogen and oxygen may be measured at the request of the Technical Director to ensure that octane and power boosters have not been added.

If any observed deviations indicate that they are due to mixing with one other fuel, which has been approved by the FIM/Dorna for use by the team, the fuel sample will be deemed to comply, provided the fuel sample still falls within FIM Grand Prix specification as described in Article 2.4.5.1.2.

Costs for the analyses of sample “A” will be paid by FIM/Dorna.

8. Sample “B” will be handed over to the FIM designated storage facility for safeguarding in case of protests and/or requirement of a counter analysis by the appointed laboratory. Costs for the analyses of sample “B” will be paid by the team concerned.
9. Both samples will be transported by an authorised courier.
10. The laboratory must deliver the results of the fuel sample analyses to the Grand Prix Technical Director, with a copy to the FIM MotoGP Stewards, as soon as possible after receipt of the samples.
11. In the case of non-conformity, the Technical Director must notify, as soon as practical after receipt of the results, the FIM MotoGP Stewards, the Grand Prix Race Direction and the rider/team representative concerned.

Within 48 hours of the receipt of the notification of the results of the laboratory test of sample “A”, the team must notify the FIM MotoGP Stewards and the Technical Director if counter-expertise is required (or not required) for sample “B”.

The FIM MotoGP Stewards Panel will take a decision at the Grand Prix event immediately following the notification of the results of the final expertise. Any appeal against the decision of the FIM MotoGP Stewards Panel will be heard by the FIM Appeal Stewards appointed for the Grand Prix event at which the FIM MotoGP Stewards Panel decision is taken.

If there is no more Grand Prix following the notification of the results of the final expertise, the FIM MotoGP Stewards Panel will take a decision as soon as practical. Any appeal against the decision of the FIM MotoGP Stewards Panel will be heard by the FIM Appeal Stewards appointed by the FIM for this specific task.

12. The director of fuel analysis at the official laboratory must confirm to the Technical Director that the identification and the seal status of the “B” sample is correct before any B sample analysis is carried out.
13. Failure of the sample to comply to approved petrol and/or the addition of octane and power boosters, as described in Article 2.4.5.1.6.7, will automatically result in the disqualification of the competitor from the entire meeting.

The result of the competitor's fuel sample analysis ("A" or "B" sample) more favourable to the competitor will be taken into account.

7. Fuel Temperature

For the MotoGP race, no fuel on the motorcycle may be more than fifteen degrees C (15°C) below ambient temperature. The use of any device on the motorcycle to artificially decrease the temperature of the fuel below ambient temperature is forbidden.

For the purposes of this regulation an Official Ambient Temperature will be declared and displayed on the timekeeping monitors 75 minutes before the start of the MotoGP race.

Each team will be assigned a technical scrutineer 75 minutes before the start of the race. The scrutineer is authorized to test all fuel before it is transferred to the motorcycle fuel tank.

Before filling, all of the fuel storage and transfer containers and the motorcycle fuel tanks may not be more than 15°C below the official ambient temperature.

Only the officially-supplied approved containers may be used to store fuel immediately prior to being transferred to the motorcycle. These containers and any fuel they contain must always be available for the scrutineer to test during the hour preceding the race.

- Containers must be approved and marked by the Technical Director at Technical Control before the first race of the season.
- Each team is allowed a maximum of two official approved fuel containers per rider.
- Other than separate external insulation, no devices to control the container temperature are permitted. Specifically no device capable of lowering the fuel temperature may be used.

When it has been confirmed that the fuel is within the allowed temperature range, the team may transfer the fuel to the motorcycle fuel tank. Only fuel from the approved and temperature-checked container may be used in the motorcycle, including when the team wishes to add, change or top-up the fuel.

8. Fuel Handling Safety

- The use of anti-static mats and grounding wrist straps is mandatory when filling fuel containers used for transferring fuel to **and from** motorcycles.
- The use of approved fuel fillers/fuel dumps is mandatory when adding **or removing** fuel to/from motorcycle fuel tanks.
- All fuel handling equipment must be approved by the Technical Director.

2.4.5.2 Rider's Safety Equipment

1. It is compulsory that each contracted rider must begin each race event with at least two complete sets of undamaged safety equipment. A complete set of safety equipment shall contain:
 - Helmet
 - Leather Suit, 1-piece
 - Gloves
 - Boots
 - Back Protector
 - Chest Protector

The equipment must be worn, correctly fastened, at all times during on-track activity.

2. Safety Equipment Control

- a) At Technical Control at the first race of the season, one complete set of undamaged safety equipment (as listed in Art. 2.4.5.2.1) must be presented and checked for the following:
 - Helmet: FIM Homologation Label indicating valid FIM homologation.
 - Leather Suit, Boots, Gloves: the model names of each of these items must correspond to the Self Certifications previously supplied to the Technical Director.
 - Back Protector: a marking indicating certification to EN1621-2:2014 or to prEN1621-2:2010.
 - Chest Protector: a marking indicating conformity with the standards specified in 2.4.5.2.3.c.v) below.



- b) At any time during the season, the Technical Director may request a piece of rider’s equipment in order to check that it meets the requirements listed in Art. 2.4.5.2.3. The item of equipment will be sent to the official appointed laboratory for testing. Supply of equipment and test results as follows:
- The manufacturer of the equipment may be asked to supply a duplicate item of equipment for testing.
 - Equipment damaged after an accident may be taken and tested on an undamaged portion.
 - In the event that the item tested fails to meet the required standard, the manufacturer may request a further test, at their cost, on a duplicate item of used equipment.
 - In the event that the first test and/or optional retest are still negative, the Self Certification provided by the manufacturer will be suspended and the manufacturer shall have 30 days to rectify the problem and demonstrate this.
 - In the event that the problem is not rectified in this time, the manufacturer shall not be permitted to supply any new equipment of the failed type.

3. FIM Rider’s Equipment Minimum Requirements (REMR)

a) Standards for Helmet and Visor

Only FIM homologated helmets according to FRHPhe-01 (with a valid FIM Homologation Label) will be allowed.

A list of FIM Homologated helmets is available on www.frhp.org.

FRHPhe-01 (FIM)	
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- Disposable visor “tear-offs” are permitted.

b) Certification for Leather Suit & Airbag system, Gloves, Boots, Back Protectors

All rider's safety equipment must comply with the requirements detailed in Art. 2.4.5.2.3.c) Sections i to vi, below. The following procedures will apply:

- A sample of each different design or model must pass all the tests described in the FIM Standards, Table 1 below, or in the case of Airbag systems, the FIM Requirements for Grand Prix Airbags 2018.
- Every example of this design or model must be identified with the model code by a permanent marking.
- Each individual design or model that has passed the tests will be self-certified by the manufacturer, using the official document, stating that the item conforms to the FIM requirements.
- A copy of this compliance certificate must be sent to the MotoGP Technical Director (Danny Aldridge danny@irta.org.uk) and to the FIM Racing Homologation Programme (frhp@fim.ch).
- For leather suits only, the manufacturer must complete and maintain the "Riders Race Suit Database" file for each of their riders.
- This database must be submitted to the MotoGP Technical Director, and updated each time a leather suit is supplied to or withdrawn from a rider.
- The Technical Director and the rider also have the right to withdraw a race suit from the database.

c) Standards for Leather Suit, Gloves, Boots, Back & Chest Protectors

i) Leather Suit

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 1.

- The use of abrasion-resistant stretch material is permitted up to a maximum of 50% of the surface area, provided that the requirements of Table 1, column 2 are met.
- The use of sliders (specific parts of the riders safety equipment, either permanently fixed or removable, intended to make regular contact with the track surface to assist the rider while cornering), is permitted on the knees, elbows or any other parts of the race suit, where it is deemed necessary. They must not be manufactured from or contain any material that when in contact with the track surface may cause visual or other disturbance to other riders.
- Shall contain armour certified to EN1621-1:2012 in the shoulders, elbows, knees, and legs.
- It is mandatory for the leather suit to be fitted with an Airbag system, with the following requirements:
 - All Airbag systems must be approved according to clause b), above.
 - Every rider must start each track session with a functional Airbag system. Once the airbag has been deployed, the responsibility for continuing the practice or race rests with the rider (For the purposes of this regulation, MotoGP FP4, QP1, QP2 are considered as one track session).
 - For substitute or replacement riders, the use of an Airbag system is recommended for their first event of the season, and is compulsory for any further events of that season.
 - For MotoGP Wild Card riders the use of an Airbag system is compulsory. Wild Card riders equipment must be presented to Technical Control for inspection prior to the start of the event.

ii) Gloves

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 3.
- Shall have a cuff length sufficient to overlap the leather suit by at least 50 mm.
- Shall have a means of fastening to secure them to the hand (an elastic closure alone is not acceptable).
- Shall have suitable knuckle protection.

iii) Boots

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 4.
- Flexing zones are permitted up to a maximum of 40% of surface area, provided that they comply with the requirements of Table 1, column 5.
- Shall have a minimum height sufficient to overlap the leather suit by at least 70 mm.
- Shall have a means of fastening to secure them to the foot (a slip-on boot is not acceptable).

iv) Back Protector

- Must be certified to EN1621-2:2014 or prEN1621-2:2010.
- May be full back or central back configuration.

v) Chest Protector

- Full chest protectors (protector designed as a single piece) and Divided chest protectors (protector designed in two separate halves) are permitted.
- All types of chest protectors (Full or Divided) must have a minimum protection area of no less than 230 cm².
- **Only protectors** in conformity with prEN1621-3 (level 1 or 2) are permitted.



vi) Marking

- When an equipment manufacturer has tested and proven that the safety equipment in question meets the relevant requirements in paragraphs i) to vi) above, and Table 1 below, they shall attach a permanent marking stating the model number of the product.
- The marking of race suits must additionally contain a unique serial number.

Table 1.
Material Properties

		1	2	3	4	5
TEST	Test Method	Suit Leather or main material	Suit Stretch Areas	Gloves Palm & Back Areas	Boots All Areas	Boots Flex Areas
Tear	ISO 3377-1 or EN388 (N)	≥50	≥50	≥30	≥100	≥60
Abrasion	EN388 (cycles)	≥600	≥400	≥300	≥800	≥500
Seam	EN13935-1 (Suit, Boot) EN13594 (Gloves)	≥12	≥12	≥8	≥15	≥15

4. Post-crash Riders Safety Equipment Check

After a crash the Technical Director may at his discretion request that the rider’s safety equipment is checked prior to the start of the following practice session, warm up or race.

In the event that any item of equipment is considered, by either the Technical Director or the representative of the manufacturer of the item, to be too damaged for use on track, the rider will be required to replace or repair the item before being permitted on track.

Any question concerning the condition and suitability for use of the riders safety equipment shall be decided by the Technical Director, who may consult with the manufacturers of the product before making a final decision.

2.4.5.3 Procedures for Technical Control

1. At each circuit an area must be designated as the Technical Checking Area. In this area, under the control of the Chief Technical Scrutineer and the supervision of the Technical Director, suitable equipment will be installed to conduct the various tests viz:
 - i) Equipment for measuring the noise of the motorcycle.
 - ii) Weighing scales with check weights for calibration purposes.
 - iii) Instruments for measuring engine capacity.
 - iv) Instruments and gauges as necessary for measuring other dimensions and criteria specified in the Technical Regulations.
2. The technical control procedure will be carried out in accordance with the schedule set out in the Regulations. The technical scrutineers must be available throughout the event to check motorcycles and equipment as required by the Technical Director.
3. Presentation of a machine will be deemed as an implicit statement of conformity with the technical regulations. Responsibility for the preparation of the machine to comply with all technical and safety regulations rests with the team.
4. A rider's presence at the initial technical control is not mandatory, except in the case of the Moto2 and Moto3 classes when the rider must be present for a weight check together with his helmet and all protective clothing.
5. Motorcycles will be inspected under the name of the team and at the initial technical control each motorcycle will be registered by the technical scrutineers who will prepare a technical control card to record technical specifications, check results and the riders in that team entitled to use the motorcycle.
6. At the initial technical control the technical scrutineers should inspect the motorcycle to record technical details including weight (plus rider weight in the Moto2 and Moto3 classes), noise level and may also check the motorcycle for technical compliance with other aspects of the Regulations, as requested by the Technical Director.

8. At each event, at the conclusion of technical control procedures prior to the first practice, the technical scrutineers will place a small sticker on the motorcycle indicating that it has been registered for use by the team's rider(s) for that race and passed the technical control procedures.
9. The Chief Technical Scrutineer will prepare a report on the results of technical control which will be submitted to the Event Management Committee via the Technical Director.
10. The technical scrutineers should re-inspect any machine that has been involved in an accident, and if necessary to issue a new technical control sticker for a rebuilt machine. This would normally be carried out at the pit of the rider concerned. The team has sole responsibility for any repairs carried out, and to determine when the machine is fit for further use.
11. The technical scrutineers must be available, based on instructions from the Technical Director, to re-inspect any motorcycle for technical compliance during the meeting or after the race and to supervise inspection of a motorcycle following a protest on a technical matter.
12. At the end of the race, the Chief Technical Scrutineer will ensure that the motorcycles placed in the first three positions, plus any other motorcycles designated by the Technical Director, are placed in the Check Area for a period of 60 minutes pending any protest.

The motorcycles may be checked for compliance with any of the FIM Grand Prix technical regulations, and any other technical requirement at the discretion of, under the control of and as requested by the Technical Director.

13. The Technical Director may require a team to provide such parts or samples as he may deem necessary.
14. In the case that a machine fails post-qualifying or post-race technical checks due to damage or technical issues on-track, the following protocol will apply, always at the sole discretion of the MotoGP Technical Director.

a) Machines under the minimum weight limit due to:

i) **Loss of fluid.**

- If the Technical Director has verified that there is physical evidence of fluid loss due to an incident or mechanical issue on track, he may approve the fluid to be replenished to the levels as declared by the Manufacturer at the start of the season.
- If it is necessary to replace a damaged part to accommodate the fluid (eg. radiator), this will be permitted only under the supervision of the Technical Director who will confirm that the new part is identical to the damaged part. In the MotoGP class, the Technical Director may require that the replacement part is taken from the rider's second machine.

ii) **Loss of material or parts.**

- If the Technical Director has verified that the machine has lost a part or material due to an incident or mechanical issue on track, he may approve the replacement of the part(s) with the following conditions:
- The Technical Director must verify that any new parts are identical to the original.
- In the MotoGP class the Technical Director may require that the rider's second machine be used as a reference, and replacement parts may be requested to be taken from this second machine.
- If the Technical Director determines that there is insufficient physical evidence to prove that a part or material is missing, then the original part must be found before it can be replaced.
- Missing ballast weights will only be permitted to be replaced if they are found and returned to Technical Control by the circuit officials.



- b) Machines exceeding the maximum noise levels:
- If the Technical Director is satisfied that there is sufficient physical evidence of damage or loss due to an incident or mechanical issue on track, he may approve the replacement of the missing or damaged exhaust parts, and the machine to be re-tested.
 - In the MotoGP class the Technical Director may require that the exhaust parts from the rider’s second machine be used for such replacement.

2.4.5.4 Noise Tests

1. Noise tests must be conducted in an open area with a space of at least 10 metres between the motorcycle being tested and walls or other obstacles. There should be a minimum amount of ambient noise in the area.
2. The measuring equipment must be calibrated prior to the test and recalibrated at regular intervals.
3. The measuring equipment should be placed 50 cm from the end of the exhaust pipe and at 45 degree angle to the pipe either to the side or above.
4. The maximum noise levels at all times are:

MotoGP: 130 dB/A

For convenience, the test may be conducted at a fixed RPM.

	1 cylinder	2 cylinders	3 cylinders	4 cylinders
MotoGP	5,500 rpm	5'500 rpm	5'500 rpm	5'500 rpm

2.4.6 Wild Card Technical Regulations

Wild Card entries are subject to all of the above MotoGP technical regulations, with the following conditions:

1. Each Wild Card entry is allowed a maximum of 3 engines for their exclusive use during each event.

MotoGP

2. Wild Card entries using machines from an MSMA manufacturer currently entered in the MotoGP class are subject to all technical regulations related to their specific manufacturer, including engine specification, ECU hardware and software, sensor approval (Art 2.4.3.5.3.c) and free device checking (Art. 2.4.3.5.d.iii).

Wild Card entries using machines from a manufacturer not currently entered in the MotoGP class are not subject to the regulations covering ECU hardware and software, dataloggers, sensors and free devices.

3. Wild Card entries must comply with the current bodywork regulations (Art. 2.4.4.7).
4. Prior to the close of Technical Control at the Wild Card's first event of the season, the manufacturer must provide the following information, to the satisfaction of the Technical Director:
 - Aero Body samples or drawings
 - **Engine specification**
 - Gearbox ratios
 - Wheel rim sizes
 - Schematic diagram of the fuel system
5. Riders Safety Equipment for Wild Card entries (Art. 2.4.5.2):
 - Any safety equipment which does not show an approved model number and serial number will be subject to approval for use by the Technical Director.
 - It is the responsibility of all wildcards to make sure that their airbag system meets the current FIM Regulations which must be presented to technical control along with all other safety equipment for inspection, prior to the start of the event.
 - The use of an Airbag system in the leather suit is compulsory.

2.5 Moto2 Class Technical Regulations

2.5.3 Engines

2.5.3.1 Engine Description

1. Engines may operate on the reciprocating piston four stroke principle only.

The normal section of each engine cylinder and piston in plan view must be circular. Circular section cylinders & pistons are defined as having less than 5% difference in the diameter measured at any two points.

2. Engines must be normally aspirated.
3. Cubic capacity of the engine will be defined by the swept volume of the cylinder, ie. the area of the bore of the cylinder multiplied by the stroke, multiplied by the number of cylinders.

No tolerance on capacities is permitted.

Engine capacity will be measured at ambient temperature.

2.5.3.2 Moto2 Engine Supply

1. Only engines from the official Supplier are allowed to be used. The term official Supplier shall refer to the engine producer and/or to the company nominated to perform such functions as engine assembling, rebuilding, maintenance, and logistics.
2. Sealed engines will be provided to each team, allocated on a random basis by the Technical Director and staff.
3. Security seals may not be removed or broken and the team may not open the engine, except to remove unsealed covers for maintenance as described in Art. 2.5.3.2.4) specifically the cam cover, cylinder head, cylinders, crankcase, may not be opened or removed.
4. Teams may only perform maintenance of parts specifically authorised by the Championship Organisers which does not involve removal of security seals. This includes change of oil and external items as detailed in the following articles including cooling, fuel and electrical systems, and clutch parts including plates, hubs, control mechanisms.

5. All other maintenance and repair, specifically that involving removal of security seals will be carried out by the official Supplier. Regular maintenance, rebuilding and replacement of engines will be at the sole discretion of the Championship Organisers, and on a schedule determined by them.
6. Engines returned for maintenance, repair or replacement must be in the original condition as delivered, that is with the original fittings in place as required by the Championship Organiser, which may include:
 - covers, cooling system including hoses and connectors, electrical system including wiring and connectors, clutch.
7. In the case of engine breakdown or damage, another engine may be allocated by the Technical Director. Such allocation can not be made during a Moto2 practice session or within 30 minutes of the pit lane being opened for the race sighting lap.

Engine Definition, Specification and Modification

8.
 - i) Use of the complete engine is mandatory, and it may not be modified in any way except as specifically described in these regulations, or as directed by the Technical Director. In the case of dispute over modifications, the decision of the Technical Director will be final.
 - ii) The engine design and specification will be determined by the official Supplier in consultation with the Organisers. The engine design and specification may be changed at any time with the agreement of both the official Supplier and the series Organiser. New technologies (for example; materials, cylinder head and valve design, valve operating mechanisms, alternative fuels, etc.) are encouraged provided they meet the Series' principle of cost reduction and long-term cost control, and are agreed by the official Supplier and series Organiser.
 - iii) The official Supplier may change the specification of individual parts from time to time, as is normal to improve reliability and function.
 - iv) All engines supplied to teams must be equal in specification and the engine performance, as measured by the official Supplier under their standard dynamometer conditions, must be within the tolerance range agreed by the Organiser and the official Supplier.

- v) A team may request a replacement engine on the grounds of substandard performance:
 - a) If the Technical Director is satisfied that there is clear evidence of an engine problem causing substandard performance a replacement engine may be issued under Art. 2.5.3.2.7 with the approval of Race Direction.
 - b) If the Technical Director determines that there is no clear evidence of an engine problem, the team may still request a replacement engine.

Such request must be made in writing to the Technical Director accompanied by a deposit of 7,500 Euros (seven thousand five hundred Euros) per engine paid to IRTA.

The engine may be replaced with the approval of Race Direction, and the original engine will be returned to the official Supplier to be tested under standard conditions by the official Supplier and the dynamometer report sent to the Technical Director.

If the engine is deemed to be within specified performance parameters and fit for use, the same engine may be returned to the team at a subsequent race and the team's deposit will be forfeited.

If the engine is deemed to be outside of specified performance parameters and not fit for use, the deposit will be returned to the team in full.

In the case where a team or rider forfeits a deposit for an unfounded engine change, each subsequent claim during the season by the same team and rider (including replacement riders) will attract an additional deposit of 2,500 Euros (two thousand five hundred Euros).

- vi) The complete engine ("engine" in these regulations) is defined as the supplied engine cases, covers and everything contained within, and including all external parts supplied by the official Supplier, including but not limited to:
 - a) Fuel system including airbox, air filter, fuel pump & regulator, throttle bodies, intake manifolds, air intake funnels, fuel injectors, fuel delivery lines hoses and breathers.

- b) Electrical system including generator, ignition coils.
 - c) Lubrication system including oil filter, oil cooler, oil pressure switch (or oil pressure sensor as approved by the Technical Director).
9. To ensure reliability and performance, the official Supplier does not recommend any changes to the engine. However at the Team's risk the following items may be replaced and/or modified:
- a) Coolant hoses and fittings may be changed to suit individual radiator designs. Where an inlet/outlet pipe fitting is changed it must have the same internal diameter as the original part.
 - b) The fuel delivery line between the fuel pump and the primary injectors may be modified to adjust the length and/or to fit a connector in-line.
10. The following external items may not be replaced, removed or modified, except if replaced with an original part due to malfunction or damage (as authorised by the Technical Director):
- a) Gearbox position sensor
 - b) Oil cooler (heat exchanger)
 - c) Oil filter
 - d) Oil pressure sensor
 - e) Gearbox output speed sensor
 - f) Water temperature sensor
 - g) Electrical cables and connectors supplied as part of the engine

Cooling System

11. Design and construction of the cooling system is free, provided it complies with Art. 2.5.3.2.9, Art. 2.5.3.2.10, and Art. 2.5.3.2.15 ensuring that the engine meets the operating parameters specified by the official Supplier (refer to the Appendix, Moto2: Fig. 5).
12. The standard engine oil cooler is mandatory, and additional oil coolers are not permitted.

Engine Use

13. The engine may be used only at official Moto2 events as defined by the Championship Organisers. Moto2 events include Official Tests and Grand Prix race events.

14. The Championship Organisers may require that engines are returned at the completion of certain events and/or maintenance period (Art. 2.5.3.2.5). This is at the sole discretion of the Championship Organisers, and Teams must comply with such requests.
15. The engine must be used at all times respecting the range of operating parameters provided by the official Supplier, and avoiding deliberate misuse. Refer to the Appendix, Moto2: Fig. 5.

2.5.3.5 Electronics

2. Tyre temperature/pressure sensors are permitted in all classes.

Moto2 Ignition and Electronics

11. Only the official Electronic ignition/fuel injection control unit (ECU, with built-in datalogger), Inertial Measurement Unit (IMU), Dashboard, and Switch Panel as supplied by the official Supplier are allowed, and any ECU used on a Moto2 machine at a GP event must be registered with the Technical Director.

This ECU must remain unmodified in hardware and software as delivered by the official Supplier, with the exception of the normal tuning adjustments allowed only by the standard software 'Setting Tool' supplied as part of the Moto2 Kit. The use of any additional device or module to modify the signals sent from the ECU to the actuators is forbidden. Injectors, bypass systems and ignition must be operated exclusively by the original and unmodified ECU signal.

13. The Technical Director may inspect all ECU hardware and software at any time, including access to all stored information. The Technical Director may require the team to change the ECU on any machine for another identical standard one at any time.
14. Design and construction of the wiring harness is free to accommodate the needs of different machine designs, provided it respects the official Supplier's wiring diagram. Only the standard ECU, Datalogger and junction units may be connected to the harness, and connection of the components listed in Art. 2.5.3.2.8 and Art. 2.5.3.2.10 is mandatory.

Datalogger

15. Only the standard Moto2 Datalogger system supplied within the official ECU approved by the Championship Organiser is allowed to be used at official Moto2 race and test events. No additional loggers are permitted as well as no other calibration and data logging/downloading tools (other than Sysma and Wintax from MMM). Analysing software/tools are free, and one will be supplied together with the ECU.
16. In order to ensure checking and monitoring of a safe and correct operation of the engine/chassis control strategies, logging and delivery of some channels is compulsory. A list of the compulsory channels is available from the Technical Director.
17. Other than the Mandatory use of the official ECU, IMU, Dashboard, Datalogger, Switch Panel, Gearshift load cell, Tyre pressure sensor, there are additional channels available for specific sensors.

No other sensors are permitted on the machine at official Moto2 events, and all free listed sensors are subject to the approval of the Technical Director. Refer to the Appendix, Moto2: Fig. 4, and to the updated list of approved dataloggers and sensors on the FIM website (<http://www.fim-live.com/en/library/>).

Note that following Art. 2.5.4.9.1) it is mandatory to log rear slick tyre pressure.

18. The throttle control valve must be operated exclusively by the ECU software, no other controls or strategies are permitted.

2.5.3.6 Fuel System

Moto2 class fuel system

6. Use of the fuel system (as described in Art. 2.5.3.2.8.vi) a) from the official Supplier is mandatory, and it must remain standard, as delivered by the official Supplier. The only modifications permitted are those specifically described in these regulations. The Technical Director may require the team to exchange any parts of the fuel system for another standard part, at any time.
8. Fuel Tank Design and construction of the fuel tank is free, within the constraints of the FIM Grand Prix Regulations, Art. 2.5.4.5. There are no capacity restrictions.

9. Fuel Delivery Hoses: Fuel delivery hose fittings must remain standard, as supplied. However it is permitted to fit quick -connectors (e.g. “dry-break” connectors) in the fuel lines.
10. Airbox: Only the standard airbox supplied by the official Supplier (including air filter) may be used. No modifications, alterations or additions to this airbox are allowed, except as described in Art. 2.5.3.6.11 below).

The air pressure sensor must be fitted in its original location. Refer to the Appendix: Moto2, Fig. 2: Ambient Air Pressure Sensor.

11. To ensure correct performance the official Supplier does not recommend any change to the airbox. However at the risk of the team, the following changes are allowed:
 - a) The transition duct; airbox to headstock, ahead of the air filter, may be changed to suit individual chassis designs.
 - b) A catch-tank may be fitted in the engine breather between the cam cover and airbox. The catch tank is solely for the purpose of collecting engine fluids, no other functions (such as pressure modification) are permitted and breather connections may only be directly between the cam cover, catch tank and airbox. The catch tank and connections must be visible for inspection at all times (that is, not permanently built into the chassis or other parts).

2.5.3.7 Exhaust

1. The outlet of the exhaust must not extend behind a line drawn vertically through the edge of the rear tyre.
2. For safety reasons the exposed edge of the exhaust pipe outlet must be rounded to avoid any sharp edges.
3. Variable length exhaust systems are not permitted.
4. Exhaust Gas Recirculation (EGR) systems are not permitted.

Moto2 class exhaust:

6. The design and construction of the Moto2 exhaust system must conform to the official engine supplier’s specified layout, respecting all dimensions and tolerances on pipe lengths and diameters. The specified dimensions from the engine supplier are shown in the Appendix, Moto2: Fig. 3.

7. The Linear Air-Fuel sensor will be located 125 mm after the final 3 into 1 junction of the exhaust, with a tolerance of 20 mm (minimum 105 mm, maximum 145 mm after the 3 into 1 junction). Refer to the Appendix, Moto2: Fig. 3.

2.5.3.8 Control Systems

1. The use of hydraulic and/or pneumatic pressurized powered systems is not allowed, with the exception of cylinder inlet/exhaust valve springs in the MotoGP class. All hydraulic systems on the motorcycle must be powered only by the rider's manual inputs with the following clarifications:
 - Normal hydraulic hand/foot controls such as master/slave cylinders for brakes/clutch are allowed.
 - Pneumatic engine valve closing systems are allowed in the MotoGP class only.
 - Oil/water pumps for engine lubricating/cooling are allowed.
 - The use of engine lubricating oil for any purpose other than lubrication and cooling (such as powered hydraulic systems) is not allowed.
2. Variable valve timing and variable valve lift systems, driven by hydraulic and/or electric/electronic systems are not permitted.

2.5.3.9 Transmission

1. A maximum of six gear ratios is permitted.
2. Twin clutch transmission systems (DSG) are not permitted.
3. Continuously Variable Transmission systems (CVT) are not permitted.
4. Automatic transmission systems are not permitted. Manual transmissions with gearshifts assisted by quick-shifter systems are permitted. No other electronic quick-shifting strategies are allowed, any additional electric/electronic devices that are in any way interfering with the quick-shifting are not permitted.

Moto2 class Clutch and Transmission

6. Only the official racing slipper clutch (back-torque-limiter) and clutch cover may be used, without modification, at all official Moto2 events.
7. It is the team's responsibility to fit, adjust and maintain all parts of the clutch. Engines returned for maintenance, repair or replacement will have the racing clutch removed, and the team retains their own clutch for use with subsequent engines.
8. Only the official Quick-Shifter load cell is permitted to be used. Refer to the Appendix, Moto2: Fig. 4.

It is mandatory to log the load cell signal data of the Quick-shifter at all official events, with this information supplied to the Organisers as part of the IRTA data download.

2.5.3.10 Materials

NB. "X-based alloy" or "X materials" here means the element X (e.g. Fe, for ferrous or iron-based alloy) must be the most abundant element in the alloy, on a % w/w basis.

1. The use of titanium in the construction of the following parts is forbidden:
 - The frame/chassis, excluding bolts and fasteners (the decision of the Technical Director will be final when determining what constitutes a part of the chassis).
 - The swinging arm, excluding bolts and fasteners.
 - The swinging arm spindles.
 - The wheel spindles (for wheels spindles, the use of light alloys is also forbidden).
 - The handlebars.
 - The front suspension inner and outer tubes and bottoms (ie. axle mounting point).
 - The shock absorber piston shaft and damper tube.

2. The basic structure of the crankshaft and camshafts must be made from ferrous materials, steel or cast iron. Inserts of a different material are allowed in the crankshaft for the sole purpose of balancing.
3. Pistons, cylinder heads and cylinder blocks may not be composite structures which use carbon or aramid fibre reinforcing materials.
4. Brake calipers must be made from aluminium materials with a modulus of elasticity no greater than 80 Gpa.
5. All connectors from the brake hose to the brake calipers (front and rear) and the brake master cylinders must have structural components (*) manufactured from either steel or titanium alloys with a tensile strength no less than 500 Mpa.
* Brass connectors are permitted for rear brake hoses only.
6. No parts of the motorcycle or engine may be made from metallic materials which have a specific modulus of elasticity greater than 50 Gpa/(g/cm³).
7. The use of MMC (Metal Matrix Composite) and FRM (Fibre Reinforced Metal) materials is forbidden.

2.5.4 Chassis

Note that due to the disruption caused by the COVID-19 disease outbreak in 2020, the following cost-saving measures have been approved by the Grand Prix Commission, applicable from April 2020 until the end of the 2021 season.

Frame and Swingarm

Each chassis manufacturer may submit any current or previously used frame or swingarm for homologation. These designs will be frozen until the end of the 2021 season, with no further specifications or updates permitted. Any setting/adjustment parts, e.g. triple clamps, are not part of the homologation requirement and are therefore free.

Each chassis manufacturer must supply technical drawings to the satisfaction of the Technical Director, by the date advised by him. The drawings must include the physical weight of the part for technical reference.

Each Team will then be required to declare a maximum of 2 specifications of frame and 2 specifications of swingarm per rider from their chassis manufacturer homologation list. Declarations must be made in writing to the Technical Director by the date advised by him.

Any replacement or substitute rider will be required to use only the declared parts of the original rider they are replacing.

Concessions: As a specific concession, the manufacturer MV Agusta is permitted to use their 2020 swingarm design in addition to their previously homologated swingarm.

Grand Prix Commission 10 May 2021

Bodywork and Aero Body

The current 2020 Aero Bodies as homologated by the chassis manufacturers at the 2020 Qatar GP, plus any version homologated in 2019, will be frozen until the end of the 2021 season. No further specifications or upgrades will be permitted.

Teams will be permitted to use either the complete 2019 or 2020 aero bodies. However, as per Article 2.5.4.7.10), each approved Aero Body component (Front Fairing and Front Fender) may consist of different parts, all of which must be able to fit together on the motorcycle. The parts of each component are considered together as a “kit”. Therefore, the mixing of 2019 parts with 2020 parts is not permitted.

Concessions: As a specific concession, the manufacturers NTS and MV Agusta are permitted to use their 2020 front fender and main fairing design in addition to their previously homologated designs.

Grand Prix Commission 10 May 2021

Additional Bodywork Homologation

Development of the following listed parts will also be frozen until the end of the 2021, with no further specifications or upgrades permitted. Each chassis manufacturer will be required to send the technical drawings of each part to the Technical Director by the date advised by him, and they must correspond with what was used in Qatar 2020 or during 2019. Only these parts will be permitted to be used by the teams until the end of 2021.

- Fuel tank, including cover and any additional aero parts that are associated with the fuel tank.

- Complete seat structure, including any additional aero parts that are associated with the seat. (Seat pads are not included in the homologation and are therefore free).

Concessions: As a specific concession, the manufacturer MV Agusta is permitted to use their 2020 seat design in addition to their previously homologated seat.

Grand Prix Commission 10 May 2021

2.5.4.1 Weights

1. The following are the minimum weights permitted:
Moto2 motorcycle + rider: 217 kg
2. Ballast may be added to achieve the minimum weights.
3. Weight may be checked at the initial technical control, but the main control of weight will be made at the end of practice sessions or at the end of the race. The weight of the motorcycle will be that measured in the form that the motorcycle participated, with fuel tank on and including normal levels of oil and water, and all additional equipment attached to the motorcycle, for example timekeeping transponders, camera equipment, electronic datalogging equipment etc.

For the Moto2 class the weight checked will be the total of the rider with full protective clothing plus the weight of the motorcycle. Random weight controls may be carried out during practice in a designated weighing area.

2.5.4.2 Safety and Construction criteria

Note: Please also refer to the Appendix, General and Moto2 sections.

1. Chassis Design and Construction

The chassis must be a prototype, the design and construction of which is free within the constraints of the FIM Grand Prix Technical Regulations. The main frame, swingarm, fuel tank, seat and fairing/bodywork from a non-prototype (ie. series production road-homologated) motorcycle may not be used.

Refer also to the new homologation regulations noted in Art. 2.5.4 above.

2. Throttle Twist grips

Throttle twistgrips must close automatically when released. They must also be approved by the Technical Director. Refer to the Appendix, Moto2: Fig. 4, and to the updated list of approved sensors on the FIM website (<http://www.fim-live.com/en/library/>).

3. Steering

- a) Handlebars must have a width of not less than 450 mm and their ends must be solid or rubber covered. The width of the handlebar is defined as the width measured between the outside of the handlebar grips or throttle twist grips.
- b) There must be at least 15 degrees of movement of the steering each side of the centre line.
- c) Stops must be fitted to ensure a clearance of at least 30 mm between the handlebar and the fuel tank frame and/or bodywork when at the extremes of steering lock.

4. Footrests

Footrests must have rounded ends with a minimum solid spherical radius of 8 mm.

5. Handlebar Levers

Levers must not be longer than 200 mm measured from the pivot point.

6. Clearances

- a) The motorcycle, unloaded, must be capable of being leaned at an angle of 50 degrees from the vertical without touching the ground, other than with the tyre.
- b) There must be a clearance of at least 15 mm around the circumference of the tyre at all positions of the motorcycle suspension and all positions of the rear wheel adjustment.

7. Breather Pipes

Any breather pipe from the engine or gearbox must discharge into the airbox and/or a suitable container.

8. Chain Guards

A guard must be fitted in such a way as to prevent trapping between the lower drive chain run and the final drive sprocket at the rear wheel.

9. Engine Covers

Lateral engine covers containing oil and which could be in contact with the ground during a crash, should be protected by a second cover made from composite materials, e.g. nylon, carbon or Kevlar®. Plates and/or bars from aluminium or steel are also permitted. All these devices must be designed to be resistant against sudden shocks and abrasion and must be fixed properly and securely.

Such protection is mandatory in the Moto2 class.

10. Timing Transponders

- a) All machines must have a correctly-positioned timekeeping transponder, of the correct type for the class entered. The transponder must be supplied or approved by the official Timekeeper and fixed to the motorcycle in the position advised by Timekeeping and approved by the Technical Director.
- b) The transponder must be supplied with power at all times the machine is in pit lane or on the track, including when the engine is switched off by the rider.
- c) The **Official timing** transponder must be mounted at the front of the motorcycle under the radiator to optimize performance and cooling, with a tolerance of 10 cm backwards toward the rear of the motorcycle. The fairing must incorporate a Kevlar window under the Transponder with the following dimensions:

covering the entire profile of the transponder plus 6 cm at the front and 6 cm at the rear, and plus 3 cm on each side. The transponder and Kevlar window must not be covered with metallic tape or other material which inhibits transponder function.
- d) Transponders must be fully functional on the motorcycle as required by the Organiser, including wiring, power supply, and inputs / outputs for data or signals purposes. Where signals are required to be displayed on the motorcycle, the display device (eg. dashboard) must be compatible and fully functional for this purpose, as approved by the Technical Director. Refer to the Appendix, General: Fig. 7 for the current list of signals required to be displayed.

- e) **Virtual Pit Board messaging systems (VPB) are optional, but if used they must follow the regularly updated technical protocols issued by Dorna Timekeeping. The dashboard must display exactly the same the message as that sent by the team and received by Timekeeping/TV, following the protocols in the current VPB documents. Refer to the Appendix, General: Fig. 12 for technical details of the VPB system.**

11. Onboard Cameras

- a) Where the Organiser has required a team to carry onboard camera(s) under Art. 1.21.13, such cameras and associated equipment must be carried during all practice sessions and the race, or as requested by the Organiser.
- b) Cameras and other equipment will be supplied to the designated Teams no later than 10h00 on the day preceding the first day of practice at an event.
- c) Teams must give reasonable access and assistance to the company designated for the supply of the camera equipment to facilitate the mounting of the equipment.
- d) Onboard camera equipment must be fitted to the machine following the mounting instructions and only in the location(s) specified by the Organiser. Such fitting details will be communicated to the manufacturers and teams before July of the previous season.
- e) Any machine not requested by the organisers to carry on-board cameras will instead be required to fit dummy weights in place of the camera equipment. The location and weight of each dummy weight must be identical to each of the officially specified camera positions, transmitter (including weight of all wiring) and battery. The official weight of each item will be fixed by the organisers, with a tolerance of -10 grams per dummy weight. Teams are required to supply and fit their own dummy weights, the design and material of which are free.

12. Safety Lights

All motorcycles must have a functioning red light mounted at the rear of the machine to be used in rain or low visibility conditions as instructed by Race Direction. The team must ensure that the light is switched on whenever a rain tyre is fitted on the motorcycle.

Lights must comply with the following:

- a) lighting direction must be parallel to the machine centre line (motorcycle running direction), and clearly visible from the rear at least 15 degrees to both left and right sides of the machine centre line.
- b) mounted on the seat/rear bodywork approximately on the machine centre line, in a position approved by the Technical Director. In case of dispute over the mounting position or visibility, the decision of the Technical Director will be final.
- c) power output/luminosity equivalent to approximately: 10 - 15W (incandescent) , 0.6 - 1.8 W (LED).
- d) safety light power supply may be separated from the motorcycle main wiring and battery.

2.5.4.3 Brakes

- 1. Motorcycles must have a minimum of one brake on each wheel that is independently operated.
- 2. In the Moto2 class, only brake discs of ferrous materials are allowed.
- 4. In all classes, the proportion of ceramic composite materials in brake discs must not exceed 2% by mass.

Ceramic materials are defined as inorganic, non metallic solids (e.g. Al₂O₃, SiC, B₄C, Ti₅Si₃, SiO₂, Si₃N₄).

Refer to Art. 2.5.3.10. 4) and 5) for other permitted materials in brake component construction.

- 5. Motorcycles must be equipped with brake lever protection, intended to protect the handlebar brake lever(s) from being accidentally activated in case of collision with another machine. Acceptable protection includes the fairing extending sufficiently to cover the brake lever, as viewed from the front.

Such devices must be strong enough to function effectively and designed so that there is no risk for the rider to be injured or trapped by it, and it must not be considered a dangerous fitting (at the sole discretion of the Technical Director).

In case the brake lever protection is attached to any part of the braking system (e.g. brake master cylinder), then the brake system manufacturer must officially confirm in writing to the Technical Director that the device does not interfere with the proper brake operation.

6. Anti-lock Brake Systems (ABS) are not permitted. Braking inputs must be powered and controlled solely by the rider's manual inputs. Conventional hydraulic hand/foot controls such as master/slave cylinders for brake systems are allowed (refer also to Art. 2.5.3.8 Control Systems) but no increase or control of brake pressure by electronic or mechanical systems apart from the rider's direct manual inputs are allowed. Specifically, brake systems designed to prevent the wheel from locking when the rider applies the brake are forbidden.

2.5.4.4 Suspension and Dampers

1. Electric/electronic controlled suspension, ride height and steering damper systems are not allowed. Adjustments to the suspension and steering damper systems may only be made by manual human inputs and mechanical/hydraulic adjusters.

The use of any device that modifies or adjusts the motorcycle's ride height while it is moving is forbidden, with the only exception of mechanical/hydraulic passive suspension springs preload adjusters, e.g. front fork cap mechanical manual preload adjusting knobs, shock absorber spring remote mechanical/hydraulic preload adjusters operated by a manual knob.

In determining the legality of any such device, the judgement of the Technical Director will be final.

2.5.4.5 Fuel Tanks

1. Fuel caps must be leak proof and have a positive closing device.
2. Fuel tank breather pipes must include a non-return valve. Fuel tank breather pipes must discharge into a suitable container or containers, with a minimum capacity of 200cc.
3. Fuel tanks of all construction types must be filled with fire retardant material or be lined with a fuel cell bladder.

In all classes, fuel tanks made of non-metallic composite materials (carbon fibre, aramid fibre, glass fibre, etc.) must be fitted with a fuel cell bladder, or have passed the appropriate FIM test standards for composite material fuel tanks as described in the FIM Fuel Tank Test Procedure for fuel tank approval.

Such composite fuel tanks without a fuel cell bladder must bear a label certifying conformity with FIM Fuel Tank Test Standards. Such labels must include the fuel tank manufacturer's name, date of tank manufacture, and name of testing laboratory.

Each manufacturer is requested to inform the FIM/CCR Secretariat of its fuel tank model(s) which have passed the FIM test standards, together with a copy of the fuel tank label.

Full details of the FIM Fuel Tank Test Standards and Procedures are available from the FIM. (<http://www.fim-live.com/en/library/>).

Fuel cell bladders must conform to or exceed the specification FIM/FCB-2005. Full details of this standard are available from the FIM.

4. Except for the case that a fuel tank is fixed on the chassis with bolts, all fuel lines from the fuel tank to the engine/injector system should have a self sealing breakaway valve. This valve must separate at less than 50% of the load required to break any part of the fuel line or fitting or to pull it out of the fuel tank.
6. Refuelling may only be carried out from an unpressurised container, and the motorcycle fuel tank may not be artificially pressurised above atmospheric pressure at any time. It is allowed to vent the fuel tank to the atmosphere via the airbox in order to equalise pressure in the airbox and fuel tank.

2.5.4.7 Bodywork

Refer to the Appendix, General: Fig. 7, Fig. 8, Fig. 9

Refer also to the new homologation regulations noted in Art. 2.5.4 above.

1. The windscreen edge and the edges of all other exposed parts of the streamlining must be rounded.

2. The maximum width of bodywork must not exceed 600 mm. The width of the seat or anything to its rear shall not be more than 450 mm (exhaust pipes excepted).
3. Bodywork must not extend more than 150 mm beyond a line drawn vertically from the centre of the front wheel spindle and a line drawn vertically at the rearward edge of the rear tyre. The suspension should be fully extended when the measurement is taken.
4. When viewed from the side, it must be possible to see:
 - a) At least 180 degrees of the rear wheel rim.
 - b) The whole of the front rim, other than the part obscured by the mudguard, forks, brake parts or removable air-intake.
 - c) The rider, seated in a normal position with the exception of the forearms.

Notes: No transparent material may be used to circumvent the above rules. Covers for brake parts or wheels are not considered to be bodywork obstructing the view of wheel rims in regard to the above rules.

5. No part of the motorcycle may be behind a line drawn vertically at the edge of the rear tyre.
6. The seat unit shall have a maximum height of the (approximately) vertical section behind the rider's seating position of 150 mm. The measurement will be taken at a 90° angle to the upper surface of the flat base at the rider's seating position, excluding any seat pad or covering. Any on-board camera/antenna mounted on the seat unit is not included in this measurement.
7. Mudguards are not compulsory. When fitted, front mudguards must not extend:
 - a) Front leading edge: In front of a line drawn upwards and forwards at 45 degrees from a horizontal line through the front wheel spindle.

- b) Rear trailing edge: Below a line drawn horizontally through the front wheel spindle.

The mudguard mounts/brackets and fork-leg covers, close to the suspension leg and wheel spindle, and brake disc covers are not considered part of the mudguard.

Devices or shapes protruding from the fairing or bodywork and not integrated in the body streamlining (eg. wings, fins, bulges, etc.) that may provide an aerodynamic effect (eg. providing downforce, disrupting aerodynamic wake, etc.) are not allowed.

The Technical Director will be the sole judge of whether a device or fairing design falls into the above definition.

Moving aerodynamic devices are prohibited.

- 9. The lower fairing has to be constructed to hold, in case of an engine breakdown, at least half of the total oil and engine coolant capacity used in the engine (minimum 5 litres for Moto2). This measurement should be taken with the fairing fitted to the motorcycle, whilst both wheels are on the ground and the motorcycle is upright at 90° to the horizontal.

The lower fairing should incorporate a maximum of two holes of 25 mm. These holes must remain closed in dry conditions and must be only opened in wet race conditions, as declared by the Race Director.

10. Moto2 Aero Body Approval

The Moto2 Aero Body is defined as the portion of the motorcycle bodywork that is directly impacted by the airflow while the motorcycle is moving forward, and is not in the wake (ie. aerodynamic “shadow”) of the rider’s body or any other motorcycle body parts. Therefore the Aero Body consists of the two separate components Front Fairing and Front Fender (Mudguard), as per the diagrams the Appendix, General: Fig. 10, Fig. 11.

Only the external shape, excluding the windscreen, is defined in this regulation, so the following parts are not considered as part of the Aero Body: windscreen, cooling ducts, fairing supports, and any other parts inside the external profile of the bodywork.

- a) The Aero Body is approved and samples or detailed drawings (to the satisfaction of the Technical Director) must be delivered to the Technical Director prior to the close of technical control at the first event of the season. The drawings must show the position of the “Aero Line”. The aero line is the line that in side view is parallel to and 300 mm above a reference line that is touching at least one point of the lower body profile and leaves all the side surfaces of the Aero Body above (refer to Appendix, General: Fig. 11).
- b) Approval is on a “per-Manufacturer” basis, where the Manufacturer is the company building a rolling chassis for the Moto2 class.
- c) One update per component (ie. the 2 components are Front Fairing and Front Fender) is allowed at any time during the season, for each Manufacturer. Samples or drawings of the updated items must be delivered to the Technical Director prior to the updated items being used on track. The update may consist of using a previously-approved Aero Body component from the same manufacturer. Both the updated and the original Aero Body may be used (ie. each rider may have a maximum of 2 Aero Bodies available), but each Aero Body component is a separate approval and parts may not be interchanged between them. The 2 components of the Aero Body may be mixed, eg. the initial Front Fairing may be used on the motorcycle together with either the initial or the updated Front Fender (and vice versa).
- d) Each approved Aero Body component (Front Fairing and Front Fender) may consist of different parts, all of which must be able to fit together on the motorcycle. The parts of each component are considered together as a “kit” and different options of the same part are not allowed. It is allowed that some parts of an approved Aero Body component may not be mounted on the motorcycle (eg. hand guards used in wet weather only).
- e) Material may be removed (eg. trimming, drilling of holes, etc.) from Aero Body parts without affecting the approval, but material may not be added.



- f) Modifications to the portion of the approved Aero Body below the Aero Line in a side view are allowed, provided that:
- The only purpose of the modifications is to provide clearance from interfering covered motorcycle parts (eg. exhaust pipes, engine cases, etc.), and the design is such that providing clearance is the only effect, at the sole discretion of the Technical Director.
 - The new outer body surface is no more than 30mm offset outwards from the existing outer surface.
 - The total amount of the modified surface (ie. the sum of all the changes to the left and right sides) is less than 300 cm² in side view.

2.5.4.8 Wheel Rims

1. Permitted wheel rim sizes are as follows:

	<u>Front</u>	<u>Rear</u>
Moto2	3.75” x 17” only	6.00” x 17” only

2. In all classes, composite construction wheels (including carbon fibre reinforced, glass fibre reinforced, and similar) are not permitted. The permitted materials for wheel construction are magnesium and aluminium alloys.
3. All wheels must conform to the requirements published in the document “FIM Requirements for Grand Prix Wheels 2018”, and be certified by the wheel manufacturer. Wheels approved before the end of 2017 under the previous FIM standard (2015) are permitted to be used until the end of their service life.

(refer to <http://www.fim-live.com/en/library/> Motorcycle Parts Testing Standards)

The following procedures will apply:

- A sample wheel of each different design or model must pass all the tests described in the FIM requirements document.
- Every wheel of this design or model must be identified with the model code and a unique serial number, by a permanent marking, which must be visible with the tyre fitted.

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- Each individual design or model that has passed the tests will be certified by an official document issued by the wheel manufacturer stating that the wheel conforms to the FIM Requirements for Grand Prix Wheels 2018.
- A copy of this compliance certificate must be sent to the MotoGP Technical Director (Danny Aldridge danny@irta.org.uk) and to the FIM Racing Homologation Programme (frhp@fim.ch). A copy of this certificate must also be provided to customers together with approved wheels purchased.

2.5.4.9 Tyre restrictions

1. In all classes, only tyres from the official appointed tyre supplier for each class may be used in a Grand Prix event, including official tests.

The official tyre supplier will provide sufficient tyres for all riders entered in the event.

The tyre specifications available at each event will be determined by the tyre supplier. Identical tyres of each specification for the relevant class and/or designation must be available to every rider, and the total quantity of tyres will be the same for every rider.

Tyres must be used according to the advised parameters which are agreed in consultation with the official tyre supplier, the Technical Director and the Organisers. Parameters may include pressure, temperature, or other usage guidelines, **including that allocated tyres must be mounted and unmounted from wheels only by the official tyre supplier.**

Teams must comply with requests by the Technical Director, his staff, and the official tyre supplier to check tyre parameters at any time, which may include tyre pressure and/or temperature data from the datalogger. To ensure compliance, the use of tyre pressure sensors on all rear wheels used for slick tyres is mandatory. Tyre pressure must be logged and the Technical Director and his staff may request tyre pressure data from the team at any time. Refer also to Art. 2.5.3.5.17).

The use of any device on the wheel to adjust the tyre pressure whilst on track is prohibited.

Riders or teams found to be using tyres outside of these operating parameters may be subject to penalties. The decision of the Technical Director, in consultation with the official tyre supplier, will be final.

2. During the two days prior to the start of official practice, the tyre supplier must provide to the Technical Director details including specifications, quantities and the identification markings of the tyres available for that event.

The Technical Director and staff will allocate the tyres available for the exclusive use of each entered rider (as described in Article 2.5.4.9.3). The allocation of individual tyres will be made on a random basis with no involvement of any representative from the tyre supplier, teams or riders.

In the case of a rider change after the final tyre allocation has been made, the replacement rider must use only the tyres allocated to the original rider.

3. For Grand Prix race events, each rider will be restricted in the quantity and specification of tyres that they may use at a single race event as follows:

B. Moto2 Class

During all practice sessions, warm up and the race a maximum of 17 slick tyres, specifically:

Front slick tyres:

8 front tyres, comprised of the two standard specifications only.*

Rear slick tyres:

9 rear tyres, comprised of the two standard specifications only.*

* Riders who participate in both Q1 and Q2 qualifying sessions (maximum 4 riders) will be allocated **one extra front slick tyre of their preferred specification (therefore if taken, a maximum of 9 front slick tyres)** and one extra rear slick tyre of the softest (highest grip level) specification after Q2 (therefore, if taken, a maximum of 10 rear slick tyres), on the condition that both Q1 and Q2 are declared dry.

The rider's selection of the additional front tyre specification must be declared to the tyre supplier no later than 1 hour after the end of Q2. If no specification selection is received by this time the allocation will automatically be the softest option available (highest grip level).

For both front and rear tyres, the specifications available at each event and the quantity of each specification allocated to each rider will be determined solely by the Official tyre supplier. All riders will receive equal allocations.

Rain tyre quantities are not restricted, however only the current specification of rain tyres from the Official tyre supplier may be used. The tyre supplier undertakes to have available 4 sets of rain tyres per rider. Tyres of the correct specification retained by the team from previous events may be used.

4.
 - a) Riders may use only the tyres allocated for his/her exclusive use (as described in Article 2.5.4.9.3).
 - b) Tyres will be individually identified and may not be exchanged between riders, including between team-mates, and may not be exchanged by the tyre supplier after allocation, except with the permission of the Technical Director (for example, under Article 2.5.4.9.8).
 - c) Tyres may not be materially altered in any way after allocation, such as hand-cutting and any other action or treatment that will alter the tyre's performance (with the exception of the use of tyre warmers), unless deemed necessary by the tyre manufacturer. Such alterations may be performed only by or under the supervision of the tyre manufacturer's representative, and shall be made available equally for all riders.
5. Each allocated tyre must be marked with its specification and carry an official identification label with a unique serial number. In the event of damage to or loss of the official label, the tyre company must be able to satisfy the Technical Director as to the tyre's specification. Tyres may be checked for compliance at any time, before or after use.
6. In the case of an interrupted race, a rider must use tyres from his allocation of marked tyres for the restarted race.
7. In the unlikely event of a tyre being accidentally damaged before it is used (for example during the fitting process) and deemed to be unusable by the Technical Director, it may be replaced with a tyre of the same specification with the permission of the Technical Director. Such replacement tyres will be marked and included in the allocation of the rider concerned. The damaged tyre will be removed from the allocation and may not be allocated again.

Once it is used (i.e. has exited pit lane) a tyre may not be replaced because of damage or defect, except if all the following conditions apply:

- a) The tyre supplier must confirm to the Technical Director that the damage is solely due to a manufacturing defect or fitting problem (i.e. out of the team's control), and not due to any other reason such as impact, cut, abrasion or accident.
- b) The tyre supplier must confirm to the Technical Director that the damage is significant enough to deem the tyre unsafe to use.
- c) Tyres that are deemed to have covered more than 2/3 of race distance will not be considered for replacement. The determination of distance covered will be the sole decision of the Technical Director in consultation with the tyre supplier, and the team may be required to submit information such as lap charts and logger data to support a claim.

In determining whether a replacement will be allowed the decision of the Technical Director will be final.

- d) If a replacement tyre is granted, it must be of the same specification as the damaged tyre and selected at random by the Technical Director and/or his staff.
8. Should an exceptional and unpredictable safety problem arise for the tyre supplier during an event, so as to prevent riders from safely competing in the race, then the tyre supplier must inform the Technical Director and Race Direction of the problem as soon as possible.

A re-allocation of suitable tyres may be made under the supervision of the Technical Director. Such allocated tyres will be the same specification(s) and quantities for all riders, the quantity being determined by the tyre supplier in consultation with the Technical Director.

9) Tests, Moto2 Class:

- D) For all winter and post-race tests, each rider will be restricted in the quantity and specification of tyres they may use at a single test. The tyre supplier will determine the number of specifications and quantities it will bring to each test. Every rider present will receive the same allocation of standard tyre specifications and quantities.

The tyre supplier may choose to provide additional tyres of a different specification, for tyre development purposes. The allocation of any development tyres will be solely at the discretion of the tyre supplier.

2.5.4.10 Numbers and Backgrounds

1. The racing number must be affixed to the front of the motorcycle fairing in a central position. Rear or side numbers are optional.
2. Numbers should be a minimum height of 140 mm.
3. Numbers must be easily legible, in a clear simple font and contrast strongly with the background colour.

In the Moto2 class, numbers must be of one single colour which contrasts strongly with the background colour. A small outline in a different colour is permitted. Two-digit numbers must have a separation (min. 10 mm) between digits so the background colour is visible between digits. Reflective finishes (eg. silver, gold, etc.) are not permitted.

4. Backgrounds must be of one single colour over an area large enough to provide a minimum clear area of 25 mm around the numbers.

In the Moto2 class reflective finishes (eg. silver, gold, etc.) are not permitted.

5. In the Moto2 class, teams with more than one rider must differentiate between the riders by using different number and/or background colours.
6. In case of a dispute concerning the legibility of numbers, the decision of the Technical Director will be final.



2.5.5 General

2.5.5.1 Fuel and Oil

- 1. All motorcycles must be fuelled with unleaded petrol, which must comply with the FIM Grand Prix specification for each racing class.
- 2. Unleaded petrol will comply with the FIM Grand Prix specification if:
 - a) It has the following characteristics:

Property	Units	Min.	Max.	Test Method
RON		95.0	102.0	ISO 5164
MON		85.0	90.0	ISO 5163
Oxygen	% (m/m)		2.7	ISO 22854
Benzene	% (v/v)		1.0	ISO 22854
Vapour Pressure (DVPE)	kPa		90	EN 13016-1
Lead	mg/L		5.0	EN 237
Density at 15 °C	kg/m3	720.0	775.0	ASTM D 4052
Oxidation Stability	minutes	360		ASTM D 525
Existent gum	mg/100 mL		5.0	EN ISO 6246
Sulphur	mg/kg		10	ASTM D 5453
Nitrogen	% (m/m)		0.2	ASTM D 4629
Copper Corrosion	Rating		Class 1	ISO 2160
Distillation:				
At 70 °C	% (v/v)	22.0	50.0	ISO 3405
At 100 °C	% (v/v)	46.0	71.0	ISO 3405
At 150 °C	% (v/v)	75.0		ISO 3405
Final Boiling Point	°C		210.0	ISO 3405
Residue	% (v/v)		2.0	ISO 3405
Olefins(*)	% (v/v)		18.0	ISO 22854
Aromatics(*)	% (v/v)		35.0	ISO 22854
Total di-olefins	% m/m		1.0	GCMS / HPLC GCMS / HPLC
Appearance		clear and bright		visual inspection

Moto2



All test methods include a precision statement. In cases of dispute, the procedures for resolving the dispute and interpretation of the results based on test method precision, described in ISO 4259, shall be used.

- b) The total of individual hydrocarbon components, containing only hydrogen and carbon, present at concentrations of less than 5% m/m must be at least 30% m/m of the fuel.

Compliance with the compositional regulation is calculated on the following basis:

$A = 100 - B - C$

where:

A is the total concentration (in % m/m) of individual hydrocarbon components present at concentrations less than 5 % m/m,

B is the total concentration (in % m/m) of oxygenates present in the fuel, and

C is the total concentration (in % m/m) of individual hydrocarbon components present at concentrations greater than 5% m/m.

The test method will be gas chromatography.

- c) The total concentration of naphthenes, olefins and aromatics in each carbon number group will not exceed the limits given in the following table.

% m/m	C4	C5	C6	C7	C8	C9+
Naphthenes	0	5	10	10	10	10
Olefins	5	20	20	15	10	10
Aromatics			1.2	35	35	30

Bicyclic and polycyclic olefins are not permitted. The fuel must contain no substances which are capable of exothermic reaction in the absence of external oxygen.

- d) Only the following oxygenates will be permitted:

Methanol, Ethanol, Iso-propyl alcohol, Iso-butyl alcohol, Methyl tertiary butyl ether, Ethyl tertiary butyl ether, Tertiary amyl methyl ether, Di-isopropyl ether, n-Propyl alcohol, Tertiary butyl alcohol, n-Butyl alcohol, Secondary butyl alcohol.

Moto2

- e) Manganese (<1 mg/L), lead (<5 mg/L), iron (<5 mg/L) and nickel (<5 mg/L) additives are not permitted above these limits.
 - f) In the Moto2 class, oil for engine lubrication will comply with the FIM Grand Prix Moto2 specification if it matches the reference fingerprint(s) for the official oil(s) of the relevant class, established by the appointed oil supplier.
 - g) In the Moto2 class, the fuel and oil specification will be determined by the appointed fuel supplier and oil supplier in consultation with the Organisers and the official engine supplier and may be changed at any time by mutual agreement.
- 3) Moto2 class fuel and oil:
- a) Only fuel from the appointed fuel supplier is permitted. This fuel will be available at all official events, and will conform to the FIM Grand Prix specification. Use of this fuel without any addition or alteration is mandatory.
 - b) Only engine oil from the appointed oil supplier is permitted. This oil will be available at all official events and will conform to the FIM Grand Prix specification for the relevant class. The use of the official oil without any addition or alteration is mandatory. The Technical Director may require that an oil sample be taken from any team or machine at any time.

5. Fuel and Oil Approval

1. All fuel in use in the Championship must be approved prior to the race in which the fuel is to be used. Fuel companies supplying petrol to participating teams must submit ten litres (2 x 5 L) to the laboratory appointed by the FIM/Dorna for analysis in accordance with the specification. Providing the petrol is within the specification, a certificate containing a test report number will be issued. The test report number must be given to the appropriate teams before they take part in a race.
2. All companies supplying oil, for engine lubrication in the Moto2 class, to participating teams must submit two litres (2 x 1 L) of the oil to the laboratory appointed by the FIM/Dorna for approval. If the oil conforms to the specifications, a certificate will be issued. The test report number given on the certificate must be supplied to teams which intend to use the oil.

3. During Thursday's technical control, each team will declare the certificate test report numbers corresponding to the petrol and oil to be used. This information will be entered in the Technical Control Book of each motorcycle at every Grand Prix.

Therefore, the fuel and oil which is to be used must be approved by the Thursday afternoon before the race in which the fuel is to be used.

4. When a fuel or oil sample is requested at any Grand Prix Circuit, either during practice, warm up or following the race, the certificate test report numbers corresponding to the petrol and oil used must be declared to the Grand Prix Technical Director by the team. Failure to provide the correct number may result in a penalty.
 5. Each fuel and/or oil Company will be responsible for payment to the laboratory for these batch analyses costs and establishment of the basic fingerprints.
6. Fuel and Oil Sampling and Testing
 1. The Grand Prix Technical Director will appoint a senior Technical Scrutineer to take responsibility for the administration and supervision of the fuel or oil sampling procedure.
 2. Motorcycles selected for fuel or oil controls will usually be amongst the first three finishers, and will be directed to the "parc fermé" for technical controls.
 3. Other finishers may be chosen at random for fuel or oil controls. A Technical Scrutineer will be posted at the entrance to the pit box of the selected rider(s) whose machine must immediately accompany the Technical Scrutineer to the technical control area or "parc fermé".
 4. The fuel or oil to be tested will be transferred into two bottles, "A" and "B" identified by reference to the rider, team and machine from which the sample was taken. The bottles will be closed, sealed and labelled by the Technical Director and/or Technical Scrutineer.
 5. Only new bottles will be used for the samples and only new materials will be used to transfer the fuel or oil.

6. The Fuel/Oil Sample Declaration form will be filled out immediately, containing all necessary information, including the riders and machines identity, date and place of fuel or oil sampling. A responsible team member will sign this declaration, after verifying that all the information is correct.
7. Sample “A” will be sent to the official appointed laboratory, accompanied by a copy of the Fuel/Oil Sample Declaration form. The fuel sample will be compared with the approved fuel or oil. If necessary the concentration of other elements, including lead, manganese, iron, nickel, nitrogen and oxygen may be measured at the request of the Technical Director to ensure that octane and power boosters have not been added.

If any observed deviations indicate that they are due to mixing with one other fuel, which has been approved by the FIM/Dorna for use by the team, the fuel sample will be deemed to comply, provided the fuel sample still falls within FIM Grand Prix specification as described in Article 2.5.5.1.2.

Costs for the analyses of sample “A” will be paid by FIM/Dorna.

8. Sample “B” will be handed over to the FIM designated storage facility for safeguarding in case of protests and/or requirement of a counter analysis by the appointed laboratory. Costs for the analyses of sample “B” will be paid by the team concerned.
9. Both samples will be transported by an authorised courier.
10. The laboratory must deliver the results of the fuel sample analyses to the Grand Prix Technical Director, with a copy to the FIM MotoGP Stewards, as soon as possible after receipt of the samples.
11. In the case of non-conformity, the Technical Director must notify, as soon as practical after receipt of the results, the FIM MotoGP Stewards, the Grand Prix Race Direction and the rider/team representative concerned.

Within 48 hours of the receipt of the notification of the results of the laboratory test of sample “A”, the team must notify the FIM MotoGP Stewards and the Technical Director if counter-expertise is required (or not required) for sample “B”.

The FIM MotoGP Stewards Panel will take a decision at the Grand Prix event immediately following the notification of the results of the final expertise. Any appeal against the decision of the FIM MotoGP Stewards Panel will be heard by the FIM Appeal Stewards appointed for the Grand Prix event at which the FIM MotoGP Stewards Panel decision is taken.

If there is no more Grand Prix following the notification of the results of the final expertise, the FIM MotoGP Stewards Panel will take a decision as soon as practical. Any appeal against the decision of the FIM MotoGP Stewards Panel will be heard by the FIM Appeal Stewards appointed by the FIM for this specific task.

12. The director of fuel analysis at the official laboratory must confirm to the Technical Director that the identification and the seal status of the “B” sample is correct before any B sample analysis is carried out.
13. Failure of the sample to comply to approved petrol or oil and/or the addition of octane and power boosters, as described in Article 2.5.5.1.6.7, will automatically result in the disqualification of the competitor from the entire meeting.

The result of the competitor’s fuel or oil sample analysis (“A” or “B” sample) more favourable to the competitor will be taken into account.

7. Fuel Temperature

In the Moto2 class fuel on the motorcycle must not be below the prevailing ambient temperature, as measured by the Technical Director. Other than a simple removable fuel tank cover, the use of any device on the motorcycle to artificially decrease the fuel temperature below ambient temperature is forbidden.

8. Fuel Handling Safety

- The use of anti-static mats and grounding wrist straps is mandatory when filling fuel containers used for transferring fuel to and from motorcycles.

- The use of approved fuel fillers/fuel dumps is mandatory when adding or removing fuel to/from motorcycle fuel tanks.
- All fuel handling equipment must be approved by the Technical Director.

2.5.5.2 Rider's Safety Equipment

1. It is compulsory that each contracted rider must begin each race event with at least two complete sets of undamaged safety equipment. A complete set of safety equipment shall contain:

- Helmet
- Leather Suit, 1-piece
- Gloves
- Boots
- Back Protector
- Chest Protector

The equipment must be worn, correctly fastened, at all times during on-track activity.

2. Safety Equipment Control

- a) At Technical Control at the first race of the season, one complete set of undamaged safety equipment (as listed in Art. 2.5.5.2.1) must be presented and checked for the following:
 - Helmet: FIM Homologation Label indicating valid FIM homologation.
 - Leather Suit, Boots, Gloves: the model names of each of these items must correspond to the Self Certifications previously supplied to the Technical Director.
 - Back Protector: a marking indicating certification to EN1621-2:2014 or to prEN1621-2:2010.
 - Chest Protector: a marking indicating conformity with the standards specified in 2.5.5.2.3.c.v) below.



- b) At any time during the season, the Technical Director may request a piece of rider’s equipment in order to check that it meets the requirements listed in Art. 2.5.5.2.3. The item of equipment will be sent to the official appointed laboratory for testing. Supply of equipment and test results as follows:
- The manufacturer of the equipment may be asked to supply a duplicate item of equipment for testing.
 - Equipment damaged after an accident may be taken and tested on an undamaged portion.
 - In the event that the item tested fails to meet the required standard, the manufacturer may request a further test, at their cost, on a duplicate item of used equipment.
 - In the event that the first test and/or optional retest are still negative, the Self Certification provided by the manufacturer will be suspended and the manufacturer shall have 30 days to rectify the problem and demonstrate this.
 - In the event that the problem is not rectified in this time, the manufacturer shall not be permitted to supply any new equipment of the failed type.

3. FIM Rider’s Equipment Minimum Requirements (REMR)

a) Standards for Helmet and Visor

Only FIM homologated helmets according to FRHPhe-01 (with a valid FIM Homologation Label) will be allowed.

A list of FIM Homologated helmets is available on www.frhp.org.

FRHPhe-01 (FIM)	
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- Disposable visor “tear-offs” are permitted.

b) Certification for Leather Suit & Airbag system, Gloves, Boots, Back Protectors

All rider's safety equipment must comply with the requirements detailed in Art. 2.5.5.2.3.c) Sections i to vi, below. The following procedures will apply:

- A sample of each different design or model must pass all the tests described in the FIM Standards, Table 1 below, or in the case of Airbag systems, the FIM Requirements for Grand Prix Airbags 2018.

Every example of this design or model must be identified with the model code by a permanent marking.

Each individual design or model that has passed the tests will be self-certified by the manufacturer, using the official document, stating that the item conforms to the FIM requirements.

- A copy of this Certificate must be sent to the MotoGP Technical Director (Danny Aldridge, danny@irta.org.uk) and to the FIM Racing Homologation Programme (frhp@fim.ch).
- For leather suits only, the manufacturer must complete and maintain the "Riders Race Suit Database" file for each of their riders.
- This database must be submitted to the MotoGP Technical Director, and updated each time a leather suit is supplied to or withdrawn from a rider.
- The Technical Director and the rider also have the right to withdraw a race suit from the database.

c) Standards for Leather Suit, Gloves, Boots, Back & Chest Protectors

i) Leather Suit

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 1.

- The use of abrasion-resistant stretch material is permitted up to a maximum of 50% of the surface area, provided that the requirements of Table 1, column 2 are met.
- The use of sliders (specific parts of the riders safety equipment, either permanently fixed or removable, intended to make regular contact with the track surface to assist the rider while cornering), is permitted on the knees, elbows or any other parts of the race suit, where it is deemed necessary. They must not be manufactured from or contain any material that when in contact with the track surface may cause visual or other disturbance to other riders.
- Shall contain armour certified to EN1621-1:2012 in the shoulders, elbows, knees, and legs.
- It is mandatory for the leather suit to be fitted with an Airbag system, with the following requirements:
 - All Airbag systems must be approved according to clause b), above.
 - Every rider must start each track session with a functional Airbag system. Once the airbag has been deployed, the responsibility for continuing the practice or race rests with the rider. (For the purposes of this regulation, Moto2 QP1 and QP2 are considered as one track session)
 - For substitute or replacement riders, the use of an Airbag system is recommended for their first event of the season, and is compulsory for any further events of that season.
 - For Wild Card riders the use of an Airbag system is compulsory. Wild Card riders equipment must be presented to Technical Control for inspection prior to the start of the event.

ii) Gloves

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 3.
- Shall have a cuff length sufficient to overlap the leather suit by at least 50 mm.
- Shall have a means of fastening to secure them to the hand (an elastic closure alone is not acceptable).
- Shall have suitable knuckle protection.

iii) Boots

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 4.
- Flexing zones are permitted up to a maximum of 40% of surface area, provided that they comply with the requirements of Table 1, column 5.
- Shall have a minimum height sufficient to overlap the leather suit by at least 70 mm.
- Shall have a means of fastening to secure them to the foot (a slip-on boot is not acceptable).

iv) Back Protector

- Must be certified to EN1621-2:2014 or prEN1621-2:2010.
- May be full back or central back configuration.

v) Chest Protector

- Full chest protectors (protector designed as a single piece) and Divided chest protectors (protector designed in two separate halves) are permitted.
- All types of chest protectors (Full or Divided) must have a minimum protection area of no less than 230 cm².
- **Only protectors** in conformity with prEN1621-3 (level 1 or 2) are permitted.



vi) Marking

- When an equipment manufacturer has tested and proven that the safety equipment in question meets the relevant requirements in paragraphs i) to vi) above, and Table 1 below, they shall attach a permanent marking stating the model number of the product.
- The marking of race suits must additionally contain a unique serial number.

Table 1.
Material Properties

		1	2	3	4	5
TEST	Test Method	Suit Leather or main material	Suit Stretch Areas	Gloves Palm & Back Areas	Boots All Areas	Boots Flex Areas
Tear	ISO 3377-1 or EN388 (N)	≥50	≥50	≥30	≥100	≥60
Abrasion	EN388 (cycles)	≥600	≥400	≥300	≥800	≥500
Seam	EN13935-1 (Suit, Boot) EN13594 (Gloves)	≥12	≥12	≥8	≥15	≥15

4. Post-crash Riders Safety Equipment Check

After a crash the Technical Director may at his discretion request that the rider’s safety equipment is checked prior to the start of the following practice session, warm up or race.

In the event that any item of equipment is considered, by either the Technical Director or the representative of the manufacturer of the item, to be too damaged for use on track, the rider will be required to replace or repair the item before being permitted on track.

Any question concerning the condition and suitability for use of the riders safety equipment shall be decided by the Technical Director, who may consult with the manufacturers of the product before making a final decision.

2.5.5.3 Procedures for Technical Control

1. At each circuit an area must be designated as the Technical Checking Area. In this area, under the control of the Chief Technical Scrutineer and the supervision of the Technical Director, suitable equipment will be installed to conduct the various tests viz:
 - i) Equipment for measuring the noise of the motorcycle.
 - ii) Weighing scales with check weights for calibration purposes.
 - iii) Instruments for measuring engine capacity.
 - iv) Instruments and gauges as necessary for measuring other dimensions and criteria specified in the Technical Regulations.
2. The technical control procedure will be carried out in accordance with the schedule set out in the Regulations. The technical scrutineers must be available throughout the event to check motorcycles and equipment as required by the Technical Director.
3. Presentation of a machine will be deemed as an implicit statement of conformity with the technical regulations. Responsibility for the preparation of the machine to comply with all technical and safety regulations rests with the team.
4. A rider's presence at the initial technical control is not mandatory, except in the case of the Moto2 class when the rider must be present for a weight check together with his helmet and all protective clothing.
5. Motorcycles will be inspected under the name of the team and at the initial technical control each motorcycle will be registered by the technical scrutineers who will prepare a technical control card to record technical specifications, check results and the riders in that team entitled to use the motorcycle.

- 6 At the initial technical control the technical scrutineers should inspect the motorcycle to record technical details including weight (plus rider weight in the Moto2 class), noise level and may also check the motorcycle for technical compliance with other aspects of the Regulations, as requested by the Technical Director.
- 8 At each event, at the conclusion of technical control procedures prior to the first practice, the technical scrutineers will place a small sticker on the motorcycle indicating that it has been registered for use by the team's rider(s) for that race and passed the technical control procedures.
9. The Chief Technical Scrutineer will prepare a report on the results of technical control which, will be submitted to the Event Management Committee via the Technical Director.
- 10 The technical scrutineers should re-inspect any machine that has been involved in an accident, and if necessary to issue a new technical control sticker for a rebuilt machine. This would normally be carried out at the pit of the rider concerned. The team has sole responsibility for any repairs carried out, and to determine when the machine is fit for further use.
- 11 The technical scrutineers must be available, based on instructions from the Technical Director, to re-inspect any motorcycle for technical compliance during the meeting or after the race and to supervise inspection of a motorcycle following a protest on a technical matter.
- 12 At the end of the race, the Chief Technical Scrutineer will ensure that the motorcycles placed in the first three positions, plus any other motorcycles designated by the Technical Director, are placed in the Check Area for a period of 60 minutes pending any protest.

The motorcycles may be checked for compliance with any of the FIM Grand Prix technical regulations, and any other technical requirement at the discretion of, under the control of and as requested by the Technical Director.

13. The Technical Director may require a team to provide such parts or samples as he may deem necessary.
14. In the case that a machine fails post-qualifying or post-race technical checks due to damage or technical issues on-track, the following protocol will apply, always at the sole discretion of the MotoGP Technical Director.
 - a) Machines under the minimum weight limit due to:
 - i) **Loss of fluid.**
 - If the Technical Director has verified that there is physical evidence of fluid loss due to an incident or mechanical issue on track, he may approve the fluid to be replenished to the levels as declared by the Manufacturer at the start of the season.
 - If it is necessary to replace a damaged part to accommodate the fluid (eg. radiator), this will be permitted only under the supervision of the Technical Director who will confirm that the new part is identical to the damaged part. In the MotoGP class, the Technical Director may require that the replacement part is taken from the rider's second machine.
 - ii) **Loss of material or parts.**
 - If the Technical Director has verified that the machine has lost a part or material due to an incident or mechanical issue on track, he may approve the replacement of the part(s) with the following conditions:
 - The Technical Director must verify that any new parts are identical to the original.
 - If the Technical Director determines that there is insufficient physical evidence to prove that a part or material is missing, then the original part must be found before it can be replaced.



- Missing ballast weights will only be permitted to be replaced if they are found and returned to Technical Control by the circuit officials.
- b) Machines exceeding the maximum noise levels:
- If the Technical Director is satisfied that there is sufficient physical evidence of damage or loss due to an incident or mechanical issue on track, he may approve the replacement of the missing or damaged exhaust parts, and the machine to be re-tested.
 - In the MotoGP class the Technical Director may require that the exhaust parts from the rider’s second machine be used for such replacement.

2.5.5.4 Noise Tests

1. Noise tests must be conducted in an open area with a space of at least 10 metres between the motorcycle being tested and walls or other obstacles. There should be a minimum amount of ambient noise in the area.
2. The measuring equipment must be calibrated prior to the test and recalibrated at regular intervals.
3. The measuring equipment should be placed 50 cm from the end of the exhaust pipe and at 45 degree angle to the pipe either to the side or above.
4. The maximum noise levels at all times are:

Moto2: 118 dB/A

For convenience, the test may be conducted at a fixed RPM.

	1 cylinder	2 cylinders	3 cylinders	4 cylinders
Moto2	5,500 rpm	5'500 rpm	5'500 rpm	5'500 rpm

Moto2

2.5.6 Wild Card Technical Regulations

Wild Card entries are subject to all of the above Moto2 technical regulations, with the following conditions:

1. Wild Card entries must comply with the current bodywork regulations (Art. 2.5.4.7).
2. Riders Safety Equipment for Wild Card entries (Art. 2.5.5.2):
 - Any safety equipment which does not show an approved model number and serial number will be subject to approval for use by the Technical Director.
 - It is the responsibility of all wildcards to make sure that their airbag system meets the current FIM Regulations which must be presented to technical control along with all other safety equipment for inspection, prior to the start of the event.
 - The use of an Airbag system in the leather suit must be in accordance with Art. 2.5.5.2.3.

2.6 Moto3 Class Technical Regulations

Refer to Article 1.11.11 for regulations concerning entry and supply conditions for Moto3 Manufacturers, and equipment ordering for Moto3 teams.

Note that due to the disruption caused by the COVID-19 disease outbreak in 2020, the following cost-saving measures have been approved by the Grand Prix Commission, applicable from April 2020 until the end of the 2021 season.

Machine specification, as declared by each manufacturer at the Qatar GP 2020, will be frozen for the 2020 and the 2021 seasons, meaning no further specifications or upgrades will be permitted on any listed Performance Parts, chassis, swingarm, engine, aero body, gearbox or throttle body.

If a manufacturer is unable to receive parts from a third-party supplier, they will be permitted to seek an alternative supplier under the condition that they provide written documentation to prove the supply problem and that there is no performance improvement due to the new components. The request must be made in the normal manner through the GPC for final approval.

Gearbox ratios as stated by both the manufacturer and teams will also be frozen for 2021. The only exception will be if a team changes manufacturer in 2021, they will be permitted to submit a new declaration for their riders.

2.6.3 Engines

Refer also to the new homologation regulations noted in Art. 2.6 above.

2.6.3.1 Engine Description

1. Engines may operate on the reciprocating piston four stroke principle only.

The normal section of each engine cylinder and piston in plan view must be circular. Circular section cylinders & pistons are defined as having less than 5% difference in the diameter measured at any two points.

2. Engines must be normally aspirated.

3. Cubic capacity of the engine will be defined by the swept volume of the cylinder, ie. the area of the bore of the cylinder multiplied by the stroke, multiplied by the number of cylinders.

No tolerance on capacities is permitted.

Engine capacity will be measured at ambient temperature.

Moto3 Class Engines

11. Maximum engine RPM in acceleration is controlled by the official ECU*. The RPM Limiter strategy target is set at 13,500 rpm.

12. **Moto3 Class engine valves.**

- Valve timing system drive must be by one chain. An intermediate drive gear which rotates on only one axle or rotation centre is allowed in the system (refer to the Appendix, Moto3: Fig. 1 for some examples of permitted systems).
- Only reciprocating inlet and exhaust valves are permitted, with a maximum of 2 valves each for inlet and exhaust.

2.6.3.2 Engine Supply

21. **Moto3 Engine Definition and Approval**

- a) The engine is defined as the complete engine including intake system (throttle body, injectors), and one complete transmission.

“Complete transmission” hereunder means all transmission parts including primary gears, gearbox, and gearshift mechanisms. “Gearbox” hereunder means the secondary gears, shafts and shifting mechanisms, excluding primary gears.

“Complete engine” here means ready to undergo the Initial Mapping procedure (refer to Art. 2.6.3.5.24, therefore including necessary sensors and electrical items to run for calibration (e.g. spark plugs, pickups, idle bypass motor [if used], etc.).

- b) Each engine manufacturer may receive approval for a maximum of two different engine specifications per season. Manufacturers must supply all permanent contracted riders with the same specification engines, the second specification (if any) is intended for Wild Card entries only.

- c) For contracted and Wild Card entries, only approved engines and parts may be used in GP events.

22. Moto3 Engine Availability

- a) Any manufacturer entering the championship must supply a minimum of 6 riders with engine packages and spare parts for the season.
- b) Each engine manufacturer must undertake to supply sufficient engine packages and spare parts to supply up to 14 riders per season if requested. The following conditions apply:
 - i) This requirement may be adjusted by the Organiser, subject to agreement by the Moto3 Manufacturers, in special circumstances (eg. a new manufacturer entering for the first time).
 - ii) The minimum supply number may be comprised of complete motorcycles or separate engines. Manufacturers supplying complete motorcycles must allow their customers to also purchase spare complete engines and parts as necessary to complete the season.
 - iii) Engine supply requests which comply with the manufacturer's requirements for payment and terms, will be noted in chronological order to determine the first officially accepted requests up to the minimum requirement.
 - iv) This minimum supply applies to each separate engine specification (according to Art. 2.6.3.5.24) offered by the manufacturer.
 - v) Lead-time of complete engines is a maximum of 4 calendar months regardless of quantity. Lead-time starts from the official order receipt or the completion date of the engine entry procedure (see Art. 2.6.3.5.24 above), whichever is the later.

23. Moto3 Engine Price

- a) The maximum price of a single engine must not exceed 12,000 Euros (twelve thousand Euros). No optional parts or service contracts may be used to circumvent this price limit.
- b) For contracted riders, the manufacturer undertakes to supply customer teams with a “Moto3 Engine Rental Package” for the season for which it may charge a maximum of 60,000 Euros (excluding VAT, excluding freight) per rider. The Moto3 Engine Rental Package will be comprised of:
 - 6 engines, without throttle bodies, without gearboxes
 - 2 throttle bodies
 - 2 complete gearboxes

Additional gearboxes will be rented separately as the team requires. Teams may rent up to a maximum of 2 complete gearboxes per contracted rider per season at a capped price of 2,500 Euros each. Any additional gearboxes rented will be charged as per the Manufacturer’s approved price list.

- c) As an exception to clause b) above, for engine manufacturers in their first season of Moto3 the maximum number of engines per rider per season is 8 (Art. 2.6.3.3.11.b). Therefore first-time manufacturers may charge a maximum of 79,000 Euros (excluding VAT, excluding freight) per rider for the Moto3 Engine Rental Package comprised of:
 - 8 engines, without throttle bodies, without gearboxes
 - 2 throttle bodies
 - 2 complete gearboxes

Additional gearboxes will be rented separately as the team requires. Teams may rent up to a maximum of 2 complete gearboxes per contracted rider per season at a capped price of 2,500 Euros each. Any additional gearboxes rented will be charged as per the Manufacturer’s approved price list.

24. Moto3 Engine Allocation and Verification

- a) Engines, throttle bodies and gearboxes, will be rented by the manufacturer to the team and remain the property of the manufacturer, with the teams returning the engines, throttle bodies and gearboxes to the manufacturer at the end of the season. However engine distribution will be controlled by the Organiser to ensure equality of specification.
- b) Manufacturers will deliver the engines (minimum of 2 engines per rider in the first batch), in a schedule approved by the Technical Director prior to the season, and respecting the regulations for the maximum number of engines per rider per season. The delivery schedule will also include one additional engine for verification purposes, plus sufficient spare engines (number decided by the manufacturer and approved by the Technical Director).
- c) The engines will be sealed by the Technical Director and staff, who will randomly select engines for delivery to the teams supplied by each manufacturer. Spare engines will also be sealed ready for distribution as required.
- d) The Technical Director and his staff will randomly select one of the engines from the first batch to be sealed and held as the sample engine.

When subsequent batches are delivered the Technical Director and his staff will randomly choose one engine from each batch to be opened and checked for conformity with the sample engine.

After a batch is confirmed to be the correct specification, the engines in that batch will be sealed and randomly allocated to the teams. No protests against engine specification will be accepted for such confirmed and sealed engines.

The engine opened for verification may be reassembled under supervision of the Technical Director and staff, or the manufacturer may choose to withdraw it from the allocation.

- e) The manufacturer will decide whether engines delivered will be new or rebuilt, and if rebuilt the manufacturer has complete discretion over which parts are replaced in the rebuilding process. All engines must comply with the approval regulations.
- f) The manufacturer will undertake to deliver their batches of engines in equal numbers to each of its riders at the same time. When necessary to remove engines from rider's allocation, this will be done in equal numbers from each rider, such that each rider will always have at least two usable engines available to them at any time. However, if an engine is withdrawn due to mechanical problems, it may be replaced as a one-off delivery from the manufacturer's supply of spare engines.

25. Moto3 Engine Maintenance and Updates

- a) Maintenance and rebuilding of engines by teams is not permitted. Engines will be delivered to the team with official security seals in place.
- b) Optional and aftermarket parts are not permitted, except for parts that can be changed without removing the official engine seals. For such parts the approval, supply and price rules described in Art. 2.6.3.2.26 will apply.
- c) In case of a proven, documented reliability or safety issue (eg. a faulty batch of parts), a manufacturer may apply to the Grand Prix Commission to allow replacement parts to be fitted to rectify the problem. If approved, teams may not be charged, and engine power performance may not be altered in any way.

26. Moto3 Parts Supply

- a) Each engine manufacturer must submit a price and lead-time list of all the parts of the engine which may be changed (ie. those parts outside of the official security seals). The list must include:
 - a complete engine minus throttle body and transmission parts.

- a separate “Gearbox Update” price list for any updated gearbox parts introduced during the season (see 2.6.3.2.27.b below). For gearbox specification updates only, the list must be for a complete gearbox where the total of all parts does not exceed 2,500 Euros.
 - It is permitted to list multiple manufacturers for sensors on the official parts list. The sensor package price must not cause the total engine or chassis price to exceed the price cap, and the sensor list must be finalised by the close of technical control at the first event of the season.
- b) This price list is subject to approval by the Organiser and the manufacturer may not charge more than these published prices. Approval is based on the prices and lead-times being in line with current market norms for these parts and technologies.
- c) Only parts on the relevant manufacturer’s parts list may be used. Any alternative brand or supplier of a part must be approved by the engine manufacturer and that part added to the manufacturer’s official parts list.
- An exception is made in the case of a Back-Torque-Limiter clutch assembly (BTL or Slipper Clutch). This may be offered as an alternative to the original clutch assembly by the manufacturer, or supplied to teams by a third-party (aftermarket) supplier. In each case the maximum price for the clutch assembly is 1,500 Euros (excluding VAT, excluding freight). Any third-party supplied clutches must first be approved by the Technical Director (such approval will include submission of a detailed parts price list), and when first introduced must be available to at least the same number of riders as in Art. 2.6.3.2.22 above.
- d) Updates to parts on the list are permitted, but must be approved by the Technical Director and added to the official published parts list. Price and lead-time for updated parts must not be more than those for the original parts in the manufacturer’s approved parts list. Updated parts must be available to all customers at the same time, and may not be used until the manufacturer has the required availability.

27. Moto3 Engine and Parts Updates

Updates to the specification of engines or engine parts are not permitted during the season, with the following exceptions.

- a) Throttle body specification may be updated once per season. If updated, one of the updated units must be supplied free of charge, and at the same time, to each of the contracted riders supplied by that manufacturer. Any additional units ordered by the teams will be charged as per the manufacturer's approved rental price list.
- b) The complete gearbox or individual components may be updated once per season. If updated, one of each updated part must be supplied free of charge, and at the same time, to each of the contracted riders supplied by that manufacturer.

If a complete updated gearbox is introduced, teams are permitted to rent up to a maximum of an additional 2 of the updated gearboxes per contracted rider per season at a capped price of 2,500 Euros each.

If an update consists of one or more components rather than a complete gearbox then the parts will be charged as per the "Gearbox Update price list" (see 2.6.3.2.26.a above). Teams are permitted to rent up to a maximum of an additional 2 of each updated part at these prices. Any further additional parts ordered will be charged as per the manufacturer's standard approved price list.

28. Moto3 Approved Parts

Only parts that have been approved by the Technical Director may be used on a Moto3 engine. These parts can be from the approved parts list of any of the approved versions of a manufacturer's engine, or from the approved parts list of a third-party (aftermarket) clutch supplier.

Generic ancillaries not specialised to the specific engine design, such as bolts and fasteners, are not subject to approval.

2.6.3.3 Engine Durability

Moto3 Class

11. In the Moto3 class the number of engines available to each contracted rider is limited to 6 engines per rider for all of the scheduled races of the season. The limit applies to practice and race at GP events only, engines for testing outside of events are not controlled.
 - a) Should a rider be replaced for any reason, the replacement rider will be deemed to be the original rider for purposes of engine allocation.
 - b) For engine manufacturers in their first Moto3 season the maximum number of engines per rider per season is 8.
 - c) Each wild card entry is allowed two engines per event for his exclusive use.
12. The engines available for the exclusive use of each rider must be marked and sealed by the Technical Director or his staff prior to first use. It is the Team's obligation to register any new engine with the Technical Director prior to use. Once registered and used for the first time, engines may not be swapped between riders, even within the same team. A new engine is deemed to be used when the motorcycle with that engine crosses the transponder timing point at the pit lane exit.
13. The engines will be sealed (e.g. by means of wiring and identification tabs, stickers, etc) so that major components (including but not limited to: crankshaft and it's bearings, conrod and it's bearings, piston, piston rings and piston pin, valves and their springs, camshafts) can not be replaced. Sealing positions must be approved by the Technical Director so that:
 - a) The cylinder head cover cannot be removed from the cylinder head. If the engine design allows for valve clearance and/or camchain maintenance without removing the cylinder head cover, it must not be possible to remove camshafts and rocker arms, if any, without breaking the seals.

- b) the cylinder head and the cylinder (if any) cannot be removed from the engine (e.g. the cylinder head is wired to the cylinder and the cylinder is wired to the engine crankcase),
- c) the crankcase cannot be opened (e.g. the crankcase halves are wired together).

All the parts that are accessible without removing the security seals can be replaced. Breaking or removing the seal or wiring without supervision by the Technical Director or staff will be deemed to be “engine rebuilding” and engines with broken, tampered with or missing security seals will be treated as a new engine in the allocation.

14. Should a competitor, for any reason, require the use of another engine above their allocation, the Technical Director must be informed before the new engine is used, and **the FIM MotoGP Stewards Panel** will apply the appropriate penalty according to the Sporting Regulations (Art. 1.21.20).

The damaged engine will be removed from the allocation and if it is used again, it will be treated as a new engine with the appropriate penalty.

15. There is no limit to the number of times a sealed, allocated engine can be fitted to and used in a motorcycle, provided the security seal is not broken or removed. Replacing an engine with another sealed engine (new or used) from the rider’s allocation is allowed with no penalty.
16. As an exception to the above, it will be possible for a team to apply to the Technical Director to break the seals under the following conditions:
- a) permission may or may not be granted at the sole discretion of the Technical Director,
 - b) any work permitted is under supervision of the Technical Director or staff,
 - c) with the sole purpose of either:
 - i) To inspect, clean and repair damage to sealed engine parts caused solely by a crash. The only parts that may be replaced during such supervised repairs are non-moving items (e.g. covers, cases and related seals), exhibiting crash damage as determined by the Technical Director or:

- ii) To open the cylinder head cover (cam cover) to carry out a visual inspection on safety grounds. No parts may be removed, replaced, or modified with the exception of the cover's seal/gasket.
- d) any of the above operations approved by the Technical Director will be informed to the other Moto3 manufacturers.

2.6.3.5 Electronics

- 2. Tyre temperature/pressure sensors are permitted in all classes.

Moto3 Ignition, Electronics, Datalogger

- 21. a) Only the ignition/fuel injection control units (“ECU”)* supplied by the series Organiser are allowed. This ECU will have a maximum of one ignition driver and include an engine RPM limiter, and the ECU must remain unmodified in hardware and software, as delivered by the Organiser. The use of any additional device or module to modify the signals sent from the ECU to the actuators is forbidden. Injectors, bypass systems and ignition must be operated exclusively by the original and unmodified ECU signal.
- b) Only the official “Race” version of the ECU software supplied by the ECU manufacturer may be used by the team to modify the ECU configuration file. The only permitted changes by the team are the setting (tuning) options included in this software.

Only the official manufacturer (or their official representative) of the approved engine may provide new configuration files (which must be available to all customers), and the manufacturer is permitted to use their “Factory” version software to modify existing configuration files.

- c) Within 4 hours of the end of Free Practice 2 of an event, each manufacturer must submit for approval to the Technical Director and the official ECU supplier any new configuration files that they wish to use at that event or any future events.
 - Once a configuration file has been submitted it is not allowed to be modified, other than what is allowed with the “Race” version of the ECU software license.

- It is the responsibility of the manufacturer to ensure that all their customers are aware of which configuration files are approved for use.
 - All configuration files once approved will stay on the approved list until the end of the season, unless the manufacturer requests them to be removed.
- d) The Technical Director may require the team to change the ECU on any machine for another standard one at any time.
- e) The official ECU will include a datalogger*, and no other additional dataloggers are permitted. Data analysis software is not controlled.
- f) The datalogger download cable in the wiring harness must be of the approved standard type or one which is completely compatible with it. Details of connector type and connection are detailed in the online documents from the official ECU supplier.*

NB. * for all ECU and electronic items identified with this symbol, details are available at the website: <http://www.dellorto-pe.com/>

22. Compulsory Engine Management features.

Refer to the Appendix, Moto3: Fig. 2 for details of compulsory engine management equipment and design, including ignition and sensors.

23. Recommended Engine Management features.

Refer to the Appendix, Moto3: Fig. 3 for details of recommended engine management and electronic equipment and design, including timing pattern, O² sensor, knock sensor, idle control, dashboard.

24. There is a compulsory official Initial Mapping and Set Up Procedure for new engines to be compatible with the official ECU. Refer to the Appendix, Moto3: Fig. 4 for details of the initial mapping options.

2.6.3.6 Fuel System

Moto3 Class fuel system

15. Maximum relative fuel pressure is 5.0 Bar.
16. Variable - length inlet tract systems are not permitted.

- 17 Only one throttle control valve per throttle body is permitted to control the power demand by the rider, which must be controlled exclusively by mechanical means (e.g. cable) operated by the rider only. No other powered moving devices (except injectors and the idle control air bypass) are permitted in the inlet tract before the engine intake valve. No interruption of the mechanical connection between the rider's input and the throttle is allowed.
18. Idle speed (including engine braking) adjustment by means of an air bypass system, controlled by the ECU* is allowed. The maximum size of such air bypass is 12mm equivalent diameter; control systems may include a butterfly-type control valve.
19. Fuel injectors must be located upstream of the engine intake valves.
20. A maximum of 2 fuel injectors per throttle body, and 2 independent fuel injector drivers, controlled by the official ECU*, is permitted.
21. Other than engine sump breather gases, only air/fuel mixture is permitted in the inlet tract and combustion chamber.

2.6.3.7 Exhaust

1. The outlet of the exhaust must not extend behind a line drawn vertically through the edge of the rear tyre.
2. For safety reasons the exposed edge of the exhaust pipe outlet must be rounded to avoid any sharp edges.
3. Variable length exhaust systems are not permitted.
4. Exhaust Gas Recirculation (EGR) systems are not permitted.

Moto3 class exhaust:

11. No moving parts (e.g. valves, baffles) are permitted in the exhaust system.
12. Exhausts are not included in the Moto3 Chassis Approval regulations (Art. 2.6.4), so the choice of exhaust supplier is free.

2.6.3.8 Control Systems

1. The use of hydraulic and/or pneumatic pressurized powered systems is not allowed, with the exception of cylinder inlet/exhaust valve springs in the MotoGP class. All hydraulic systems on the motorcycle must be powered only by the rider's manual inputs with the following clarifications:
 - Normal hydraulic hand/foot controls such as master/slave cylinders for brakes/clutch are allowed.
 - Pneumatic engine valve closing systems are allowed in the MotoGP class only.
 - Oil/water pumps for engine lubricating/cooling are allowed.
 - The use of engine lubricating oil for any purpose other than lubrication and cooling (such as powered hydraulic systems) is not allowed.
2. Variable valve timing and variable valve lift systems, driven by hydraulic and/or electric/electronic systems are not permitted.

Decompression systems which operate only at engine start are permitted, but variable valve timing/valve lift systems which operate other than at engine start are not permitted.

2.6.3.9 Transmission

1. A maximum of six gear ratios is permitted.
2. Twin clutch transmission systems (DSG) are not permitted.
3. Continuously Variable Transmission systems (CVT) are not permitted.
4. Automatic transmission systems are not permitted. Manual transmissions with gearshifts assisted by quick-shifter systems are permitted.

Moto3 class Transmission

11. A maximum of 2 possible gear ratios for each gearbox speed, and 3 possible ratios for the primary drive gear is permitted. Teams will be required to declare the gearbox ratios chosen for each gear at the beginning of the season, and only these ratios may be used during the entire season.

12. Gearbox systems must be of the conventional type. That is; constant-mesh with engagement dogs as an integral part of the gear, **and/or shifters (eg. “dog rings”)**, actuated by shift forks and shift cam or drum, with only one set of gears engaging at one time. So-called “seamless shift” transmissions (also known as Automated Manual Transmission, Instantaneous Gearchange System, etc.) are not permitted.
13. Electro-mechanical and/or electro-hydraulic clutch actuating systems are not permitted.

2.6.3.10 Materials

NB. “X-based alloy” or “X materials” here means the element X (e.g. Fe, for ferrous or iron-based alloy) must be the most abundant element in the alloy, on a % w/w basis.

1. The use of titanium in the construction of the following parts is forbidden:
 - The frame/chassis, excluding bolts and fasteners (the decision of the Technical Director will be final when determining what constitutes a part of the chassis).
 - The swinging arm, excluding bolts and fasteners.
 - The swinging arm spindles.
 - The wheel spindles (for wheels spindles, the use of light alloys is also forbidden).
 - The handlebars.
 - The front suspension inner and outer tubes and bottoms (ie. axle mounting point).
 - The shock absorber piston shaft and damper tube.
2. The basic structure of the crankshaft and camshafts must be made from ferrous materials, steel or cast iron. Inserts of a different material are allowed in the crankshaft for the sole purpose of balancing.
3. Pistons, cylinder heads and cylinder blocks may not be composite structures which use carbon or aramid fibre reinforcing materials.

4. Brake calipers must be made from aluminium materials with a modulus of elasticity no greater than 80 Gpa.
5. All connectors from the brake hose to the brake calipers (front and rear) and the brake master cylinders must have structural components (*) manufactured from either steel or titanium alloys with a tensile strength no less than 500 Mpa.

* Brass connectors are permitted for rear brake hoses only.

6. No parts of the motorcycle or engine may be made from metallic materials which have a specific modulus of elasticity greater than 50 Gpa/(g/cm³).
7. The use of MMC (Metal Matrix Composite) and FRM (Fibre Reinforced Metal) materials is forbidden.
8. In the Moto3 class, the following materials restrictions apply:
 - a) Engine crankcases, cylinder blocks and cylinder heads must be made from cast aluminium alloys.
 - b) Pistons must be made from an aluminium alloy.
 - c) Piston pins must be made from ferrous materials.
 - d) Connecting rods, valves and valve springs must be made from either ferrous or titanium-based alloys.
 - e) **The use of carbon fibre for the main construction of the swing arm is forbidden.**

2.6.4 Chassis

Refer also to the new homologation regulations noted in Art. 2.6 above.

Moto3 Chassis Approval and Supply

- a) The rolling chassis may only be supplied by one of the engine Manufacturers participating in the Moto3 class. This manufacturer may appoint sub-contractor(s) or independent supplier(s) to provide chassis or components, but the responsibility for the Approval, price and sale of the complete chassis rests with the manufacturer.

- b) Each Manufacturer is permitted to receive approval for only one version of it's own chassis and one version of any third-party supplied chassis they make available. Teams may use a chassis approved from the previous season, in which case the following conditions apply:
- No upgrades to performance parts (see f. below) are permitted during the season.
 - Sensors that are not listed in the manufacturer's previous season approved complete chassis parts list are not permitted.
 - Current season performance parts may not be used on the previous season chassis being used, unless they are the same part.
- c) All Performance Parts, excluding wheels and exhausts (see f. and h. below), will be approved, with an approval deadline of 31 January for each season. Approval includes submission of a price list for all parts required for the motorcycle, the total of which may not exceed 120% of the complete chassis package price.
- d) The deadline for submission of technical details, drawings or sample parts requested by the Technical Director for approval, is the end of Technical Control of the first race of the season. Such technical information and drawings must satisfy the requirements of the Technical Director regarding the level of detail and information required, at his sole discretion.
- e) The price of a complete rolling chassis (requiring only engine, ECU/ Datalogger, transponder) will be capped at 85,000 Euros (excluding VAT, excluding freight). All parts required to build the complete rolling chassis must be supplied, including non-approved parts such as wheels, exhaust system, and parts not listed as Performance Parts. The price includes the cost of one piece of any updated performance parts supplied during the season (see g. below).

f) The following items will be designated as “Performance Parts” and must be homologated. Only homologated performance parts may be used in GP events.

- Chassis
- Swing Arm
- Radiator and/or Heat Exchangers
- Airbox complete (including any breathers, catch tanks and related connections)
- Seat ^
- Aero Body ^

^ it is permitted to modify the seat and/or bodywork by removing material only.

- Fuel Tank
- Suspension (excluding internal and setting parts*).

* internal suspension parts are not approved and not controlled. They may be modified or replaced at any time by the team or suspension manufacturer.

g) Each chassis component designated as performance parts may be updated a maximum of once per season. Any updated parts must be available in sufficient quantities for immediate use by all customers of that manufacturer at the same time, and one piece per contracted rider of any updated part must be supplied free of charge to all customers. Any additional orders of updated parts will be charged as per the manufacturer’s approved price list, in which updated parts may not exceed the price of the original part.

h) The remaining chassis parts, not designated as performance parts, do not require approval and may be updated or replaced as required with no price or supply conditions. However a complete rolling chassis supplied by the manufacturer must include all of these items.

2.6.4.1 Weights

1. The following are the minimum weights permitted:
Moto3: motorcycle + rider 152 kg
2. Ballast may be added to achieve the minimum weights.
3. Weight may be checked at the initial technical control, but the main control of weight will be made at the end of practice sessions or at the end of the race. The weight of the motorcycle will be that measured in the form that the motorcycle participated, with fuel tank on and including normal levels of oil and water, and all additional equipment attached to the motorcycle, for example timekeeping transponders, camera equipment, electronic datalogging equipment etc.

For the Moto3 class the weight checked will be the total of the rider with full protective clothing plus the weight of the motorcycle. Random weight controls may be carried out during practice in a designated weighing area.

2.6.4.2 Safety and Construction criteria

Note: Please also refer to Appendix, General and Moto3 sections.

Refer also to the new homologation regulations noted in Art. 2.6 above.

1. Chassis Design and Construction

The chassis must be a prototype, the design and construction of which is free within the constraints of the FIM Grand Prix Technical Regulations. The main frame, swingarm, fuel tank, seat and fairing/bodywork from a non-prototype (ie. series production road-homologated) motorcycle may not be used.

2. Throttle Twist grips

Throttle twistgrips must close automatically when released.

3. Steering

- a) Handlebars must have a width of not less than 450 mm and their ends must be solid or rubber covered. The width of the handlebar is defined as the width measured between the outside of the handlebar grips or throttle twist grips.

- b) There must be at least 15 degrees of movement of the steering each side of the centre line.
- c) Stops must be fitted to ensure a clearance of at least 30 mm between the handlebar and the fuel tank frame and/or bodywork when at the extremes of steering lock.

4. Footrests

Footrests must have rounded ends with a minimum solid spherical radius of 8 mm.

5. Handlebar Levers

Levers must not be longer than 200 mm measured from the pivot point.

6. Clearances

- a) The motorcycle, unloaded, must be capable of being leaned at an angle of 50 degrees from the vertical without touching the ground, other than with the tyre.
- b) There must be a clearance of at least 15 mm around the circumference of the tyre at all positions of the motorcycle suspension and all positions of the rear wheel adjustment.

7. Breather Pipes

Any breather pipe from the engine or gearbox must discharge into the airbox and/or a suitable container.

8. Chain Guards

A guard must be fitted in such a way as to prevent trapping between the lower drive chain run and the final drive sprocket at the rear wheel.

9. Engine Covers

Lateral engine covers containing oil and which could be in contact with the ground during a crash, should be protected by a second cover made from composite materials, e.g. nylon, carbon or Kevlar®. Plates and/or bars from aluminium or steel are also permitted. All these devices must be designed to be resistant against sudden shocks and abrasion and must be fixed properly and securely.

Such protection is mandatory as directed by the Technical Director.

10. Timing Transponders

- a) All machines must have a correctly-positioned timekeeping transponder, of the correct type for the class entered. The transponder must be supplied or approved by the official Timekeeper and fixed to the motorcycle in the position advised by Timekeeping and approved by the Technical Director.
- b) The transponder must be supplied with power at all times the machine is in pit lane or on the track, including when the engine is switched off by the rider.
- c) The **Official timing** transponder must be mounted at the front of the motorcycle under the radiator to optimize performance and cooling, with a tolerance of 10 cm backwards toward the rear of the motorcycle. The fairing must incorporate a Kevlar window under the Transponder with the following dimensions:

covering the entire profile of the transponder plus 6 cm at the front and 6 cm at the rear, and plus 3 cm on each side. The transponder and Kevlar window must not be covered with metallic tape or other material which inhibits transponder function.
- d) Transponders must be fully functional on the motorcycle as required by the Organiser, including wiring, power supply, and inputs / outputs for data or signals purposes. Where signals are required to be displayed on the motorcycle, the display device (eg. dashboard) must be compatible and fully functional for this purpose, as approved by the Technical Director. Refer to the Appendix, General: Fig. 7 for the current list of signals required to be displayed.
- e) **Virtual Pit Board messaging systems (VPB)** are optional, but if used they must follow the regularly updated technical protocols issued by Dorna Timekeeping. The dashboard must display exactly the same the message as that sent by the team and received by Timekeeping/TV, following the protocols in the current VPB documents. Refer to the Appendix, General: Fig.12 for technical details of the VPB system.

11. Onboard Cameras

- a) Where the Organiser has required a team to carry on-board camera(s) under Art. 1.21.13, such cameras and associated equipment must be carried during all practice sessions and the race, or as requested by the Organiser.
- b) Cameras and other equipment will be supplied to the designated Teams no later than 10h00 on the day preceding the first day of practice at an event.
- c) Teams must give reasonable access and assistance to the company designated for the supply of the camera equipment to facilitate the mounting of the equipment.
- d) Onboard camera equipment must be fitted to the machine following the mounting instructions and only in the location(s) specified by the Organiser. Such fitting details will be communicated to the manufacturers and teams before July of the previous season.
- e) Any machine not requested by the organisers to carry on-board cameras will instead be required to fit a single dummy weight in place of the camera equipment. The location of the dummy weight must be identical to the official position of the transmitter and battery, as notified by each manufacturer to the Technical Director. Every machine from that manufacturer must use the same dummy weight location. The official weight of the dummy weight will be fixed by the organisers, with a tolerance of -10 grams per dummy weight. Teams are required to supply and fit their own dummy weight, the design and material of which is free.

12. Safety Lights

All motorcycles must have a functioning red light mounted at the rear of the machine to be used in rain or low visibility conditions as instructed by Race Direction. The team must ensure that the light is switched on whenever a rain tyre is fitted on the motorcycle.

Lights must comply with the following:

- a) lighting direction must be parallel to the machine centre line (motorcycle running direction), and clearly visible from the rear at least 15 degrees to both left and right sides of the machine centre line.
- b) mounted on the seat/rear bodywork approximately on the machine centre line, in a position approved by the Technical Director. In case of dispute over the mounting position or visibility, the decision of the Technical Director will be final.
- c) power output/luminosity equivalent to approximately: 10 - 15W (incandescent) 0.6 - 1.8 W (LED).
- d) safety light power supply may be separated from the motorcycle main wiring and battery.

2.6.4.3 Brakes

- 1. Motorcycles must have a minimum of one brake on each wheel that is independently operated.
- 2. In the Moto3 class, only brake discs of ferrous materials are allowed.
- 4. In all classes, the proportion of ceramic composite materials in brake discs must not exceed 2% by mass.

Ceramic materials are defined as inorganic, non metallic solids (e.g. Al₂O₃, SiC, B₄C, Ti₅Si₃, SiO₂, Si₃N₄).

Refer to Art. 2.6.3.10. 4) and 5) for other permitted materials in brake component construction.

- 5. Motorcycles must be equipped with brake lever protection, intended to protect the handlebar brake lever(s) from being accidentally activated in case of collision with another machine. Acceptable protection includes the fairing extending sufficiently to cover the brake lever, as viewed from the front.

Such devices must be strong enough to function effectively and designed so that there is no risk for the rider to be injured or trapped by it, and it must not be considered a dangerous fitting (at the sole discretion of the Technical Director).

In case the brake lever protection is attached to any part of the braking system (e.g. brake master cylinder), then the brake system manufacturer must officially confirm in writing to the Technical Director that the device does not interfere with the proper brake operation.

6. Anti-lock Brake Systems (ABS) are not permitted. Braking inputs must be powered and controlled solely by the rider's manual inputs. Conventional hydraulic hand/foot controls such as master/slave cylinders for brake systems are allowed (refer also to Art. 2.6.3.8 Control Systems) but no increase or control of brake pressure by electronic or mechanical systems apart from the rider's direct manual inputs are allowed. Specifically, brake systems designed to prevent the wheel from locking when the rider applies the brake are forbidden.

2.6.4.4 Suspension and Dampers

1. Electric/electronic controlled suspension, ride height and steering damper systems are not allowed. Adjustments to the suspension and steering damper systems may only be made by manual human inputs and mechanical/hydraulic adjusters.

The use of any device that modifies or adjusts the motorcycle's ride height while it is moving is forbidden, with the only exception of mechanical/hydraulic passive suspension springs preload adjusters, e.g. front fork cap mechanical manual preload adjusting knobs, shock absorber spring remote mechanical/hydraulic preload adjusters operated by a manual knob.

In determining the legality of any such device, the judgement of the Technical Director will be final.

2.6.4.5 Fuel Tanks

1. Fuel caps must be leak proof and have a positive closing device.
2. Fuel tank breather pipes must include a non-return valve. Fuel tank breather pipes must discharge into a suitable container **or containers**, with a minimum capacity of 200cc.
3. Fuel tanks of all construction types must be filled with fire retardant material or be lined with a fuel cell bladder.

In all classes, fuel tanks made of non-metallic composite materials (carbon fibre, aramid fibre, glass fibre, etc.) must be fitted with a fuel cell bladder, or have passed the appropriate FIM test standards for composite material fuel tanks as described in the FIM Fuel Tank Test Procedure for fuel tank approval.

Such composite fuel tanks without a fuel cell bladder must bear a label certifying conformity with FIM Fuel Tank Test Standards. Such labels must include the fuel tank manufacturer's name, date of tank manufacture, and name of testing laboratory.

Each manufacturer is requested to inform the FIM/CCR Secretariat of its fuel tank model(s) which have passed the FIM test standards, together with a copy of the fuel tank label.

Full details of the FIM Fuel Tank Test Standards and Procedures are available from the FIM. (<http://www.fim-live.com/en/library/>).

Fuel cell bladders must conform to or exceed the specification FIM/FCB-2005. Full details of this standard are available from the FIM.

4. Except for the case that a fuel tank is fixed on the chassis with bolts, all fuel lines from the fuel tank to the engine/injector system should have a self sealing breakaway valve. This valve must separate at less than 50% of the load required to break any part of the fuel line or fitting or to pull it out of the fuel tank.
6. Refuelling may only be carried out from an unpressurised container, and the motorcycle fuel tank may not be artificially pressurised above atmospheric pressure at any time. It is allowed to vent the fuel tank to the atmosphere via the airbox in order to equalise pressure in the airbox and fuel tank.

2.6.4.7 Bodywork

Refer to the Appendix, General: Fig. 7, Fig. 8, Fig. 9

Refer also to the new homologation regulations noted in Art. 2.6 above.

1. The windscreen edge and the edges of all other exposed parts of the streamlining must be rounded.
2. The maximum width of bodywork must not exceed 600 mm. The width of the seat or anything to its rear shall not be more than 450 mm (exhaust pipes excepted).
3. Bodywork must not extend more than 150 mm beyond a line drawn vertically from the centre of the front wheel spindle and a line drawn vertically at the rearward edge of the rear tyre. The suspension should be fully extended when the measurement is taken.
4. When viewed from the side, it must be possible to see:
 - a) At least 180 degrees of the rear wheel rim.
 - b) The whole of the front rim, other than the part obscured by the mudguard, forks, brake parts or removable air-intake.
 - c) The rider, seated in a normal position with the exception of the forearms.

Notes: No transparent material may be used to circumvent the above rules. Covers for brake parts or wheels are not considered to be bodywork obstructing the view of wheel rims in regard to the above rules.

5. No part of the motorcycle may be behind a line drawn vertically at the edge of the rear tyre.
6. The seat unit shall have a maximum height of the (approximately) vertical section behind the rider's seating position of 150 mm. The measurement will be taken at a 90° angle to the upper surface of the flat base at the rider's seating position, excluding any seat pad or covering. Any on-board camera/antenna mounted on the seat unit is not included in this measurement.

7. Mudguards are not compulsory. When fitted, front mudguards must not extend:

- a) Front leading edge: In front of a line drawn upwards and forwards at 45 degrees from a horizontal line through the front wheel spindle.
- b) Rear trailing edge: Below a line drawn horizontally through the front wheel spindle.

The mudguard mounts/brackets and fork-leg covers, close to the suspension leg and wheel spindle, and brake disc covers are not considered part of the mudguard.

8. Devices or shapes protruding from the fairing or bodywork and not integrated in the body streamlining (eg. wings, fins, bulges, etc.) that may provide an aerodynamic effect (eg. providing downforce, disrupting aerodynamic wake, etc.) are not allowed.

The Technical Director will be the sole judge of whether a device or fairing design falls into the above definition.

Moving aerodynamic devices are prohibited.

9. The lower fairing has to be constructed to hold, in case of an engine breakdown, at least half of the total oil and engine coolant capacity used in the engine (minimum 2.5 litres for Moto3). This measurement should be taken with the fairing fitted to the motorcycle, whilst both wheels are on the ground and the motorcycle is upright at 90° to the horizontal.

The lower fairing should incorporate a maximum of two holes of 25 mm. These holes must remain closed in dry conditions and must be only opened in wet race conditions, as declared by the Race Director.

10) Moto3 Aero Body Approval

The Moto3 Aero Body is defined as the portion of the motorcycle bodywork that is directly impacted by the airflow while the motorcycle is moving forward, and is not in the wake (ie. aerodynamic “shadow”) of the rider’s body or any other motorcycle body parts. Therefore the Aero Body consists of the two separate components Front Fairing and Front Fender (Mudguard), as per the diagrams the Appendix, General: Fig. 10, Fig. 11.

Only the external shape, excluding the windscreen, is defined in this regulation, so the following parts are not considered as part of the Aero Body: windscreen, cooling ducts, fairing supports, and any other parts inside the external profile of the bodywork.

- a) The Aero Body is approved and samples or detailed drawings (to the satisfaction of the Technical Director) must be delivered to the Technical Director prior to the close of technical control at the first event of the season. The drawings must show the position of the “Aero Line”. The aero line is the line that in side view is parallel to and 300 mm above a reference line that is touching at least one point of the lower body profile and leaves all the side surfaces of the Aero Body above (refer to Appendix, General: Fig. 11).
- b) Approval is on a “per-Manufacturer” basis.
- c) One update per component (ie. the 2 components are Front Fairing and Front Fender) is allowed at any time during the season, for each Manufacturer. Samples or drawings of the updated items must be delivered to the Technical Director prior to the updated items being used on track. The update may consist of using a previously-approved Aero Body component from the same manufacturer. Both the updated and the original Aero Body may be used (ie. each rider may have a maximum of 2 Aero Bodies available), but each Aero Body component is a separate approval and parts may not be interchanged between them. The 2 components of the Aero Body may be mixed, eg. the initial Front Fairing may be used on the motorcycle together with either the initial or the updated Front Fender (and vice versa).
- d) The supply of any upgraded Aero Body part is subject to the Moto3 chassis regulations for Performance Parts (Art. 2.6.4.g).
- e) Each approved Aero Body component (Front Fairing and Front Fender) may consist of different parts, all of which must be able to fit together on the motorcycle. The parts of each component are considered together as a “kit” and different options of the same part are not allowed. It is allowed that some parts of a approved Aero Body component may not be mounted on the motorcycle (eg. hand guards used in wet weather only).



- f) Material may be removed (eg. trimming, drilling of holes, etc.) from Aero Body parts without affecting the approval, but material may not be added.
- g) Modifications to the portion of the approved Aero Body below the Aero Line in a side view are allowed, provided that:
 - The only purpose of the modifications is to provide clearance from interfering covered motorcycle parts (eg. exhaust pipes, engine cases, etc.), and the design is such that providing clearance is the only effect, at the sole discretion of the Technical Director.
 - The new outer body surface is no more than 30 mm offset outwards from the existing outer surface.
 - The total amount of the modified surface (ie. the sum of all the changes to the left and right sides) is less than 300 cm² in side view.

2.6.4.8 Wheel Rims

- 1. Permitted wheel rim sizes are as follows:

	<u>Front</u>	<u>Rear</u>
Moto3	2.50” x 17” only	3.50” x 17” only

- 2. In all classes, composite construction wheels (including carbon fibre reinforced, glass fibre reinforced, and similar) are not permitted. The permitted materials for wheel construction are magnesium and aluminium alloys.
- 3 All wheels must conform to the requirements published in the document “FIM Requirements for Grand Prix Wheels 2018”, and be certified by the wheel manufacturer. Wheels approved before the end of 2017 under the previous FIM standard (2015) are permitted to be used until the end of their service life.

(refer to <http://www.fim-live.com/en/library/> Motorcycle Parts Testing Standards)

The following procedures will apply:

- A sample wheel of each different design or model must pass all the tests described in the FIM requirements document.
 - Every wheel of this design or model must be identified with the model code and a unique serial number, by a permanent marking which must be visible with the tyre fitted.
 - Each individual design or model that has passed the tests will be certified by an official document issued by the wheel manufacturer stating that the wheel conforms to the FIM Requirements for Grand Prix Wheels 2018.
 - A copy of this compliance certificate must be sent to the MotoGP Technical Director (Danny Aldridge danny@irta.org.uk) and to the FIM Racing Homologation Programme (frhp@fim.ch). A copy of this certificate must also be provided to customers together with approved wheels purchased.
4. Wheels are not included in the Moto3 Chassis Approval regulations (Art. 2.6.4), so the choice of wheel supplier is free.

2.6.4.9 Tyre restrictions

1. In all classes, only tyres from the official appointed tyre supplier for each class may be used in a Grand Prix event, including official tests.

The official tyre supplier will provide sufficient tyres for all riders entered in the event.

The tyre specifications available at each event will be determined by the tyre supplier. Identical tyres of each specification for the relevant class and/or designation must be available to every rider, and the total quantity of tyres will be the same for every rider.

Tyres must be used according to the advised parameters which are agreed in consultation with the official tyre supplier, the Technical Director and the Organisers. Parameters may include pressure, temperature, or other usage guidelines, **including that allocated tyres must be mounted and unmounted from wheels only by the official tyre supplier.**

Teams must comply with requests by the Technical Director, his staff, and the official tyre supplier to check tyre parameters at any time, which may include tyre pressure and/or temperature data from the datalogger.

The use of any device on the wheel to adjust the tyre pressure whilst on track is prohibited.

Riders or teams found to be using tyres outside of these operating parameters may be subject to penalties. The decision of the Technical Director, in consultation with the official tyre supplier, will be final.

2. During the two days prior to the start of official practice, the tyre supplier must provide to the Technical Director details including specifications, quantities and the identification markings of the tyres available for that event.

The Technical Director and staff will allocate the tyres available for the exclusive use of each entered rider (as described in Article 2.6.4.9.3). The allocation of individual tyres will be made on a random basis with no involvement of any representative from the tyre supplier, teams or riders.

In the case of a rider change after the final tyre allocation has been made, the replacement rider must use only the tyres allocated to the original rider.

3. For Grand Prix race events, each rider will be restricted in the quantity and specification of tyres that they may use at a single race event as follows:

C. Moto3 Class

During all practice sessions, warm up and the race a maximum of 17 slick tyres, specifically:

Front slick tyres:

8 front tyres, comprised of 2 of the standard specifications only (S, M, H).*

Rear slick tyres:

9 rear tyres, comprised of 2 of the standard specifications only (S, M, H).*

* Riders who participate in both Q1 and Q2 qualifying sessions (maximum 4 riders) will be allocated **one extra front slick tyre of their preferred specification (therefore if taken, a maximum of 9 front slick tyres) and one extra rear slick tyre of the softest specification (highest grip level of the 2 specifications available at that event) after Q2 (therefore, if taken, a maximum of 10 rear slick tyres), on the condition that both Q1 and Q2 are declared dry.**

The rider's selection of the additional front tyre specification must be declared to the tyre supplier no later than 1 hour after the end of Q2. If no specification selection is received by this time the allocation will automatically be the softest option available (highest grip level).

For both front and rear tyres, the specifications available at each event and the quantity of each specification allocated to each rider will be determined solely by the Official tyre supplier. All riders will receive equal allocations.

Rain tyre quantities are not restricted, however only the current specification of rain tyres from the Official tyre supplier may be used. The tyre supplier undertakes to have available 4 sets of rain tyres per rider. Tyres of the correct specification retained by the team from previous events may be used.

4. a) Riders may use only the tyres allocated for his/her exclusive use (as described in Article 2.6.4.9.3).
- b) Tyres will be individually identified and may not be exchanged between riders, including between team-mates, and may not be exchanged by the tyre supplier after allocation, except with the permission of the Technical Director (for example, under Article 2.6.4.9.8).

- c) Tyres may not be materially altered in any way after allocation, such as hand-cutting and any other action or treatment that will alter the tyre's performance (with the exception of the use of tyre warmers), unless deemed necessary by the tyre manufacturer. Such alterations may be performed only by or under the supervision of the tyre manufacturer's representative, and shall be made available equally for all riders.
- 5. Each allocated tyre must be marked with its specification and carry an official identification label with a unique serial number. In the event of damage to or loss of the official label, the tyre company must be able to satisfy the Technical Director as to the tyre's specification. Tyres may be checked for compliance at any time, before or after use.
- 6. In the case of an interrupted race, a rider must use tyres from his allocation of marked tyres for the restarted race.
- 7. In the unlikely event of a tyre being accidentally damaged before it is used (for example during the fitting process) and deemed to be unusable by the Technical Director, it may be replaced with a tyre of the same specification with the permission of the Technical Director. Such replacement tyres will be marked and included in the allocation of the rider concerned. The damaged tyre will be removed from the allocation and may not be allocated again.

Once it is used (i.e. has exited pit lane) a tyre may not be replaced because of damage or defect, except if all the following conditions apply:

- a) The tyre supplier must confirm to the Technical Director that the damage is solely due to a manufacturing defect or fitting problem (i.e. out of the team's control), and not due to any other reason such as impact, cut, abrasion or accident.
- b) The tyre supplier must confirm to the Technical Director that the damage is significant enough to deem the tyre unsafe to use.

- c) Tyres that are deemed to have covered more than 2/3 of race distance will not be considered for replacement. The determination of distance covered will be the sole decision of the Technical Director in consultation with the tyre supplier, and the team may be required to submit information such as lap charts and logger data to support a claim.

In determining whether a replacement will be allowed the decision of the Technical Director will be final.

- d) If a replacement tyre is granted, it must be of the same specification as the damaged tyre and selected at random by the Technical Director and/or his staff.
8. Should an exceptional and unpredictable safety problem arise for the tyre supplier during an event, so as to prevent riders from safely competing in the race, then the tyre supplier must inform the Technical Director and Race Direction of the problem as soon as possible.

A re-allocation of suitable tyres may be made under the supervision of the Technical Director. Such allocated tyres will be the same specification(s) and quantities for all riders, the quantity being determined by the tyre supplier in consultation with the Technical Director.

9. Tests, Moto3 Class:

- D) For all winter and post-race tests, each rider will be restricted in the quantity and specification of tyres they may use at a single test. The tyre supplier will determine the number of specifications and quantities it will bring to each test. Every rider present will receive the same allocation of standard tyre specifications and quantities.

The tyre supplier may choose to provide additional tyres of a different specification, for tyre development purposes. The allocation of any development tyres will be solely at the discretion of the tyre supplier.

2.6.4.10 Numbers and Backgrounds

1. The racing number must be affixed to the front of the motorcycle fairing in a central position. Rear or side numbers are optional.
2. Numbers should be a minimum height of 140 mm.
3. Numbers must be easily legible, in a clear simple font and contrast strongly with the background colour.

In the Moto3 class, numbers must be of one single colour which contrasts strongly with the background colour. A small outline in a different colour is permitted. Two-digit numbers must have a separation (min. 10 mm) between digits so the background colour is visible between digits. Reflective finishes (eg. silver, gold, etc.) are not permitted.

4. Backgrounds must be of one single colour over an area large enough to provide a minimum clear area of 25 mm around the numbers.

In the Moto3 class reflective finishes (eg. silver, gold, etc.) are not permitted.

5. In the Moto3 class, teams with more than one rider must differentiate between the riders by using different number and/or background colours.
6. In case of a dispute concerning the legibility of numbers, the decision of the Technical Director will be final.



2.6.5 General

2.6.5.1 Fuel and Oil

- 1. All motorcycles must be fuelled with unleaded petrol, which must comply with the FIM Grand Prix specification for each racing class.
- 2. Unleaded petrol will comply with the FIM Grand Prix specification if:
 - a) It has the following characteristics:

Property	Units	Min.	Max.	Test Method
RON		95.0	102.0	ISO 5164
MON		85.0	90.0	ISO 5163
Oxygen	% (m/m)		2.7	ISO 22854
Benzene	% (v/v)		1.0	ISO 22854
Vapour Pressure (DVPE)	kPa		90	EN 13016-1
Lead	mg/L		5.0	EN 237
Density at 15 °C	kg/m3	720.0	775.0	ASTM D 4052
Oxidation Stability	minutes	360		ASTM D 525
Existent gum	mg/100 mL		5.0	EN ISO 6246
Sulphur	mg/kg		10	ASTM D 5453
Nitrogen	% (m/m)		0.2	ASTM D 4629
Copper Corrosion	Rating		Class 1	ISO 2160
Distillation:				
At 70 °C	% (v/v)	22.0	50.0	ISO 3405
At 100 °C	% (v/v)	46.0	71.0	ISO 3405
At 150 °C	% (v/v)	75.0		ISO 3405
Final Boiling Point	°C		210.0	ISO 3405
Residue	% (v/v)		2.0	ISO 3405
Olefins(*)	% (v/v)		18.0	ISO 22854
Aromatics(*)	% (v/v)		35.0	ISO 22854
Total di-olefins	% m/m		1.0	GCMS / HPLC GCMS / HPLC
Appearance		clear and bright		visual inspection



All test methods include a precision statement. In cases of dispute, the procedures for resolving the dispute and interpretation of the results based on test method precision, described in ISO 4259, shall be used.

- b) The total of individual hydrocarbon components, containing only hydrogen and carbon, present at concentrations of less than 5% m/m must be at least 30% m/m of the fuel.

Compliance with the compositional regulation is calculated on the following basis:

$A = 100 - B - C$

where:

A is the total concentration (in % m/m) of individual hydrocarbon components present at concentrations less than 5 % m/m,

B is the total concentration (in % m/m) of oxygenates present in the fuel, and

C is the total concentration (in % m/m) of individual hydrocarbon components present at concentrations greater than 5% m/m.

The test method will be gas chromatography.

- c) The total concentration of naphthenes, olefins and aromatics in each carbon number group will not exceed the limits given in the following table.

% m/m	C4	C5	C6	C7	C8	C9+
Naphthenes	0	5	10	10	10	10
Olefins	5	20	20	15	10	10
Aromatics			1.2	35	35	30

Bicyclic and polycyclic olefins are not permitted. The fuel must contain no substances which are capable of exothermic reaction in the absence of external oxygen.

- d) Only the following oxygenates will be permitted:

Methanol, Ethanol, Iso-propyl alcohol, Iso-butyl alcohol, Methyl tertiary butyl ether, Ethyl tertiary butyl ether, Tertiary amyl methyl ether, Di-isopropyl ether, n-Propyl alcohol, Tertiary butyl alcohol, n-Butyl alcohol, Secondary butyl alcohol.

- e) Manganese (<1 mg/L), lead (<5 mg/L), iron (<5 mg/L) and nickel (<5 mg/L) additives are not permitted above these limits.
- f) In the Moto3 class, oil for engine lubrication will comply with the FIM Grand Prix Moto3 specification if it matches the reference fingerprint(s) for the official oil(s) of the relevant class, established by the appointed oil supplier.
- g) In the Moto3 class, the fuel and oil specification will be determined by the appointed fuel supplier and oil supplier in consultation with the Organisers and the official engine supplier and may be changed at any time by mutual agreement.

3. Moto3 class fuel and oil:

- a) Only fuel from the appointed fuel supplier is permitted. This fuel will be available at all official events, and will conform to the FIM Grand Prix specification. Use of this fuel without any addition or alteration is mandatory.
- b) Only engine oil from the appointed oil supplier is permitted to be used in all parts of the engine, including crankcase, gearbox and clutch. This oil will be available at all official events and will conform to the FIM Grand Prix specification for the relevant class. The use of the official oil without any addition or alteration is mandatory. The Technical Director may require that an oil sample be taken from any team or machine at any time.

5. Fuel and Oil Approval

- 1. All fuel in use in the Championship must be approved prior to the race in which the fuel is to be used. Fuel companies supplying petrol to participating teams must submit ten litres (2 x 5 L) to the laboratory appointed by the FIM/Dorna for analysis in accordance with the specification. Providing the petrol is within the specification, a certificate containing a test report number will be issued. The test report number must be given to the appropriate teams before they take part in a race.

2. All companies supplying oil, for engine lubrication in the Moto3 class, to participating teams must submit two litres (2 x 1 L) of the oil to the laboratory appointed by the FIM/Dorna for approval. If the oil conforms to the specifications, a certificate will be issued. The test report number given on the certificate must be supplied to teams which intend to use the oil.
3. During Thursday's technical control, each team will declare the certificate test report numbers corresponding to the petrol and oil to be used. This information will be entered in the Technical Control Book of each motorcycle at every Grand Prix.

Therefore, the fuel and oil which is to be used must be approved by the Thursday afternoon before the race in which the fuel is to be used.

4. When a fuel or oil sample is requested at any Grand Prix Circuit, either during practice, warm up or following the race, the certificate test report numbers corresponding to the petrol and oil used must be declared to the Grand Prix Technical Director by the team. Failure to provide the correct number will result in a fine.
5. Each fuel and/or oil Company will be responsible for payment to the laboratory for these batch analyses costs and establishment of the basic fingerprints.
6. Fuel and Oil Sampling and Testing
 1. The Grand Prix Technical Director will appoint a senior Technical Scrutineer to take responsibility for the administration and supervision of the fuel or oil sampling procedure.
 2. Motorcycles selected for fuel or oil controls will usually be amongst the first three finishers, and will be directed to the "parc fermé" for technical controls.
 3. Other finishers may be chosen at random for fuel or oil controls. A Technical Scrutineer will be posted at the entrance to the pit box of the selected rider(s) whose machine must immediately accompany the Technical Scrutineer to the technical control area or "parc fermé".

4. The fuel or oil to be tested will be transferred into two bottles, “A” and “B” identified by reference to the rider, team and machine from which the sample was taken. The bottles will be closed, sealed and labelled by the Technical Director and/or Technical Scrutineer.
5. Only new bottles will be used for the samples and only new materials will be used to transfer the fuel or oil.
6. The Fuel/Oil Sample Declaration form will be filled out immediately, containing all necessary information, including the riders and machines identity, date and place of fuel or oil sampling. A responsible team member will sign this declaration, after verifying that all the information is correct.
7. Sample “A” will be sent to the official appointed laboratory, accompanied by a copy of the Fuel/Oil Sample Declaration form. The fuel or oil sample will be compared with the approved fuel or oil. If necessary the concentration of other elements, including lead, manganese, iron, nickel, nitrogen and oxygen may be measured at the request of the Technical Director to ensure that octane and power boosters have not been added.

If any observed deviations indicate that they are due to mixing with one other fuel, which has been approved by the FIM/Dorna for use by the team, the fuel sample will be deemed to comply, provided the fuel sample still falls within FIM Grand Prix specification as described in Article 2.6.5.1.2.

Costs for the analyses of sample “A” will be paid by FIM/Dorna.

8. Sample “B” will be handed over to the FIM designated storage facility for safeguarding in case of protests and/or requirement of a counter analysis by the appointed laboratory. Costs for the analyses of sample “B” will be paid by the team concerned.
9. Both samples will be transported by an authorised courier.

10. The laboratory must deliver the results of the fuel sample analyses to the Grand Prix Technical Director, with a copy to the FIM MotoGP Stewards, as soon as possible after receipt of the samples.
11. In the case of non-conformity, the Technical Director must notify, as soon as practical after receipt of the results, the FIM MotoGP Stewards, the Grand Prix Race Direction and the rider/team representative concerned.

Within 48 hours of the receipt of the notification of the results of the laboratory test of sample “A”, the team must notify the FIM MotoGP Stewards and the Technical Director if counter-expertise is required (or not required) for sample “B”.

The FIM MotoGP Stewards Panel will take a decision at the Grand Prix event immediately following the notification of the results of the final expertise. Any appeal against the decision of the FIM MotoGP Stewards Panel will be heard by the FIM Appeal Stewards appointed for the Grand Prix event at which the FIM MotoGP Stewards Panel decision is taken.

If there is no more Grand Prix following the notification of the results of the final expertise, the FIM MotoGP Stewards Panel will take a decision as soon as practical. Any appeal against the decision of the FIM MotoGP Stewards Panel will be heard by the FIM Appeal Stewards appointed by the FIM for this specific task.

12. The director of fuel analysis at the official laboratory must confirm to the Technical Director that the identification and the seal status of the “B” sample is correct before any B sample analysis is carried out.
13. Failure of the sample to comply to approved petrol or oil and/or the addition of octane and power boosters, as described in Article 2.6.5.1.6.7, will automatically result in the disqualification of the competitor from the entire meeting.

The result of the competitor’s fuel or oil sample analysis (“A” or “B” sample) more favourable to the competitor will be taken into account.

7. Fuel Temperature

In the Moto3 class fuel on the motorcycle must not be below the prevailing ambient temperature, as measured by the Technical Director. Other than a simple removable fuel tank cover, the use of any device on the motorcycle to artificially decrease the fuel temperature below ambient temperature is forbidden.

8. Fuel Handling Safety

- The use of anti-static mats and grounding wrist straps is mandatory when filling fuel containers used for transferring fuel to **and from** motorcycles.
- The use of approved fuel fillers/fuel dumps is mandatory when adding **or removing** fuel to/from motorcycle fuel tanks.
- All fuel handling equipment must be approved by the Technical Director.

2.6.5.2 Rider's Safety Equipment

1. It is compulsory that each contracted rider must begin each race event with at least two complete sets of undamaged safety equipment. A complete set of safety equipment shall contain:
 - Helmet
 - Leather Suit, 1-piece
 - Gloves
 - Boots
 - Back Protector
 - Chest Protector

The equipment must be worn, correctly fastened, at all times during on-track activity.

2. Safety Equipment Control

- a) At Technical Control at the first race of the season, one complete set of undamaged safety equipment (as listed in Art. 2.6.5.2.1) must be presented and checked for the following:
- Helmet: FIM Homologation Label indicating valid FIM homologation.
 - Leather Suit, Boots, Gloves: the model names of each of these items must correspond to the Self Certifications previously supplied to the Technical Director.
 - Back Protector: a marking indicating certification to EN1621-2:2014 or to prEN1621-2:2010.
 - Chest Protector: a marking indicating conformity with the standards specified in 2.6.5.2.3.c.v) below.
- b) At any time during the season, the Technical Director may request a piece of rider's equipment in order to check that it meets the requirements listed in Art. 2.6.5.2.3. The item of equipment will be sent to the official appointed laboratory for testing. Supply of equipment and test results as follows:
- The manufacturer of the equipment may be asked to supply a duplicate item of equipment for testing.
 - Equipment damaged after an accident may be taken and tested on an undamaged portion.
 - In the event that the item tested fails to meet the required standard, the manufacturer may request a further test, at their cost, on a duplicate item of used equipment.
 - In the event that the first test and/or optional retest are still negative, the Self Certification provided by the manufacturer will be suspended and the manufacturer shall have 30 days to rectify the problem and demonstrate this.
 - In the event that the problem is not rectified in this time, the manufacturer shall not be permitted to supply any new equipment of the failed type.



3. FIM Rider’s Equipment Minimum Requirements (REMR)

a) Standards for Helmet and Visor

Only FIM homologated helmets according to FRHPhe-01 (with a valid FIM Homologation Label) will be allowed.

A list of FIM Homologated helmets is available on www.frhp.org.

FRHPhe-01 (FIM)	
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- Disposable visor “tear-offs” are permitted.
- b) Certification for Leather Suit & Airbag system, Gloves, Boots, Back Protectors

All rider’s safety equipment must comply with the requirements detailed in Art. 2.6.5.2.3.c) Sections i to vi, below. The following procedures will apply:

- A sample of each different design or model must pass all the tests described in the FIM Standards, Table 1 below, or in the case of Airbag systems, the FIM Requirements for Grand Prix Airbags 2018.
- Every example of this design or model must be identified with the model code by a permanent marking.
- Each individual design or model that has passed the tests will be self-certified by the manufacturer, using the official document, stating that the item conforms to the FIM requirements.
- A copy of this Certificate must be sent to the MotoGP Technical Director (Danny Aldridge, danny@irta.org.uk) and to the FIM Racing Homologation Programme (frhp@fim.ch).

- For leather suits only, the manufacturer must complete and maintain the 'Riders Race Suit Database' file for each of their riders.
 - This database must be submitted to the MotoGP Technical Director, and updated each time a leather suit is supplied to or withdrawn from a rider.
 - The Technical Director and the rider also have the right to withdraw a race suit from the database.
- c) Standards for Leather Suit, Gloves, Boots, Back & Chest Protectors
- i) Leather Suit
- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 1.
 - The use of abrasion-resistant stretch material is permitted up to a maximum of 50% of the surface area, provided that the requirements of Table 1, column 2 are met.
 - The use of sliders (specific parts of the riders safety equipment, either permanently fixed or removable, intended to make regular contact with the track surface to assist the rider while cornering), is permitted on the knees, elbows or any other parts of the race suit, where it is deemed necessary. They must not be manufactured from or contain any material that when in contact with the track surface may cause visual or other disturbance to other riders.
 - Shall contain armour certified to EN1621-1:2012 in the shoulders, elbows, knees, and legs.

- It is mandatory for the leather suit to be fitted with an Airbag system, with the following requirements:
 - All Airbag systems must be approved according to clause b), above.
 - Every rider must start each track session with a functional Airbag system. Once the airbag has been deployed, the responsibility for continuing the practice or race rests with the rider. (For the purposes of this regulation, Moto3 Q1 and Q2 are considered as one track session)
 - For substitute or replacement riders, the use of an Airbag system is recommended for their first event of the season, and is compulsory for any further events of that season.
 - For Wild Card riders the use of an Airbag system is compulsory. Wild Card riders equipment must be presented to Technical Control for inspection prior to the start of the event.

ii) Gloves

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 3.
- Shall have a cuff length sufficient to overlap the leather suit by at least 50 mm.
- Shall have a means of fastening to secure them to the hand (an elastic closure alone is not acceptable).
- Shall have suitable knuckle protection.

iii) Boots

- Shall be constructed from leather or an equivalent material which satisfies the requirements of Table 1, column 4.
- Flexing zones are permitted up to a maximum of 40% of surface area, provided that they comply with the requirements of Table 1, column 5.
- Shall have a minimum height sufficient to overlap the leather suit by at least 70 mm.
- Shall have a means of fastening to secure them to the foot (a slip-on boot is not acceptable).

iv) Back Protector

- Must be certified to EN1621-2:2014 or prEN1621-2:2010.
- May be full back or central back configuration.

v) Chest Protector

- Full chest protectors (protector designed as a single piece) and Divided chest protectors (protector designed in two separate halves) are permitted.
- All types of chest protectors (Full or Divided) must have a minimum protection area of no less than 230 cm².
- **Only protectors** in conformity with prEN1621-3 (level 1 or 2) are permitted.

vi) Marking

- When an equipment manufacturer has tested and proven that the safety equipment in question meets the relevant requirements in paragraphs i) to vi) above, and Table 1 below, they shall attach a permanent marking stating the model number of the product.
- The marking of race suits must additionally contain a unique serial number.



Table 1.
Material Properties

		1	2	3	4	5
TEST	Test Method	Suit Leather or main material	Suit Stretch Areas	Gloves Palm & Back Areas	Boots All Areas	Boots Flex Areas
Tear	ISO 3377-1 or EN388 (N)	≥50	≥50	≥30	≥100	≥60
Abrasion	EN388 (cycles)	≥600	≥400	≥300	≥800	≥500
Seam	EN13935-1 (Suit, Boot) EN13594 (Gloves)	≥12	≥12	≥8	≥15	≥15

4. Post-crash Riders Safety Equipment Check

After a crash the Technical Director may at his discretion request that the rider’s safety equipment is checked prior to the start of the following practice session, warm up or race.

In the event that any item of equipment is considered, by either the Technical Director or the representative of the manufacturer of the item, to be too damaged for use on track, the rider will be required to replace or repair the item before being permitted on track.

Any question concerning the condition and suitability for use of the riders safety equipment shall be decided by the Technical Director, who may consult with the manufacturers of the product before making a final decision.

2.6.5.3 Procedures for Technical Control

1. At each circuit an area must be designated as the Technical Checking Area. In this area, under the control of the Chief Technical Scrutineer and the supervision of the Technical Director, suitable equipment will be installed to conduct the various tests viz:
 - i) Equipment for measuring the noise of the motorcycle.
 - ii) Weighing scales with check weights for calibration purposes.
 - iii) Instruments for measuring engine capacity.
 - iv) Instruments and gauges as necessary for measuring other dimensions and criteria specified in the Technical Regulations.
2. The technical control procedure will be carried out in accordance with the schedule set out in the Regulations. The technical scrutineers must be available throughout the event to check motorcycles and equipment as required by the Technical Director.
3. Presentation of a machine will be deemed as an implicit statement of conformity with the technical regulations. Responsibility for the preparation of the machine to comply with all technical and safety regulations rests with the team.
4. A rider's presence at the initial technical control is not mandatory, except in the case of the Moto3 class when the rider must be present for a weight check together with his helmet and all protective clothing.
5. Motorcycles will be inspected under the name of the team and at the initial technical control each motorcycle will be registered by the technical scrutineers who will prepare a technical control card to record technical specifications, check results and the riders in that team entitled to use the motorcycle.
6. At the initial technical control the technical scrutineers should inspect the motorcycle to record technical details including weight (plus rider weight in the Moto3 class), noise level and may also check the motorcycle for technical compliance with other aspects of the Regulations, as requested by the Technical Director.

8. At each event, at the conclusion of technical control procedures prior to the first practice, the technical scrutineers will place a small sticker on the motorcycle indicating that it has been registered for use by the team's rider(s) for that race and passed the technical control procedures.
9. The Chief Technical Scrutineer will prepare a report on the results of technical control which, will be submitted to the Event Management Committee via the Technical Director.
10. The technical scrutineers should re-inspect any machine that has been involved in an accident, and if necessary to issue a new technical control sticker for a rebuilt machine. This would normally be carried out at the pit of the rider concerned. The team has sole responsibility for any repairs carried out, and to determine when the machine is fit for further use.
11. The technical scrutineers must be available, based on instructions from the Technical Director, to re-inspect any motorcycle for technical compliance during the meeting or after the race and to supervise inspection of a motorcycle following a protest on a technical matter.
12. At the end of the race, the Chief Technical Scrutineer will ensure that the motorcycles placed in the first three positions, plus any other motorcycles designated by the Technical Director, are placed in the Check Area for a period of 60 minutes pending any protest.

The motorcycles may be checked for compliance with any of the FIM Grand Prix technical regulations, and any other technical requirement at the discretion of, under the control of and as requested by the Technical Director.

13. The Technical Director may require a team to provide such parts or samples as he may deem necessary.
14. In the case that a machine fails post-qualifying or post-race technical checks due to damage or technical issues on-track, the following protocol will apply, always at the sole discretion of the MotoGP Technical Director.

a) Machines under the minimum weight limit due to:

i) **Loss of fluid.**

- If the Technical Director has verified that there is physical evidence of fluid loss due to an incident or mechanical issue on track, he may approve the fluid to be replenished to the levels as declared by the Manufacturer at the start of the season.
- If it is necessary to replace a damaged part to accommodate the fluid (eg. radiator), this will be permitted only under the supervision of the Technical Director who will confirm that the new part is identical to the damaged part. In the MotoGP class, the Technical Director may require that the replacement part is taken from the rider's second machine.

ii) **Loss of material or parts.**

- If the Technical Director has verified that the machine has lost a part or material due to an incident or mechanical issue on track, he may approve the replacement of the part(s) with the following conditions:
- The Technical Director must verify that any new parts are identical to the original.
- If the Technical Director determines that there is insufficient physical evidence to prove that a part or material is missing, then the original part must be found before it can be replaced.
- Missing ballast weights will only be permitted to be replaced if they are found and returned to Technical Control by the circuit officials.

b) Machines exceeding the maximum noise levels:

- If the Technical Director is satisfied that there is sufficient physical evidence of damage or loss due to an incident or mechanical issue on track, he may approve the replacement of the missing or damaged exhaust parts, and the machine to be re-tested.



- In the MotoGP class the Technical Director may require that the exhaust parts from the rider’s second machine be used for such replacement.

2.6.5.4 Noise Tests

1. Noise tests must be conducted in an open area with a space of at least 10 metres between the motorcycle being tested and walls or other obstacles. There should be a minimum amount of ambient noise in the area.
2. The measuring equipment must be calibrated prior to the test and recalibrated at regular intervals.
3. The measuring equipment should be placed 50 cm from the end of the exhaust pipe and at 45 degree angle to the pipe either to the side or above.
4. The maximum noise levels at all times are:

Moto3: 115 dB/A

For convenience, the test may be conducted at a fixed RPM.

	1 cylinder	2 cylinders	3 cylinders	4 cylinders
Moto3	5,500 rpm	5'500 rpm	5'500 rpm	5'500 rpm

2.6.6 Wild Card Technical Regulations

Wild Card entries are subject to all of the above Moto3 technical regulations, with the following conditions:

1. Each Wild Card entry is allowed a maximum of 2 engines for their exclusive use during each event.
2. Wild Card entries may use engines from any manufacturer currently competing in the FIM Grand Prix World Championship Moto3 Class or the FIM CEV Moto3 Junior World Championship, provided such engines meet the current FIM World Championship Grand Prix regulations.

Such engines may be a currently approved engine or any previously approved engine from the 2015, 2016, 2017, **2018**, **2019** seasons of the relevant championship, provided such engines meet the current FIM World Championship Grand Prix regulations.

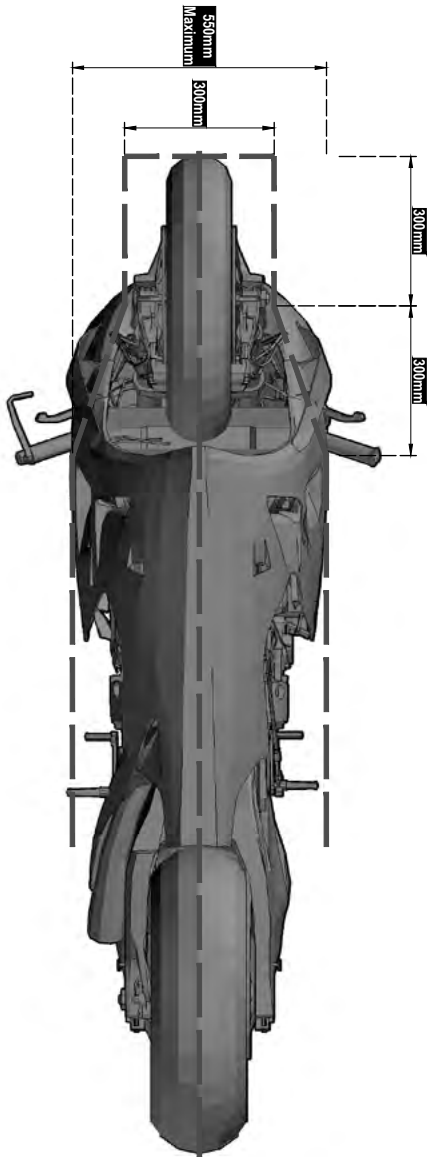
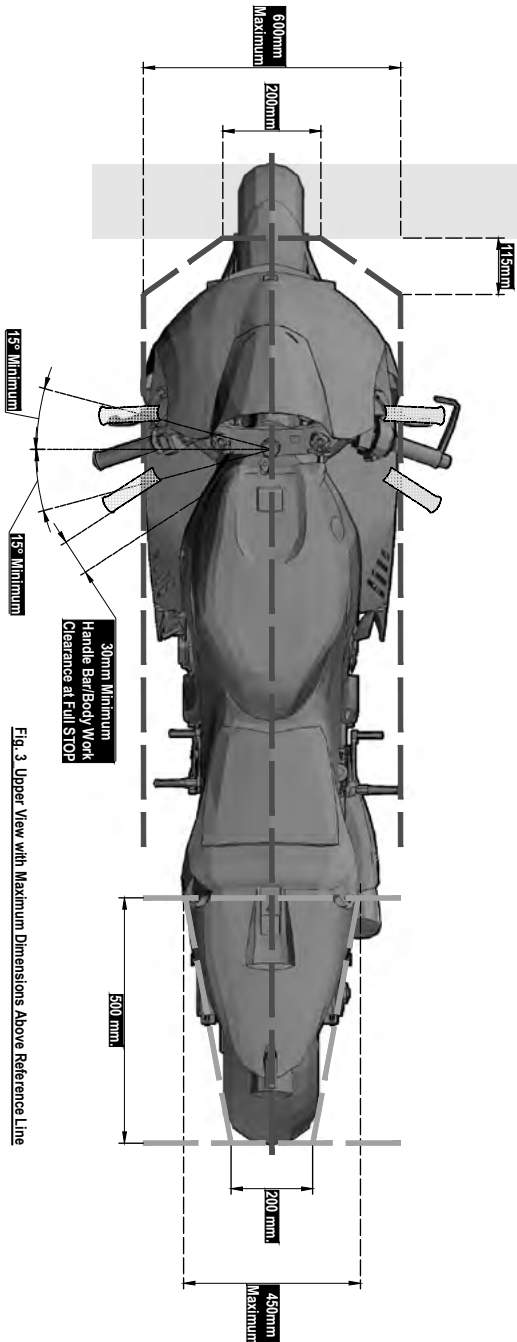
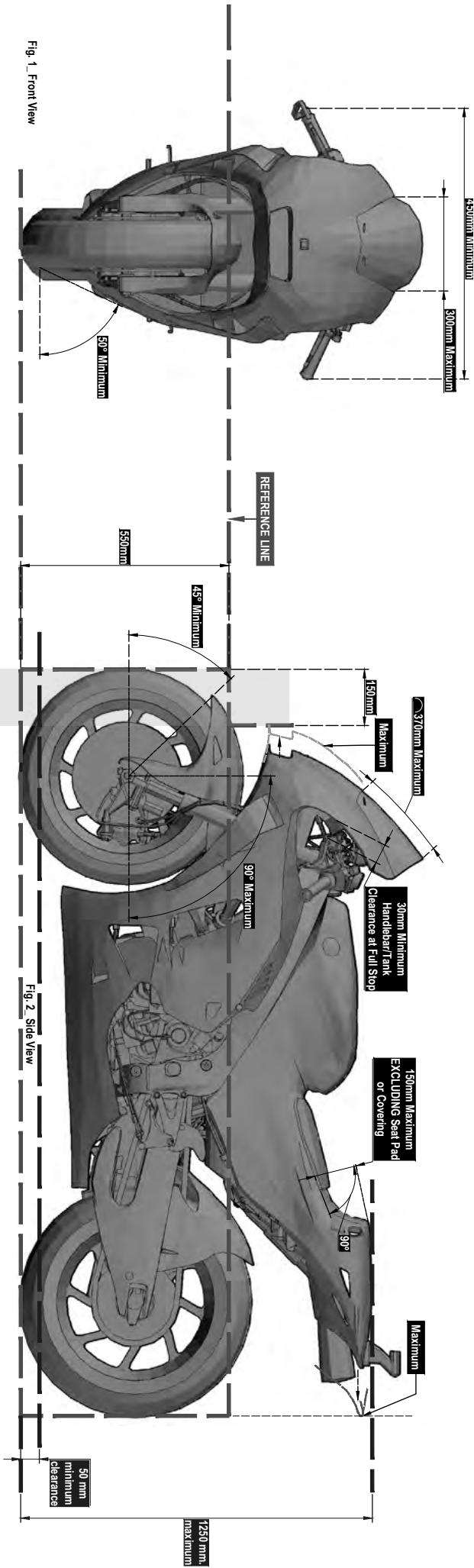
Moto3

In every case, Wild Card entries must declare to the relevant manufacturer the specification of engine they wish to use, to ensure it is compatible with the manufacturer's approved ECU mapping for that event. The Wild Card entry must present to the Technical Director written proof of approval from the manufacturer at pre-event technical control.

3. Wild Card entries must comply with the current bodywork regulations (Art. 2.6.4.7).
4. Prior to the close of Technical Control at the Wild Card's first event of the season, the team must provide the following information, to the satisfaction of the Technical Director:
 - Gearbox ratios
5. Riders Safety Equipment for Wild Card entries (Art. 2.6.5.2):
 - Any safety equipment which does not show an approved model number and serial number will be subject to approval for use by the Technical Director.
 - It is the responsibility of all wildcards to make sure that their airbag system meets the current FIM Regulations which must be presented to technical control along with all other safety equipment for inspection, prior to the start of the event.
 - The use of an Airbag system in the leather suit must be in accordance with Art 2.6.5.2.3.

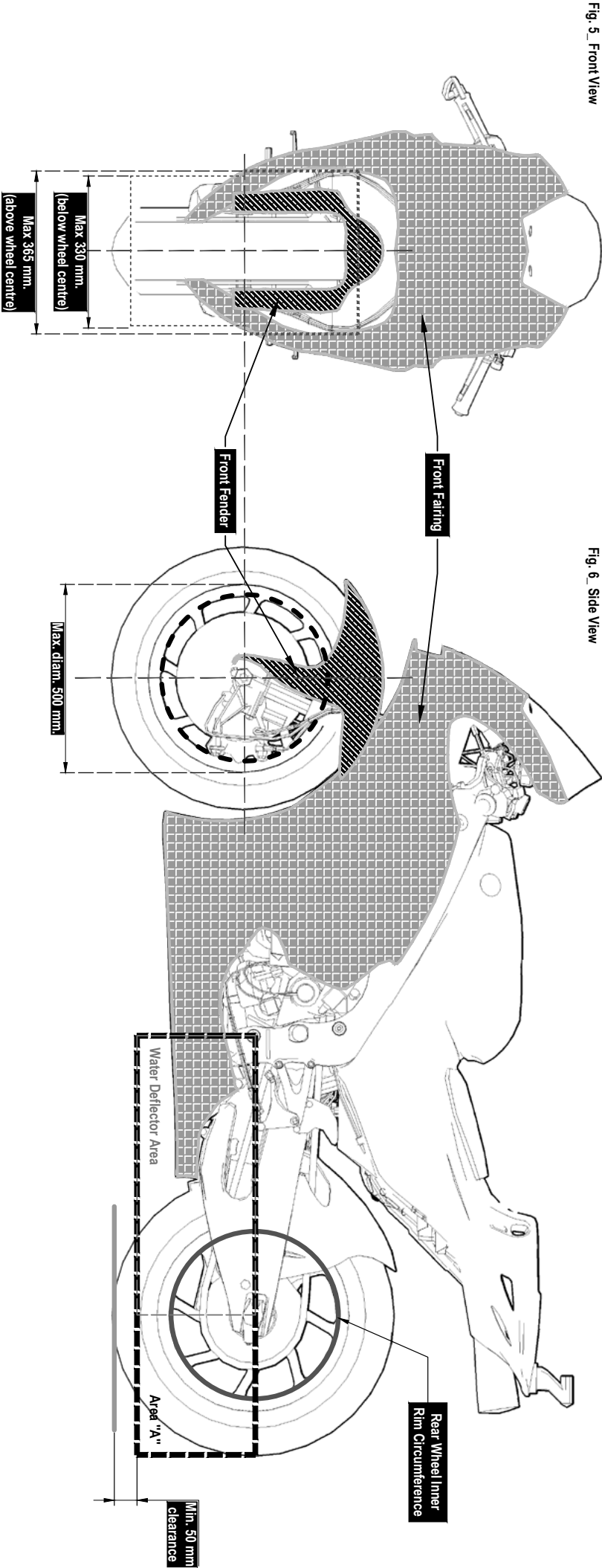


General: Fig. 1, Fig. 2, Fig. 3, Fig. 4: Bodywork Dimensions, MotoGP

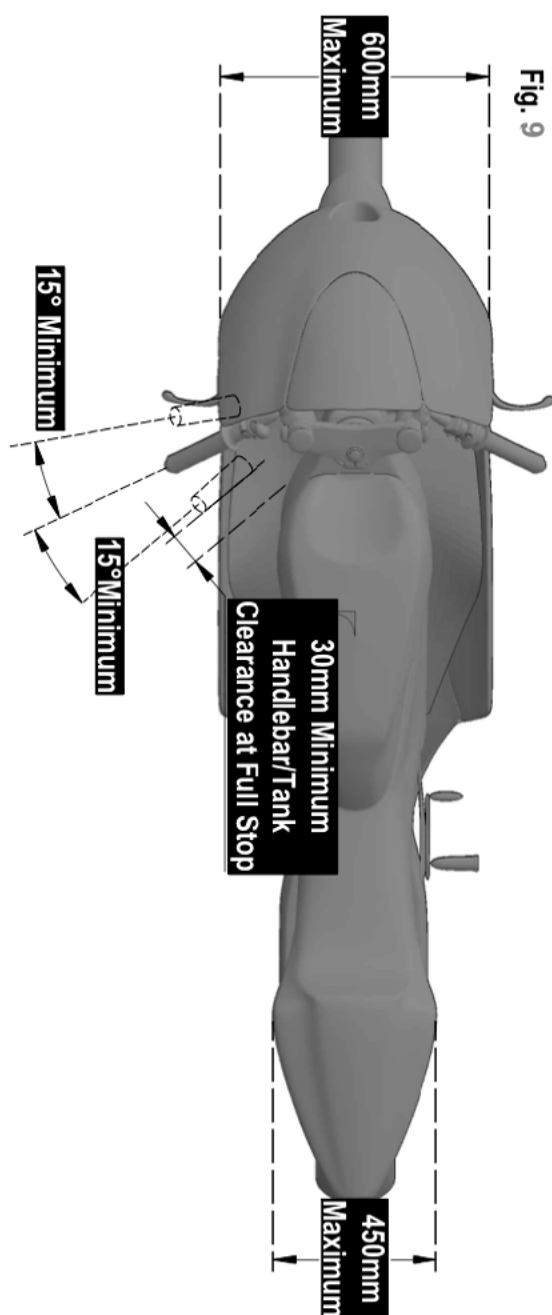
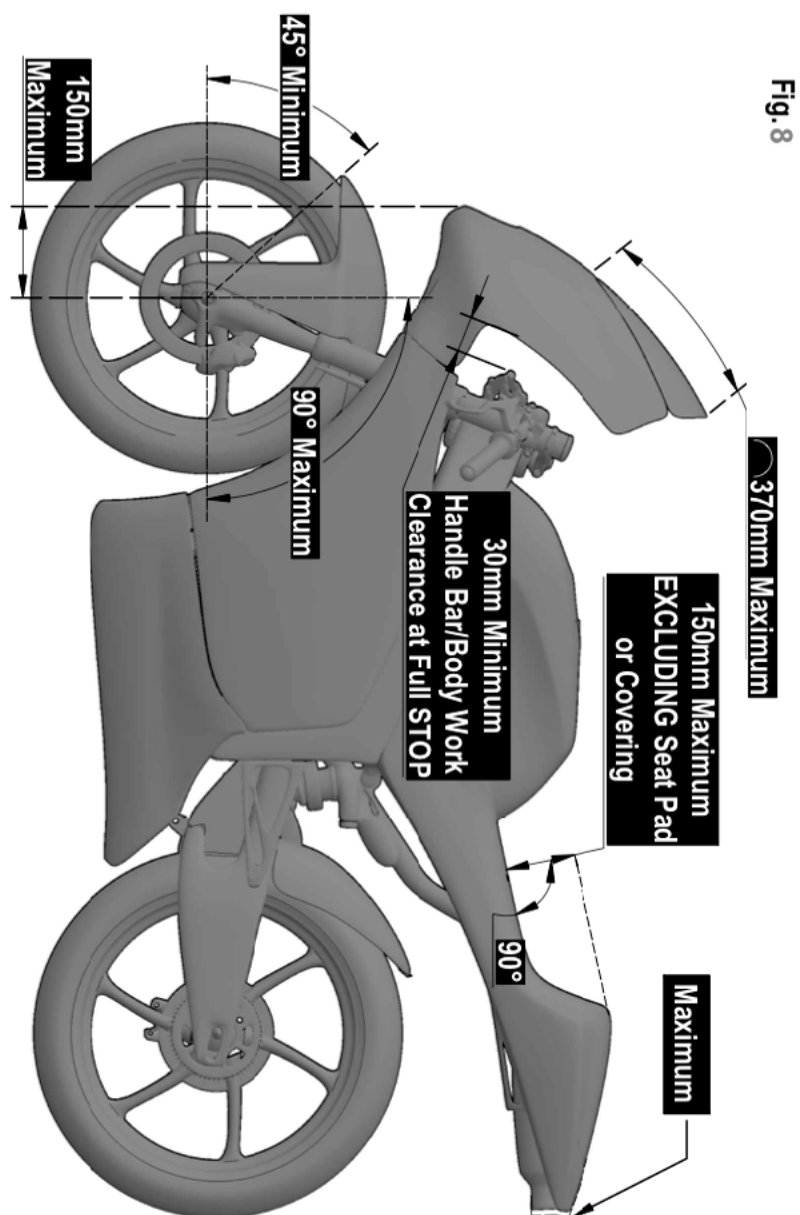
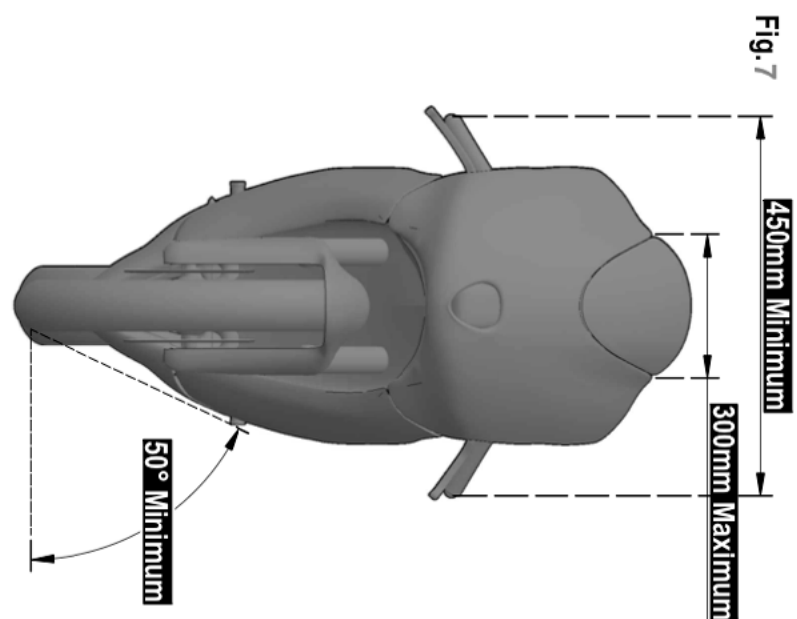




General: Fig. 5, Fig. 6: Aero Body Definition, MotoGP

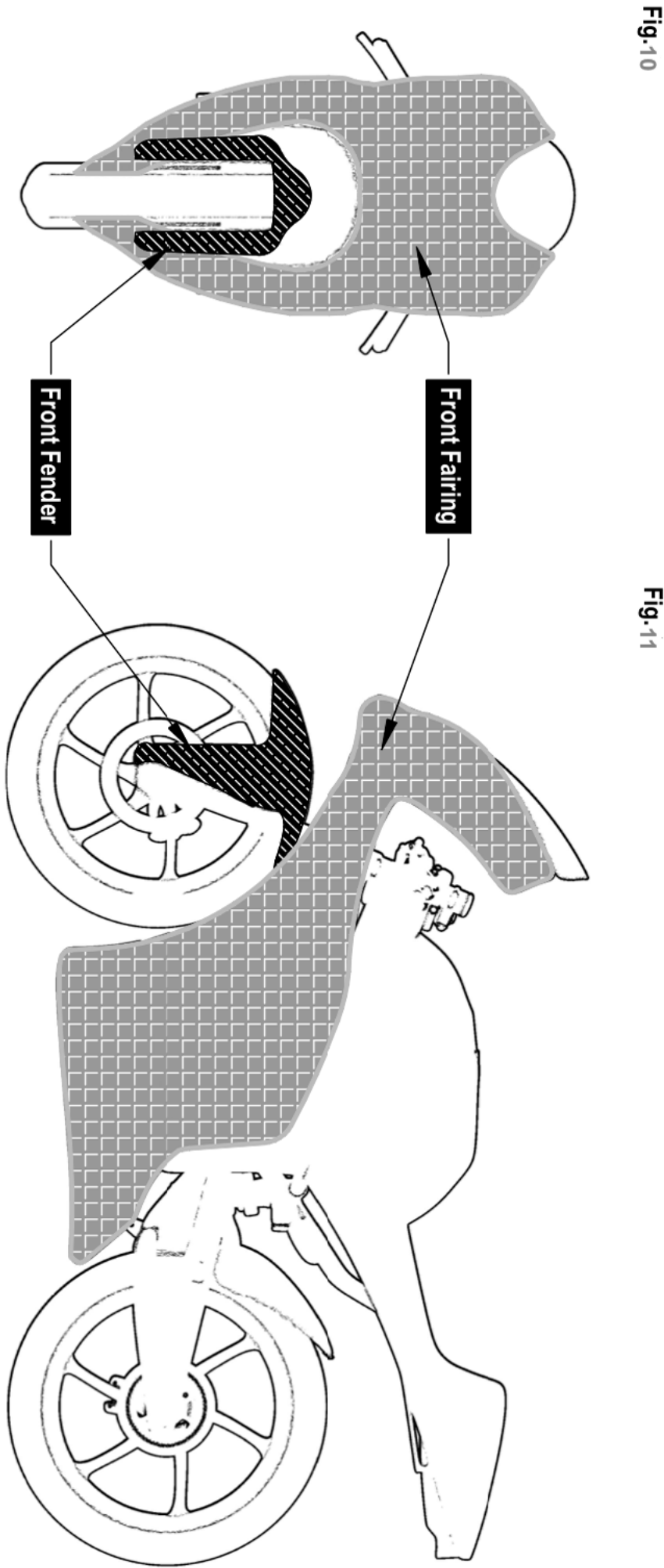


General: Fig. 7, Fig. 8, Fig. 9 : Bodywork Dimensions, Moto2, Moto3





General: Fig. 10, Fig. 11: Aero Body Definition, Moto2, Moto3



General: Fig. 12: Dashboard Display Signals

The signals in the following table may be transmitted by Race Direction using the Timekeeping transponder. Dashboard display signals may be updated as required with the approval of the Technical Director, Race Direction and MSMA. Refer to the Technical Director for the updated list.

All machines must have a system approved by the Technical Director to clearly display these signals to the rider, complying with the following:

- The following text messages (TEXT in the table below) are displayed, combined with a yellow light or lights (flashing or steady). The minimum text character dimension is 5 mm in height.
- Information lights used for other purposes may not be used to also convey Race Direction signals, to ensure there is no confusion over signals.
- The signal light(s) must have adequate brightness.

SIGNAL	TEXT	INFORMATION SENT	CANCELLATION
Red Flag	RED FLAG	To all bikes in all parts of the circuit	Cancelled by Race Direction only
Black Flag	BLACKFLG	To individual bike in all parts of the circuit	Cancelled by Race Direction only
Black Flag/Orange Disc	BLKORANG	To individual bike in all parts of the circuit	Cancelled by Race Direction only
Drop Positions *	DROP-##	To individual bike in all parts of the circuit	Cancelled by Race Direction only
Ride Through	RIDETHRO	To individual bike in all parts of the circuit	Cancelled by Race Direction only
Track limits warning	TRKLIMIT	To individual bike in all parts of circuit for limited time	Cancelled by Race Direction only**
Blue flag	BLUEFLAG	To individual bike in all parts of circuit for limited time	Cancelled by Race Direction only
Chequered Flag	CHEQFLAG	To each bike as it crosses finish line end of session	Cancelled when speed less than 15 km/h
Time Penalty *	TPEN#.#	To individual bike in all parts of circuit for limited time	Cancelled by Race Direction only**
Long Lap Penalty	LONG LAP	To individual bike in all parts of circuit	Cancelled by Race Direction only**
Double Long Lap	L LAP X2	To individual bike in all parts of circuit	Cancelled by Race Direction only**

* Where “#” signifies a numerical value which is recommended but not compulsory to be displayed.

** It is permitted for these messages to be overwritten by the team when necessary to display engine warning messages.

Virtual Pit Board messaging systems (MotoGP class):

Virtual Pit Board (VPB) systems are optional, but if used they must follow the regularly updated technical protocols issued by Dorna Timekeeping and available from the MotoGP Technical Director, Danny Aldridge (danny@irta.org.uk). The dashboard must display exactly the same message as that sent by the team and received by Timekeeping/TV, following the protocols in the current VPB documents.

MotoGP: Fig. 1: MotoGP Data Download Cable



ECU-PC connector 1.0

Specifications of ECU-PC connector

Following table shows the main specifications of a connector will be requested on the bike system to permit DORNA/FIM/MMM people to have access ECU and other modules of DORNA Kit.

Connector bike side:

Deutsch AS0 10-35 SN (flange type)

or

Deutsch AS1 10-35 SN (in line type)

Connector PC side:

Deutsch AS6 10-35 PN (plug type)

Pin	Description
1	GND → to Jump Battery, if any
2	GND → to Jump Battery, if any
3	+12V → to Jump Battery, if any
4	+12V → to Jump Battery, if any
5	ENCP (global ENCP for all devices)
6	ETH_Rx_P
7	ETH_Rx_N
8	ETH_Tx_P
9	ETH_Tx_N
10	CAN1_P (CAN 1A of ECU)
11	CAN1_N
12	CAN2_P (CAN2A of ECU)
13	CAN2_N

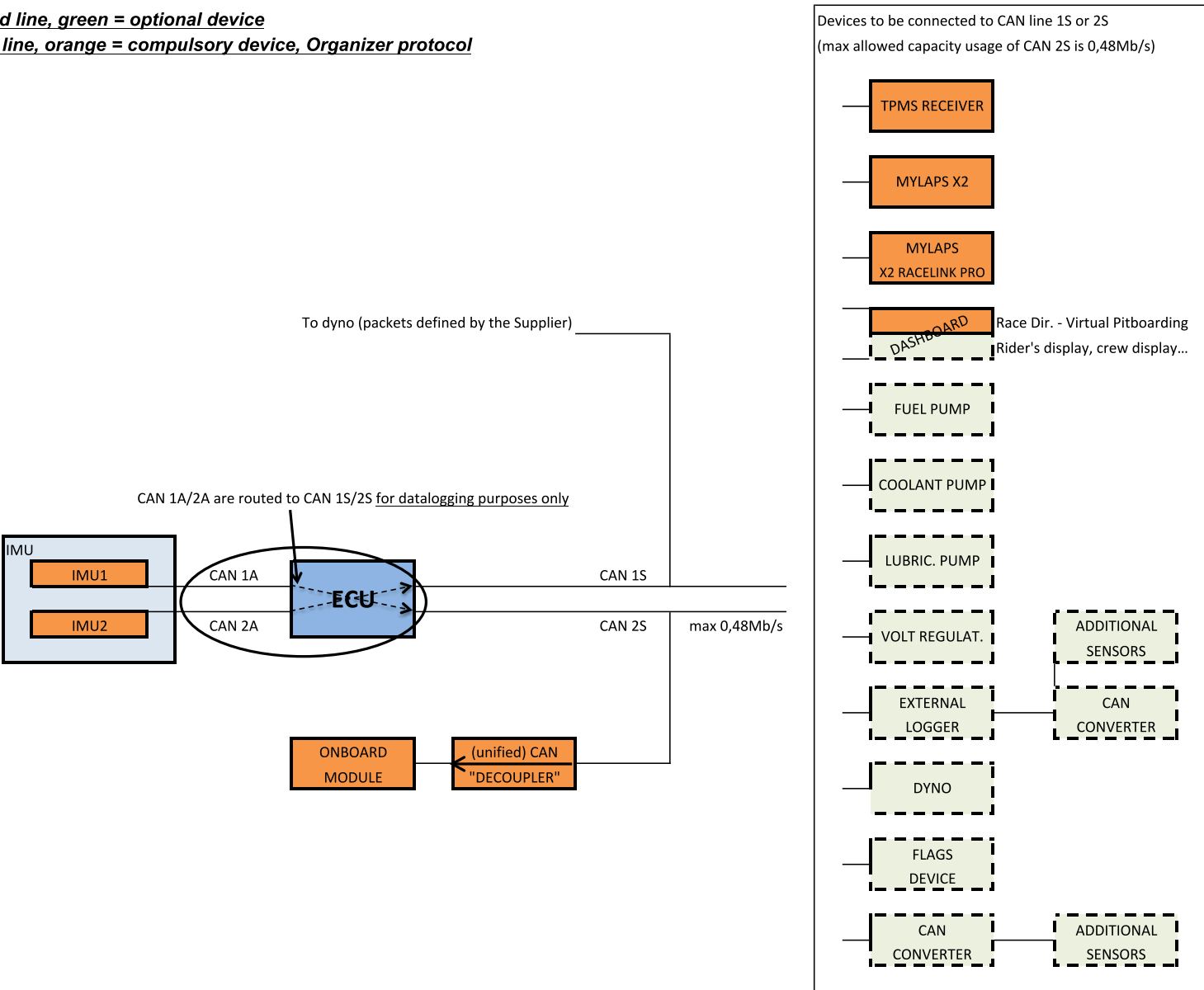
On the PC side a switch must be provided to connect to ground the ENCP pin in case of software download will be required.



MotoGP: Fig. 2: MotoGP ECU Connections

MotoGP CAN ECU connections - from 2020-on

Dotted line, green = optional device
Solid line, orange = compulsory device, Organizer protocol

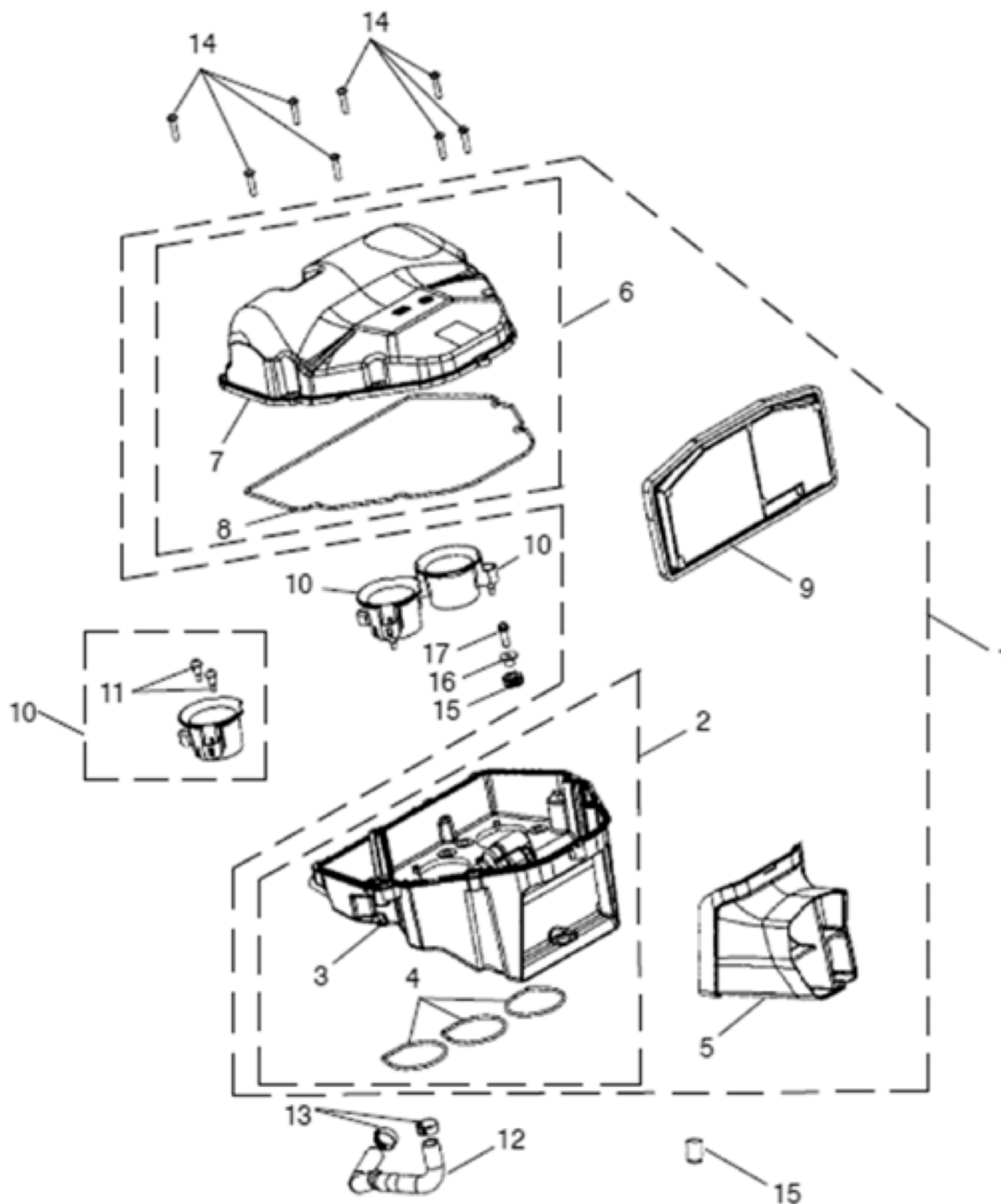


2020-on ECU connections 01.xlsx

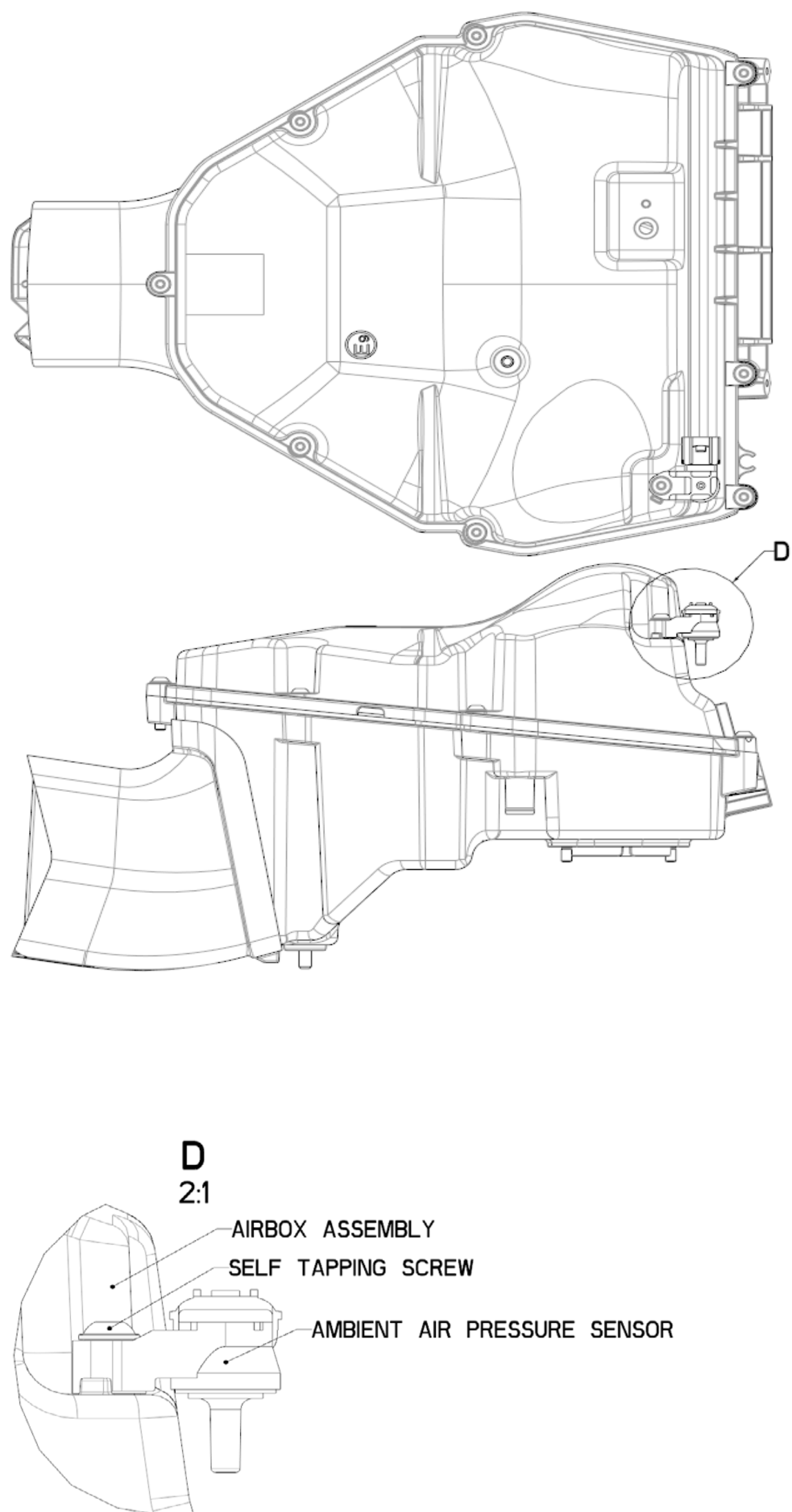
Moto2: Fig. 1: Moto2 Airbox

The main airbox body, including all parts as supplied must be original, unmodified, and is mandatory.

The transition duct, airbox to headstock (item 5 in the diagram) may be replaced or modified.

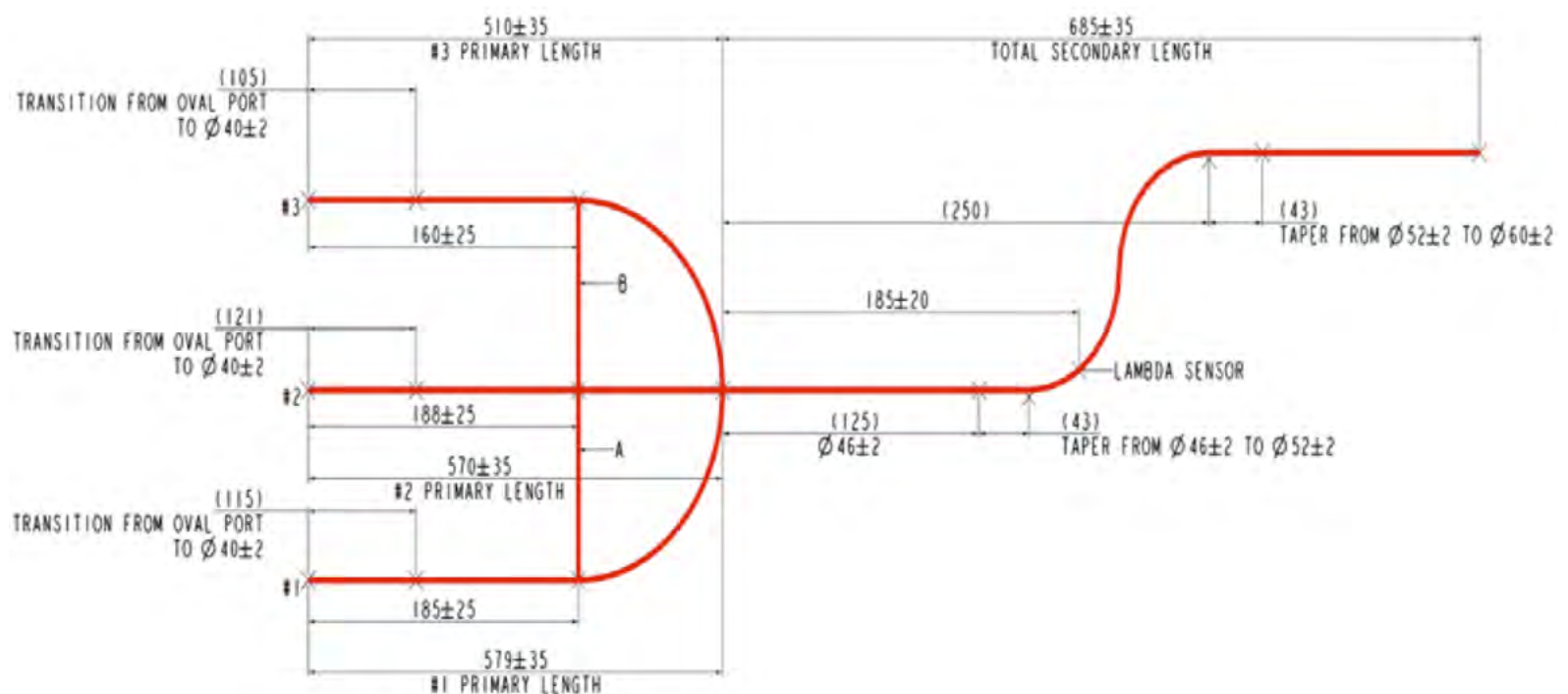


Moto2: Fig. 2: Ambient Air Pressure Sensor position



Moto2: Fig. 3: Moto2 Exhaust specification

- Design and construction of the exhaust system must conform to the official engine supplier's layout as shown below. That is, a 3-into-1 design respecting all dimensions and tolerances for pipe lengths and diameters.
- Pipe lengths are measured externally along the centre line of the pipe, between the median of the inner and outer lengths.
- A and B; balance pipes, internal diameter $\varnothing 18 \text{ mm} \pm 2 \text{ mm}$, internal hole (where balance pipe meets exhaust pipe) diameter $\varnothing 15 \text{ mm} \pm 1 \text{ mm}$.
- All pipe diameters shown are internal diameters.



Moto2: Fig. 4: Moto2 Compulsory Sensors

Refer to the FIM website (<http://www.fim-live.com/en/library/>), for the updated list of approved free sensors.

Moto2 COMPULSORY SENSORS - 2019				
CHASSIS				
	TYPE	FUNCTION	UNIFIED	NOTES
1	Pressure sensor	Fuel pressure	2D SA-PK010M10HT-xxx	Supply voltage 12V. "xxx" digits depending on the chassis make/model.
2	Force transducer	Gear shifter load cell	MMM 083813359100	
3	Linear potentiometer	Fork travel	**NO	0-5V output; 150 mm.
4	Linear potentiometer	Shock travel	**NO	0-5V output; 75 or 100 mm.
5	Pressure sensor	Front brake pressure	**NO	0-5V output
6	Pressure sensor	Rear brake pressure	**NO	0-5V output
7	Digital switch	Kill switch	**NO	ECU Digital input
8	Hall effect pick up	Front wheel speed	**NO	5V supply or 12V supply - 2 needed for recovery strategies.
9	Hall effect pick up	Rear wheel speed	**NO	5V supply or 12V supply.
10	Linear lambda sensor	A/F ratio	NGK LZA03 or NGK LZA08 or Bosch LSU4.9	One sensor only, 3 options available; PIN layout and harness wiring must match
11	TPS	Rear tire pressure	**NO	* see approved receiver. "xxx" digits depending on the chassis make/model.
12	TPS receiver	Rear tire pressure	**NO	* see approved TPS. "xxx" digits depending on the chassis make/model.
ENGINE				
	TYPE	FUNCTION	UNIFIED	NOTES
1	Magnetic pick up	Rpm pickup	Triumph part of 1300053	Crank signal
2	Hall effect pick up	CAM	Triumph 1290264	Cam signal
3	Rotative potentiometer	Grip position	**NO	0-5V output.
4	Rotative potentiometer	Throttle position	Triumph part of 1243415	
5	Rotative potentiometer	Gearbox drum position	Triumph 1299876	
6	Temperature sensor	Intake air temp.	Triumph 1290088	
7	Temperature sensor	Coolant temp.	Triumph 2100807	
8	Pressure sensor	Ambient air press.	Triumph 1290975	
9	Pressure switch	Oil pressure	Triumph 1210091	
10	Hall effect pick up	Gear speed sensor	Triumph 1290221	

Moto2 OPTIONAL SENSORS - 2019-on				
CHASSIS				
	TYPE	FUNCTION	UNIFIED	NOTES
1	TPS	Front tire pressure	**NO	* see approved receiver
2	Potentiometer	-	**NO	Up to a total of 2 x 0-5V additional rotary/linear potentiometers (e.g. steering position, clutch lever position...)

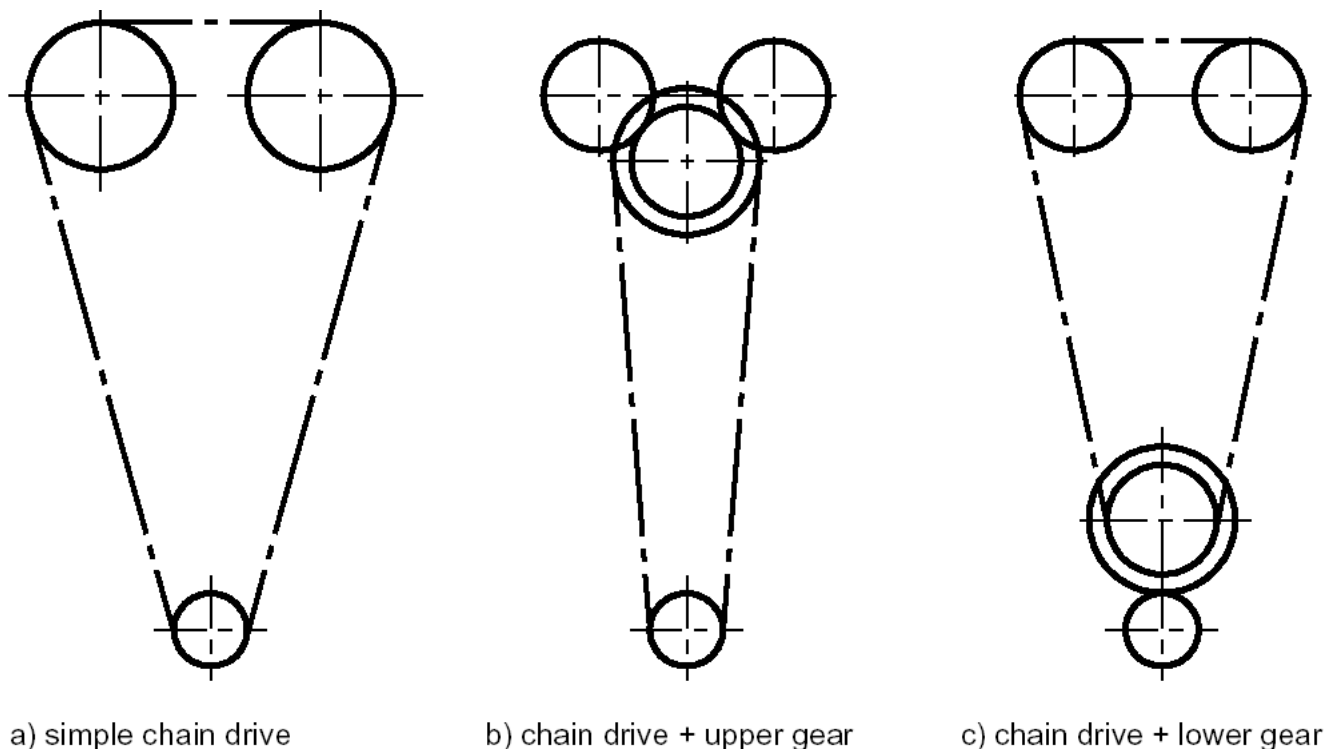
Moto2 COMPULSORY ECU PACKAGE - 2019-on				
	ITEM	MMM NAME	MMM p/n	NOTES
1	ECU	REX 140	083814482400	
2	Switch panel	SPS (TBC)	08381850900	
3	IMU	IPS 160	083815445400	
4	Dashboard	MDU 232	083818493500	
** Refer to the FIM website (http://www.fim-live.com/en/library/) for the complete list of approved "free" sensors				

Moto2: Fig. 5: Moto2 Engine operating parameters:

Crankshaft speed	14,000 rpm maximum
Operating water temperature	60 - 80°C
Air/Fuel Ratio target range	13.2 - 13.0
Oil level	Start of practice/race: at maximum level mark on dip stick At all times between minimum and maximum level marks
Oil pressure	Low oil pressure warning must be respected

Moto3: Fig. 1: Moto3 Valve Timing Drive

Examples of permitted valve timing systems with a single chain as the principal drive mechanism (NB. general concept illustrations only, not an exhaustive list. Other layouts may be possible provided they comply with Article 2.6.3.1.12.



Moto3: Fig. 2: Moto3 Compulsory Engine Management features

Ignition	Must be of the inductive type. Maximum ignition coil current must be less than 30A
Throttle Position Sensor	Voltage output must be 0 - 5V
Crankshaft Pickup Sensor	Must be of the inductive type. Voltage at 300 rpm must be at least 0.8V, and maximum voltage less than 100V
Camshaft Pickup Sensor (if any)	Must be of the Hall-effect type. "0" voltage must be less than 0.5V, "1" voltage must be $4.5V \pm 0.5V$
Battery	Is compulsory. Must be in the 8 - 16.5V range (measured at the voltage acquisition channel) to ensure proper engine management function
Datalogger Download Connector	Must be type: Lemo PEN.1F.308.XLM or one completely compatible with this. Connected as detailed in Dell'Orto online documentation, http://www.dellorto-pe.com/
UEGO O ² Sensor	Bosch LSU 4.9

Moto3: Fig. 3: Moto3 Recommended Engine Management features

NB. Different design choices must be agreed separately with the official ECU supplier.

Idle Speed Stepper Motor	Dell'Orto. Refer to website http://www.dellorto-pe.com/
Dashboard	Dell'Orto. Refer to website http://www.dellorto-pe.com/
Timing Option 1 Crankshaft Pickup only	Crankshaft timing pattern is "n-2" type, where "n" can be between 12 and 60. For optimum performance it is recommended that the first tooth after the missing teeth corresponds to TDC (top dead centre)
Timing Option 2 Crankshaft and Camshaft Pickups	Crankshaft timing wheel has between 12 and 60 teeth, and the camshaft timing pattern is one single tooth
ECU Mounting	Dell'Orto ECU Safety Fixing Kit. Refer to website http://www.dellorto-pe.com/
Ignition Module	Dell'Orto IGBT Ignition Module. Refer to website http://www.dellorto-pe.com/



Moto3: Fig. 4: Moto3 Initial ECU Mapping and Set Up Procedure

The official ECU start-up procedure is to ensure manufacturers will be supplied with the official ECU with an initial map to suit their engine in time for the first official Moto3 tests of the season. The initial map is intended for safe and trouble-free engine function, and not maximum performance. Performance mapping is the responsibility of the engine manufacturer or the Team.

NB. Detailed information on engine control strategies for Moto3 engine manufacturers is available from the ECU supplier, upon completion of a non-disclosure agreement. Refer to the website: <http://www.dellorto-pe.com/>

For an engine design to be eligible for the Moto3 class, one of the following two options for the ECU start-up procedure must be followed:

OPTION 1 Initial Mapping and Set Up by ECU Supplier	Manufacturers will be guaranteed supply of the official ECU with initial maps to suit their engine before the first Moto3 official tests of the season, provided that:
By October 15 th of the year preceding first entry in Moto3	<ol style="list-style-type: none">1. the completed Moto3 Engine Manufacturer Entry Form is submitted to the organisers. (form available at http://www.fim-live.com/en/sport/official-documents-ccr/other-documents/)2. two complete working engines (including throttle body, idle bypass actuator, transmission, sensors, spark plugs, wiring harness with ECU connector) and one complete airbox, cooling system and exhaust are delivered to the ECU supplier for mapping tests. Engines and parts will be returned by January of the following year.3. a deposit of 10,000 Euros is lodged with the official ECU supplier.
OPTION 2 Initial Mapping and Set Up by Engine Manufacturer	Engine Manufacturers can make an agreement with the ECU supplier to carry out their own Initial mapping procedure, with the following conditions:



At a schedule mutually agreed between ECU Supplier and Engine Manufacturer	<ol style="list-style-type: none">1. the completed Moto3 Engine Manufacturer Entry Form is submitted to the organisers. (form available at http://www.fim-live.com/en/sport/official-documents-ccr/other-documents/)2. the ECU will be initially delivered to the engine manufacturer by the ECU supplier, and the ECU supplier representative must be present to initiate setup of the mapping process.3. the organisers and the ECU supplier provide no guarantee of any completion date for the mapping process.4. there is no set deadline for this Option 2 procedure, but Option 1 takes precedence, and requests for Option 2 attendance will be processed at a time determined by the ECUSupplier.
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3. DISCIPLINARY AND ARBITRATION CODE

3.1 Principles

The obligations incumbent upon the participants, officials and organisers are set out in the Regulations published by the FIM.

Proven violation or non-observance of these obligations will be subject to the penalties laid down in this chapter.

3.2 Penalties

The penalties are:

- warnings
- fines
- change of position
- long lap penalty(ies)
- ride through
- time penalties
- grid penalty
- disqualification
- withdrawal of Championship points
- suspension
- exclusion

3.2.1 Definition and application of penalties

Warnings:	can be made privately or publicly, and can be made without a hearing.
Fines:	<p>cash penalty up to 50'000€</p> <p>A fine of up to 1'000 €uros can be imposed without a prior hearing being necessary.</p> <p>However, the right of protest remains as set out in Art. 3.4.1.</p>
Change of position:	the rider must go back the number of positions decided by the FIM MotoGP Stewards Panel.
Long Lap Penalty(ies):	the rider must complete the pre-defined route of the Long Lap under the conditions as defined in Article 1.19.2.
Ride through:	see Art. 1.19.1.
Time penalties:	the imposition of time affecting the rider's actual result up to 2 minutes and the cancellation of time.
Grid penalty:	<p>the imposition of a drop of any number of grid positions or the imposition of starting the race from the pit lane exit at the rider's next race or next event.</p> <p>A grid position penalty may be imposed without a prior hearing being necessary.</p> <p>However, the right of protest remains as set out in Article 3.4.1.2.</p>

Disqualification:	<p>entails automatically and independently of any other penalty, the invalidation of the results obtained in an event, practice, race or ranking.</p> <p>An immediate disqualification from a practice session or a race may also be pronounced by means of a black flag or a black flag with orange disc.</p>
Withdrawal of championship points:	<p>the loss of points from the Championship races already run.</p>
Suspension:	<p>entails the loss of rights to participate for a specified period of time in any activity under FIM control.</p> <p>The application of this penalty may also be applied, in the Championship, to one or more practice sessions (or part thereof), or races.</p> <p>A suspension penalty from one or more official practice sessions (or part thereof) of the event may be imposed without a prior hearing being necessary. However, the right of protest remains as set out in Article 3.4.1.2.</p>
Exclusion:	<p>the final and complete loss of all rights of participation in any activity under FIM control.</p>

3.2.2 Plurality of penalties

Any offender may have several penalties pronounced against him according to the circumstances.

3.3 The Race Direction and the FIM Disciplinary and Arbitration Bodies

The bodies of the FIM, qualified to deal with race decisions, disciplinary and arbitration matters, are:

- The Race Direction
- The FIM MotoGP Stewards Panel
- The FIM Appeal Stewards
- The MotoGP Court of Appeal

3.3.1 The Race Direction

3.3.1.1 Constitution

The Constitution of the Race Direction is in accordance with the requirements laid down in Article 1.6.

3.3.1.2 Authority and Competence

The Race Direction has the authority to refer any case involving riders, teams' personnel, Officials and Promoters/Organisers, and all persons involved in any capacity whatsoever in the event or in the Championship, to the FIM MotoGP Stewards Panel for possible disciplinary for:

- any voluntary or involuntary action or deed accomplished by a rider or team member or any other person as mentioned above, contrary to the current Regulations or instructions given by an official of the meeting.
- any voluntary or involuntary action of Officials and Promoters/Organisers for having been unable to ensure the smooth and efficient running of the event or for serious breaches of the Regulations and Protocols covering the event organisation.

3.3.2 The FIM MotoGP Stewards Panel

3.3.2.1 Constitution

The Constitution of the FIM MotoGP Stewards Panel is in accordance with the requirements laid down in Article 1.7.

3.3.2.2 Authority and Competence

The FIM MotoGP Stewards Panel has the authority to penalise riders, teams' personnel, officials, promoters/organisers and all the persons involved in any capacity whatsoever in an event or in the **Championship for** :

- Infringements of the Regulations.
- any voluntary or involuntary action or deed accomplished by a person or a group of persons during a meeting, contrary to the current Regulations or instructions given by an official of the meeting.
- any corrupt or fraudulent act, or any action prejudicial to the interests of the meetings or of the sport, carried out by a person or a group of persons occurring during an event.

The FIM MotoGP Stewards Panel is competent to adjudicate upon a protest relating to infringements of the Regulations.

3.3.2.3 Penalties that may be pronounced by the FIM MotoGP Stewards Panel:

- a warning
- a fine
- a change of position
- long lap penalty(ies)
- a ride through
- a time penalty
- a grid penalty
- a disqualification
- a withdrawal of Championship points
- a suspension

Furthermore, the FIM MotoGP Stewards Panel can refer the case to the MotoGP Court of Appeal in order to impose a higher penalty than the FIM MotoGP Stewards Panel is empowered to do.

3.3.3 The FIM Appeal Stewards

3.3.3.1 Constitution

The FIM Appeal Stewards will consist of:

- one FIM Steward with FIM Sporting Steward Superlicence, who will be the chairman of the FIM Appeal Stewards and exercise a casting vote if necessary. This Steward will be nominated by the FIM and approved by the Permanent Bureau,

- and one FMNR Steward with FIM Sporting Steward Licence, nominated by the FMNR and approved by the FIM.

3.3.3.2 Authority and Competence

The FIM Appeal Stewards will hear any appeals against decisions taken by the FIM MotoGP Stewards Panel.

The FIM Appeal Stewards may confirm or overturn a decision of the FIM MotoGP Stewards panel, or impose a different penalty according to the penalties described in Art. 3.3.2.3.

The FIM Appeal Stewards may refer the case to the MotoGP Court of Appeal if it appears impossible to deal with the case for any valid reason. Such a decision will be justified in writing by the FIM Appeal Stewards.

3.3.4 The International Judicial Panel

The International Judicial Panel (CJI) is composed of qualified persons from which the member of the MotoGP Court of Appeal is nominated.

3.3.4.1 Constitution

The International Judicial Panel shall consist of members nominated by FMNs. Each FMN may nominate one or several members having the nationality of that FMN. The appointments shall be confirmed by the General Assembly for 4-year periods.

3.3.4.2 Qualifications

In order to qualify for appointment to the International Judicial Panel, a candidate must be in possession of a diploma in Law studies of University level. He must be able to express himself in at least one of the official languages of the FIM. He cannot however be an officer or a licence holder of the FIM.

3.3.5 The MotoGP Court of Appeal

3.3.5.1 Appointment of the Members

The FIM Legal Director in collaboration with the Director of the CJI will appoint, each time, the judge(s) who will constitute the MotoGP Court of Appeal.

3.3.5.2 Procedures

The name of the judge(s) appointed must be communicated to all interested parties in the case, who have the right to make a duly documented objection to the composition of the Court, the day after having received the information. If the Permanent Bureau considers that a reasonable objection is made, they must appoint the necessary replacements. Otherwise they reject the objection and fix the date for the hearing.

The court may request the opinion of an expert or summon a witness who it considers useful.

3.3.5.3 Authority and Competences

The MotoGP Court of Appeal will hear any appeals against decisions taken by the FIM Appeal Stewards.

The MotoGP Court of Appeal adjudicates upon request of the Race Direction, the FIM MotoGP Stewards Panel, or the FIM Appeal Stewards.

The President of the FIM, the Executive Board or the Management Council may, within 4 days after an Event, refer to the MotoGP Court of Appeal matters of violation or infringement of the FIM regulations not concerning sporting or technical regulations.

3.3.6 The FIM as a Party in the Legal Proceedings

3.3.6.1 Function

For all the appeals to the MotoGP Court of Appeal, the FIM is entitled to assert its interests or to explain its position by means of a prosecution address.

3.3.6.2 Appointment

The Executive Board shall appoint in each case, the person who will represent the FIM.

3.3.6.3 Procedure

The intervention of the FIM is optional and is left to the appreciation of the Executive Board.

As a party, the FIM enjoys the same rights and obligations as the other parties.

The FIM may be present in person at a hearing or may present its claims in writing.

3.3.6.4 Cases concerning behaviours of an exceptional gravity

In case of a behaviour of an exceptional gravity, the President of the FIM, the FIM Executive Board may refer the case to the FIM CDI which will hear such a case according to the procedures and time limits laid down by the General FIM Disciplinary and Arbitration Code.

3.4 Protests and Appeals

3.4.1 Protests

A protest is an action taken by any legal entity or any individual, rider, team, manufacturer, official etc. against another legal entity or any individual, rider, team, manufacturer, official etc.

3.4.1.2 Right of protest

A protest can be lodged against:

- an entry of a Rider, a Team or a Manufacturer,
- an alleged non-compliance of a machine with the regulations,
- a classification established at the end of a practice or a race.
- any alleged error, irregularity or breach of the regulations occurring during an event,
- a presumed wrongdoing behaviour of a competitor, not seen or not sanctioned by the disciplinary authorities, having occurred during an event.

However, no protest may be lodged against an immediate decision made by any judges of fact in the exercise of their duties, entailing or not:

- a fine, resulting from a pit lane speeding, pit lane exit, or practice start violation.
- a change of position.

- a long lap penalty(ies).
- a time penalty given in lieu of any penalty not subject to appeal.
- a ride through.
- a cancellation of the lap time concerned for a rider exceeding the track limits during practices.
- a disqualification from the practice sessions or races by means of a black flag or black flag with orange disc

No protest may be lodged against a decision of whether a rider is actively competing in the case of an interrupted race.

No protest may be lodged against a decision of the Race Direction or FIM MotoGP Stewards Panel based on a photo finish.

3.4.1.3 Procedure and time limit for protests

All protests must be submitted in writing and signed only by the person directly concerned.

Each protest must specify:

- the relevant regulations,
- the concerns of the protesting party,
- against whom the protest is lodged (when relevant).

Each protest must refer to a single subject only and the intention to protest should be notified to the Race Direction or to IRTA or to the FIM MotoGP Stewards Panel.

- within 30 minutes of the publication of the results in the case of Sporting Regulation protests,
- and before the chequered flag of the session in the case of Technical Regulation protests.

The protest must then be confirmed in writing or withdrawn within 1 hour at the latest after the publication of the results.

A protest against the eligibility of a rider, team or a motorcycle to enter a class or event must be made before the start of the official practice. A protest against a machine on technical control compliance grounds (eg. weight, noise, materials, etc.) may be made after the start of official practice, and must be informed to the Race Direction, to IRTA or to an FIM Steward before the chequered flag of the practice session or race concerned.

3.4.1.4 Security Deposit for protests

Protests must be handed to a responsible official (Clerk of the Course, Race Director, FIM Steward or Secretary of the Meeting) together with the security deposit of 660 Euros or equivalent.

This security deposit may only be returned if the protest is upheld.

Teams and riders contracted to compete in the Championship may submit a letter of guarantee from IRTA in lieu of payment.

In the case of protests referring to the alleged non-compliance of machines with the regulations and requiring the dismantling and re-assembly of clearly defined parts of a machine, an additional deposit may be specified in the Technical Regulations of the category (MotoGP) or by the stewards on a proposal from the GP Technical Director. This additional deposit must be paid by the protester within one hour upon notification of the stewards and before the dismantling has started.

3.4.1.5 Hearing of a protest

After an immediate hearing, the FIM MotoGP Stewards Panel must make a decision on any protest presented. The protest has to be judged according to the provisions of the Regulations.

3.4.1.6 Effect of the decision upon a protest

The decision of the FIM MotoGP Stewards Panel of determination of penalty is immediate.

3.4.2 Appeals

An appeal is an action taken by any legal entity or any individual, rider, team, manufacturer, official etc. affected by a penalty or decision issued by the FIM disciplinary authorities (whether arising from a protest or otherwise).

3.4.2.1 Right of appeal

The rules concerning appeals against FIM disciplinary decisions are:

1. To the FIM Appeal Stewards against a decision of the FIM MotoGP Stewards Panel

No appeal may be lodged against a decision made by any judges of fact in the exercise of their duties, entailing or not:

- a fine for speeding in the pit lane, pit exit line violation, or practice start violation.
- a change of position.
- **a long lap penalty(ies).**
- a time penalty given in lieu of any penalty not subject to appeal.
- a ride through.
- a cancellation of the lap time concerned for a rider exceeding the track limits during practices.
- a disqualification from the practice sessions or races by means of a black flag or black flag with orange disc.
- a disqualification from the practice sessions or the race following a positive results to the breath alcohol test carried out at such event.
- **a suspension from one or more official practice sessions (or part thereof) of the event.**
- a grid penalty for the race of the event.

No appeal may be lodged against a decision of whether a rider is actively competing in the case of an interrupted race.

No appeal may be lodged against a decision based on a photo finish.

When no appeal may be lodged to the **MotoGP Court of Appeal**, the decision of the FIM Appeal Stewards is final.

2. To the MotoGP Court of Appeal against a decision of the FIM Appeal Stewards

No appeal may be lodged against a decision made by any judges of fact in the exercise of their duties, entailing or not:

- a fine for speeding in the pit lane, pit exit line violation, or practice start violation.
- a change of position.
- **a long lap penalty(ies).**
- a time penalty given in lieu of any penalty not subject to appeal.
- a ride through.
- a cancellation of the lap time concerned for a rider exceeding the track limits during practices.
- a disqualification from the practice sessions or races by means of a black flag or black flag with orange disc.
- a disqualification from the practice sessions or the race following a positive results to the breath alcohol test carried out at such event.
- **a suspension from one or more practice sessions (or part thereof) of the event.**
- a grid penalty for the race of the event.

No appeal may be lodged against a decision of whether a rider is actively competing in the case of an interrupted race.

No appeal may be lodged against a decision based on a photo finish.

No appeal may be lodged if the FIM Appeal Stewards confirm the previous decision of the FIM MotoGP Stewards. In this case, the decision of the FIM Appeal Stewards is final.



3. To the CAS

No appeal may be lodged against a decision made by any judges of fact in the exercise of their duties, entailing or not:

- a change of position.
- a long lap penalty(ies).
- a cancellation of the lap time concerned for a rider exceeding the track limits during practices.
- a ride through.
- a disqualification from the practice sessions or races by means of a black flag or black flag with orange disc.
- a disqualification from the practice sessions or the race following a positive results to the breath alcohol test carried out at such event.
- a fine for speeding in the pit lane, pit exit line violation, or practice start violation.
- a suspension from one or more practice sessions (or part thereof) of the event.
- a grid penalty for the race of the event.

No appeal may be lodged against a decision of whether a rider is actively competing in the case of an interrupted race.

No appeal may be lodged against a decision based on a photo finish.

3.4.2.2 Time limits for the lodging of an appeal

The time limit for lodging a statement of appeal is:

against a decision of the FIM MotoGP Stewards Panel	1 hour
against a decision of the FIM Appeal Stewards	1 hour
statement of appeal against a decision of the MotoGP Court of Appeal before the Court of Arbitration for Sports (CAS)	5 days

The time limits shall be taken from the date and time of receipt of the decision by the appellant.

3.4.2.3 Lodging of an appeal

To be admissible, the statement of appeal must be submitted in writing (appeal before the FIM Appeal Stewards) or submitted or sent by registered letter or special courier or by electronic mail to the FIM Executive Secretariat and postmarked (appeal before the MotoGP Court of Appeal).

The correct security deposit for appeal must be paid to the FIM MotoGP Stewards (appeal before the FIM Appeal Stewards) or paid in to the FIM Executive Secretariat (appeal before the MotoGP Court of Appeal).

Within 24 hours following the statement of appeal before the MotoGP Court of Appeal, the appellant assigns to the FIM Executive Secretariat a brief of appeal stating the facts.

If the appeal was not lodged and/or the security deposit for appeal not paid within the dead line specified in Article 3.4.6, the appeal will be declared inadmissible without hearing.

3.4.2.4 Security deposit for appeals

The amount of the security deposit is 1'320 Euros.

Teams and riders contracted to compete in the Championships may submit a letter of guarantee from IRTA in lieu of payment.

This security deposit may only be returned if the appeal is upheld.

3.4.3 Security deposit payable upon an adjournment

If an adjournment to call further witnesses is ordered upon the request of one of the parties involved, this party must provide an additional financial guarantee within a time limit to be fixed by the disciplinary body. The hearing will not be continued until this guarantee has been paid. In case of no provision of the guarantee within the time limit, the disciplinary body will make a determination on the appeal based on the evidence of the original witness.

3.4.4 Time limits to be observed for appeal hearings

The FIM Appeal Stewards must be convened to examine an appeal immediately after the brief of appeal is received.

The FIM Appeal Stewards must in all cases announce a decision immediately following the hearing of the appeal.

The MotoGP Court of Appeal must be convened to examine an appeal not later than 4 weeks after the brief of appeal is received.

The MotoGP Court of Appeal must in all cases pronounce a decision, within 4 weeks after the brief of appeal is received.

3.4.5 Effect of an appeal

On request of the appellant, the FIM Appeal Stewards may decide a stay of the provisional execution adjudicated by the FIM MotoGP Stewards Panel by injunction or in its decision.

On request of the appellant, the MotoGP Court of Appeal may decide a stay of the provisional execution adjudicated by the FIM Appeal Stewards by injunction or in its decision.

3.5 Procedure before all the Disciplinary and Arbitration Bodies

3.5.1 Right to a hearing

It shall be the unquestionable right of any person or body charged with any offence under the Regulations to defend themselves, either in person or by proxy.

Any party convened before a disciplinary or arbitration body has the right to be represented by one defense counsel of its own choice and at its own expense. Adequate notice of this intention must be given in order that this may also be notified to all other parties in the case. Failure to do so may result in the disciplinary or arbitration body upholding an objection to such representation.

If any of the parties duly convened do not appear, judgment can be rendered by default.

The disciplinary or arbitration bodies may decide that the hearing take place by means of a telephone conference call or through any other means of communication using a telephone or electronic device. Such a method of conducting a hearing shall only take place with the consent of all parties involved.

3.5.2 The hearing

The hearing shall be public unless the disciplinary or arbitration body itself decides otherwise in exceptional circumstances.

The hearing shall be conducted in one of the official languages of the FIM. Should one of the parties wish to use another language, it shall provide the necessary interpreters at its own costs.

The appellant must be present or duly represented, failing which, the protest will not be admissible and the costs shall be borne by the appellant.

Once the Judge(s) has opened the proceedings, he will invite the parties involved to state their respective cases without the witnesses being present.

After statements of the parties concerned, the disciplinary or arbitration body shall hear the various witnesses and experts in order to complete the evidence. The parties involved in the case shall have the right to question all witnesses and experts on their evidence.

Any member of the disciplinary or arbitration body may, at any time during the hearing and with the Judge's approval, question any of the parties involved, the witnesses and experts.

3.5.3 Witnesses and Experts

Each party is responsible for the convening and appearance of its own witnesses, as well as their expenses unless decided otherwise by the Court.

The disciplinary or arbitration body has no authority to oblige the witnesses to swear on oath; therefore, testimony shall be given freely. The witnesses may only testify to the facts they know and shall not be allowed to express an opinion, unless the disciplinary or arbitration body should regard them as experts on a particular subject and should ask them to do so.

After having made their statements, the witnesses may not leave the Courtroom and shall not be allowed to speak to any other witness who has still to give evidence.

The Court may summon experts.

3.5.4 Judgement

Decisions of all disciplinary or arbitration bodies will be reached in camera by a simple majority of votes. All members will have equal voting rights which must be exercised when a decision is required. Abstention is not permitted.

Each member of the disciplinary or arbitration body binds himself to keep all deliberations secret.

3.5.5 Notification of judgements

The decisions of the FIM MotoGP Stewards Panel and of the FIM Appeal Stewards must be notified directly at the event venue, or failing that, addressed by registered letter with acknowledgement of receipt or by electronic mail.

All judgements of the MotoGP Court of Appeal must be notified, in writing, by registered letter with acknowledgement of receipt or by electronic mail in order to inform all the parties concerned.

3.5.6 Publication of judgements

The disciplinary or arbitration body imposing a penalty or adjudicating a protest or an appeal must have its findings published and quote the names of all parties concerned. The persons or bodies quoted in these statements have no right of action against the FIM nor against any person having published the statement.

Furthermore, final decisions will be published in the Media Centre and in the FIM Magazine unless the Court itself decides otherwise.

3.6 Costs of procedure

The costs of a disciplinary or arbitration decision will be assessed by the FIM Executive Secretariat and will be awarded against the losing party, unless the Court decides otherwise.

3.6.1 Payment of fines and costs

If the penalty is definitive, all fines must be paid into the Benevolent Fund before the beginning of the first practice of the second Grand Prix following the final decision. The costs must be paid to the FIM Executive Secretariat within 30 days of notification of the judgement decision according to Article 3.5.5.

The person or body affected by the decision shall be automatically suspended from participation in all FIM activities, until such time as full payment has been received.

3.7 Reciprocity of penalties

As a consequence of the agreement of reciprocity concluded on April 30th, 1949 between the 4 organisations controlling motorised sports internationally, i.e. in addition to the FIM, namely:

- the Fédération Internationale de l'Automobile (FIA)
- the Fédération Aéronautique Internationale (FAI)
- the Union Internationale Motonautique (UIM)

penalties of suspension or exclusion may also be applied to one or another of the sports represented by the above organisations, upon request of the FIM.

3.8 Law of Mercy

The Management Council, after consultation with the CJI President or upon his proposal, may mitigate or completely forgive the penalty of a person or group of persons after having exhausted all the appeal procedures

3.9. Arbitration Clause

Final decisions made by the disciplinary bodies (exception art. 3.4.2.3) or the General Assembly of the FIM may be submitted exclusively to the Court of Arbitration for Sport by way of appeal within the time limit as laid down in article 3.4.2.2, which shall have exclusive authority to impose a definitive settlement in accordance with the Code of Arbitration applicable to sport.

4. CIRCUIT STANDARDS

Circuit standards will be defined by the “FIM Standards”.

5. MEDICAL CODE

- a) The Medical Code contains guidelines, standards and requirements for the following: medical fitness in order to obtain a rider's licence (5.1 - 5.2.4), medical services at events (5.3 - 5.3.14), procedure in the event of an injured rider - (5.3.15), insurance (5.4), professional confidence (5.5), statistics (5.6) and documentation [Appendices A, B, C, D, E, F, G, H1, L, M, N].
- b) The GP Medical Code is contained within the FIM World Championship Grand Prix Regulations and reflects the relevant sections within the FIM Medical Code. The requirements of the Medical Code must be met at all FIM World Championship Grand Prix (FIM WC GP) events.
- c) In circumstances not covered explicitly by the FIM Medical Code, if such a situation occurs during an event, a binding decision will be made by mutual agreement between the CMO, Medical Director and FIM Medical Officer.
- d) Any amendments to this Grand Prix Medical Code must be approved by the GP Commission.
- e) The FIM Grand Prix World Championship: Moto3, Moto2 and MotoGP will be herein collectively referred to as "GP".

5.1 INTRODUCTION

MEDICAL CERTIFICATE AND EXAMINATION

- a) Every rider taking part in motorcycle competition events must be medically fit. For this reason a satisfactory medical history and examination are essential. It is the responsibility of the rider to immediately inform the relevant FIM Medical Officer and the CMO of any state of health or medical condition or any deterioration in their health or medical condition that may adversely affect their ability to ride or compete safely. Failure to do so will result in an immediate exclusion from competition and may lead to further sanctions.

- b) The medical certificate is valid for not more than one year. In the event of serious injury or illness occurring following the issue of a medical certificate, a further examination and medical certificate are necessary.

5.1.1 GUIDELINES FOR THE EXAMINING DOCTOR

The examination should be performed by a doctor familiar with the applicant's medical history. The examining doctor must be aware that the person to be examined is applying for a licence to participate in motorcycle events. The purpose of the examination is to determine whether the applicant is physically and mentally fit to control a motorcycle in order to ensure the safety of other riders, officials and spectators during an event, having regard to the type of event for which the rider is applying.

Certain disabilities exclude the granting of a licence.

A) LIMBS

The applicants should have sufficient function of their limbs to permit full control of their machine during events. In the case of loss or functional impairment of all or part of a limb or limbs the applicant must be referred for the opinion of the medical commission of his FMN and of the FIM, if necessary.

B) EYESIGHT

- a) The minimum corrected visual acuity must be 6/6 [10/10] with both eyes open together. The minimum field should measure 160 degrees, 30 degrees vertical.
- b) Spectacles, if required, should be fitted with shatterproof lenses and contact lenses, if worn, should be of the "soft" variety.
- c) Double vision is not compatible with the issuing of a competition licence.
- e) The applicant must have normal colour vision, in that they can distinguish the primary colours of red and green. If there is any doubt, a simple practical test is recommended under conditions similar to those of a race.

C) HEARING AND BALANCE

A licence can be issued to an applicant with impaired hearing but not to an applicant with a disturbance of balance.

A rider with impaired hearing must be accompanied at the riders briefing by a person with normal hearing who can communicate the information either by signing or in writing. The rider must wear a clearly visible tag that identifies him/her as hearing-impaired to the marshals and medical personnel in case of an accident/incident. The rider must also comply with the requirements of Article 5.2.4 of the FIM GP Medical Code.

D) DIABETES

In general, it is not considered advisable for diabetics to enter motorcycle events.

However, a well-controlled diabetic not subject to hypoglycaemic or hyperglycaemic attacks, and having no neuropathy nor any ophthalmoscopic evidence of vascular complications, may be passed as fit to compete.

E) CARDIO-VASCULAR SYSTEM

In general, a history of myocardial infarction or serious cardio-vascular disease would normally exclude a rider. Special attention should be paid to blood pressure and cardiac rhythm disorders. In such cases a certificate from a cardiologist including the results of any test the cardiologist considers necessary, must be submitted with the medical examination form.

F) NEUROLOGICAL AND PSYCHIATRIC DISORDERS

In general, applicants with a serious neurological or psychiatric disorder will not be granted a licence.

G) FITS OR UNEXPLAINED ATTACKS OF LOSS OF CONSCIOUSNESS

A licence will not be issued if the applicant suffers from epilepsy, has suffered a single epileptic fit, or has suffered any episodes of unexplained sudden loss of consciousness during a period of 5 (five) years. If no other epileptic fit or other unexplained sudden loss of consciousness has occurred during these 5 (five) years, the applicant may be granted a licence.

H) USE OF WADA PROHIBITED SUBSTANCES

Applicants using substances included in the WADA Prohibited List will not be accepted except with a valid Therapeutic Use Exemption (TUE) approved by the FIM.

I) ALCOHOL

1. Applicants with an alcohol addiction will not be accepted.
2. For safety reasons riders must not participate in competition if they are found to have a blood alcohol concentration superior to the threshold of 0.10. g/L.
3. The presence of alcohol in concentration higher than the threshold and the consumption/use of alcohol (ethanol) are prohibited in motorcycling sport during the *in-competition period and will be considered as a violation of the Medical Code.
4. Such violation(s) of the Medical Code will be sanctioned as follows:
 - The riders will be immediately excluded and disqualified from the relevant event by the FIM MotoGP Stewards. Further sanctions may be applied in accordance with the FIM Disciplinary & Arbitration Code and/or the relevant Sporting Regulations.
5. For the purpose of the alcohol testing procedure, the in-competition* period is defined as the period commencing 12 hours before the rider rides his bike for the first time during the event**, ending thirty (30) minutes after the end of the last race*** in his class and category. This is the minimum period of time that riders should abstain from alcohol prior to competition for safety reasons. For the avoidance of doubt the possession, use and consumption of alcohol during the podium ceremony is not considered a violation under the FIM Medical Code providing that the podium ceremony takes place at the end of the event.
6. Detection will be conducted by analysis of breath and/or blood. The alcohol violation threshold is equivalent to a blood alcohol concentration of 0.10 g/L.

7. Riders may be subject to alcohol breath and/or blood testing.

** Event is a single sporting event composed, depending on the discipline, of practice sessions, qualifying practice sessions and race(s).

J) MEDICATION & DRUGS

Applicants will not be accepted if they are using medication including those legitimately prescribed with potentially adverse side effects that could pose a risk to the safety of the rider or others during competition. This includes drugs that cause sedation, blurred vision, psychomotor retardation or other side effects that can adversely affect their ability to have full and complete control of a motorcycle in competition.

K) TREATMENT WITH PROHIBITED SUBSTANCES OR METHODS AT EVENTS

Any treatment requiring a prohibited substance or method to be used by any doctor to treat a rider during an event must be discussed and agreed with the FIM Medical Officer. If this is required a TUE must be submitted immediately for retroactive approval to be received by the FIM no later than the following day after the event.

L) ANAESTHESIA

Riders will not be permitted to participate in practice or competition until at least 48 hours have elapsed following any general, epidural, spinal or regional anaesthesia.

See also 5.2.3 and appendix D.

M) CONCUSSION

Assessment of the injured rider and return to competition should be in accordance with the guidelines for the assessment and management of concussion as contained within the Consensus Statement On Concussion In Sport – The 5th International Conference On Concussion in Sport held in Berlin, October 2016.

See also Art. 5.2.3 and appendix D.

In the event of a suspected concussion the rider should be assessed using a recognised assessment tool such as SCAT5 or similar (see appendix M). If the assessment confirms a concussion the rider should immediately be excluded from competition for at least the rest of the event. Prior to returning to competition the rider should be assessed for and provide documentary evidence of a return to normal neuro-psychological function using for example the IMPACT system, functional MRI scan or similar in accordance with the current International Consensus Statement on Concussion in Sport.

N) PROCEDURE IN CASE OF DOUBT OF MEDICAL FITNESS

The examining doctor may not feel able to approve an applicant on medical grounds. In such a case he should complete the certificate, having ticked the relevant box, sign it, and then send it to the applicant's FMN with his observations, including past history. If necessary, he should request that the applicant be examined by a member of the medical committee of the FMN or a doctor appointed by the FMN.

If, following the rider being assessed as being medically fit to participate in competition evidence emerges of a medical condition that represents a significant risk to the rider and/or other competitors, the Medical Director, FIM Medical Director/Officer together with other relevant parties such as the CMO and FMN doctor have the right to withdraw the riders' licence at any time until further assessment of the rider is undertaken and a subsequent satisfactory medical report is provided to the FMN and Medical Director and FIM Medical Director/Officer.

O) THE USE OF INTRAVENOUS FLUIDS

In accordance with Section M2.2 of the 2021 WADA Prohibited List Intravenous infusions and/or injections of more than a total of 100 mL per 12 hour period are prohibited except for those legitimately received in the course of hospital treatments, surgical procedures or clinical diagnostic investigations.

Intravenous fluids must therefore not be administered to any competitor during any event from the official start time of the event until the official event end time unless by the official FIM approved medical service for the event. In all cases there should be a formal medical need for the fluids demonstrated by documented assessment of the rider's medical condition including their vital signs. Rehydration should be sufficient to return vital signs to normal and no more. If the rider's medical condition is such that treatment requiring the use of intravenous fluids is necessary during an event he will not be permitted to compete for at least the remainder of that day. Return to competition will require a further medical assessment to ensure he is medically fit to do so.

P) ORAL HYDRATION

Where the temperature is sufficient to cause significant risk of dehydration as assessed by the CMO or Medical Director or FIM Medical Officer, the organiser must make drinking water in sufficient quantities for all competitors and officials as soon as possible and within a time frame to address the risk. Where possible the need for water should be assessed before the event start.

Q) COST OF MEDICAL EXAMINATION

Any fee arising from the examination or completion of the medical certificate is the responsibility of the applicant.

5.1.2 AGE OF RIDERS

Refer to Art. 1.10

5.2 SPECIAL MEDICAL EXAMINATION

At any time during an event a special medical examination may be carried out (this may include urine dipstick testing for drugs) by an official doctor or by another doctor nominated by the Chief Medical Officer (CMO) at the request of the Race Director, Medical Director or FIM Medical Officer.

5.2.1 REFUSAL TO UNDERGO SPECIAL MEDICAL EXAMINATION

Any rider who refuses to submit himself to such special medical examination must be excluded from the event, and his case notified to the Race Direction and the FIM.

5.2.2 LIST OF MEDICALLY UNFIT RIDERS (Appendix G)

The CMO shall examine all riders listed as medically unfit who wish to compete in order to assess their medical fitness to do so the day before they use a motorcycle on the track. The list of medically unfit riders shall be supplied by the Medical Director and/or FIM Medical Officer, who will attend this examination. The information provided on this list must be treated in the strictest confidence and must be only made available to the FIM Medical Director and the CMO at the event. It is the rider's responsibility to inform the Medical Director, FIM Medical Officer and CMO of any injury or illness sustained between events for inclusion in the list.

5.2.3 MEDICAL FITNESS TO RACE

- a) A rider must be sufficiently medically fit to control his machine safely at all times. There must be no underlying medical disorder, injury or medication that may prevent such control or place other riders at risk. Failure of a rider to disclose such a condition may lead to the application of sanctions.
- b) Riders will not be permitted to participate in practice or competition until at least 48 hours have elapsed following any general, epidural, spinal or regional anaesthesia.
- c) In the event of a suspected concussion the rider should be assessed and managed in accordance with the guidelines for the assessment and management of concussion as contained within the Consensus Statement On Concussion In Sport – The 5th International Conference On Concussion in Sport held in Berlin, October 2016. The rider should be assessed using a recognised assessment tool such as SCAT5 or similar. If the assessment confirms a concussion the rider should immediately be excluded from competition for at least the rest of the event.
- d) Prior to returning to competition the rider should be assessed for and provide documentary evidence of a return to normal neuro-psychological function using for example the IMPACTsystem, a functional MRI or similar in accordance with the current International Consensus Statement on Concussion in Sport.

- e) The decision regarding medical fitness to compete is normally at the discretion of the CMO. The CMO should be provided with and consider a report from the practitioner treating the rider including details of X-rays, scans, other investigations and any interventions before assessing a rider's fitness to return to competition. As necessary and appropriate decisions regarding fitness to compete should be made in consultation with the Medical Director and/or FIM Medical Officer.

5.2.4 RIDERS WITH SPECIAL MEDICAL REQUIREMENTS

Riders with certain medical conditions and who may require special treatment in the event of injury, or who have been in hospital during the previous 12 months or who are being treated for any medical conditions are responsible for informing the CMO, Medical Director and FIM Medical Officer, before the event regarding their condition and that they may require such special treatment.

5.3 MEDICAL SERVICES AT EVENTS

- a) Any treatment at the circuit during an event is free of charge to the riders. The costs for transferring an injured rider to a hospital designated by the CMO are the responsibility of the **organiser of the event**.
- b) Medical services must guarantee assistance to all riders as well as any other authorised persons injured or taken ill at the circuit during event.
- c) A medical service for the public, separate from the above services must be provided by the event organisers. This service is not described in this code but must conform to any regulation enforced by the relevant country and reflect the size of crowd expected. This service must be controlled by a deputy CMO or other doctor but not directly by the CMO.
- d) Unless otherwise authorised by the rider, the CMO, the Medical Director and FIM Medical Officer, the Clinica Mobile and other members of the medical services, are not authorised to make statements to any third party, other than immediate relatives, about the condition of injured riders, without reference to and authorisation from the FIM and Dorna.

- e) Appropriate medical services are defined as follows:
1. During all official track activity a fully functional medical services, including medical centre, ground posts, vehicles, helicopter and personnel in accordance with the circuit medical homologation.
 2. During the days with track activity as well as the day before it begins the Medical Centre must be fully staffed in accordance with the medical homologation from 08:00 hrs or at least 1 hour before the track activity commences until 20:00 hrs or at least three hours after the end of the last race or track activity.
 3. **The CMO, Medical Intervention Team (MIT) personnel, Medical Centre personnel and the FIM Medical Officer must attend the simulation and training on the day prior to the event. All appropriate medical vehicles, equipment and devices must also be available.**
 4. At all other times when there is no official track activity as above from 08.00 hrs on the Monday before the event until 20.00 hrs on the day after the event there must always be a doctor and a nurse/paramedic with an ambulance available at the medical centre.
- f) At events where no one sleeps in the paddock overnight it may be permissible following consultation with the FIM Medical Officer to not have any medical staff available from **23:00 hrs to 07:00 hrs**.
- g) The full Medical service available for FIM events must remain in place for any national or supporting races that occur during FIM events and that the FIM procedure in case of serious/fatal accidents must be followed.

5.3.1 TERMS OF REFERENCE OF THE CHIEF MEDICAL OFFICER (CMO)

The CMO:

1. Is a holder of the corresponding FIM GP CMO Superlicence. This licence is valid for a maximum term of one year and shall be issued by the FIM.
2. Is appointed by the FMNR/Organiser.

3. Should be the same throughout the event.
4. Must be able to communicate in at least one of the FIM official languages, either English or French.
5. Should be familiar with the FIM Medical Code and FIM Anti-Doping Code.
6. Must be named in the event information.
7. Must be a fully registered medical practitioner authorised to practice in the relevant country or state in which the event is taking place.
8. Must have malpractice insurance appropriate to the relevant country or state, where the event is being held.
9. Must have attended the FIM CMO Superlicence seminar which takes place every year.
10. Must be familiar with the circuit and the organisation of the medical services at which he/she is appointed.
11. Must be familiar with the principles of emergency medical care and the associated organisational requirements necessary for a circuit medical service to deliver effective emergency medical interventions to injured riders in keeping with current accepted best practice.
12. Is responsible for the positioning of medical and paramedical personnel and vehicles under his control.
13. Must complete the FIM CIRCUIT CMO QUESTIONNAIRE (appendix F) and return it to the FIM, Medical Director and FIM Medical Officer at least 60 days prior to the event. Failure to comply with this deadline may result in sanctions being applied. The Circuit CMO Questionnaire must be accompanied by:
 - a) A medical plan and maps of the medical service including the position and number of all of the medical resources including all personnel and vehicles.
 - b) A plan of the circuit medical centre.

- c) A map showing the location, distances and routes to the designated hospitals.
 - d) A list of the doctors including a brief professional curriculum vitae of their experience and qualification relevant to the provision of out of hospital emergency medical care. This should be presented at the latest on the day before the event following the initial track safety inspection.
14. No alterations to the questionnaire and associated medical plan and circuit map showing the position of the medical personnel and vehicles, are permitted without previous consultation with the Medical Director and/or FIM Medical Officer.
15. Must contact, in writing, at least 60 days before the event, hospitals in the vicinity of the event that are able to provide the following specialist services, and include them in the questionnaire:
- a) CT Scan
 - b) MRI
 - c) Trauma resuscitation
 - d) Neurosurgery
 - e) General surgery
 - f) Vascular surgery
 - g) Trauma and Orthopaedic surgery
 - h) Cardio-Thoracic surgery
 - i) Intensive Care
 - j) Burns and plastic surgery

16. Must send copies electronically to the FIM, Medical Director and FIM Medical Officer at least 30 days before the event and have available at the event the letters they have written to the hospitals and copies of the letters of confirmation that every hospital to be used for treatment of injured persons is aware that the event is taking place and is prepared to accept and treat injured riders with minimum delay. The letter of confirmation of every hospital must mention its equipment (x-ray, scanner etc.) the name (and telephone numbers) of the doctor in charge for each day and a map showing the quickest route from the circuit to the hospital.
17. Any change to the above mentioned information must be immediately forwarded to the Medical Director, FIM Medical Officer and to the FIM.
18. Should attend the meetings of the Event Management Committee.
19. Must attend the safety track inspection together with the Clerk of the Course and the Race Director/Direction one day prior to the first practice session.
20. Will collaborate with the Medical Director and/or FIM Medical Officer to organize a simulation of a medical intervention on the day prior to the first practice session.
21. Must brief the medical personnel prior to the start of the first practice session of the event, as well as debrief the staff after the event.
 - a) This briefing should include practical scenario-based examples of incident responses.
 - b) Compulsory scenario-based demonstration and training in the initial response to and management of an injured rider should take place on the day before the event and be attended by the CMO, Medical Director and FIM Medical Officer.
 - c) To inspect the circuit with the Medical Director, FIM Medical Officer, Clerk of the Course and Race Director the day before the first practice session. A further check will be made no later than 30 minutes before the first practice session or race each day to ensure that all medical facilities and staff, including the medical centre are ready to function and in accordance with the agreed medical plan and the Medical Code, and to report any shortcomings to the Medical Director, FIM Medical Officer and Race Director and FIM Safety Officer.

22. When motorcycles are on the track the CMO;

- a) must be stationed in Race Control.
- b) must be in close proximity to and liaise directly with the FIM Medical Officer, Clerk of the Course and Race Director.
- c) must be in direct communication with the medical ground posts, ambulances, medical vehicles and medical centre at all times, and test this communication at the start of each day before or during the medical assessment.
- d) provide immediate updates from trackside medical personnel to the Medical Director, FIM Medical Officer and Race Direction regarding the condition of any injured rider in order to facilitate the most appropriate medical response to their condition.
- e) participate with the FIM Medical Officer and Race Direction in the immediate deployment of appropriate medical resources to injured riders.

23. Must recommend to the Race Director/Clerk of the Course that a practice session or a race be stopped if:

- a) There is danger to life or of further injury to a rider or officials attending an injured rider if other riders continue to circulate.
- b) The Medical personnel are unable to reach or treat a rider for any reason.
- c) If a rider is unconscious, or suspected of having a spinal or other serious injuries and will require prolonged trackside medical intervention, such information must be communicated immediately to the CMO by ground post personnel.
- d) There is a risk of physiological harm to riders or of inability by riders to control their motorcycle, due to extreme weather conditions. In such circumstances of actual or potential harm from extreme weather conditions such as extreme heat the CMO and Medical Director or FIM Medical Officer should consider and recommend to the Race Direction that the race distance and length of sessions be adjusted accordingly with the provision of adequate periods for rest, recovery and rehydration. If necessary and appropriate the CMO, Medical Director and FIM Medical Officer can recommend that the race be stopped.

24. Must inform and update the Medical Director and FIM Medical Officer regarding the condition of injured riders and liaise with the relevant hospitals to ascertain and report the progress of their condition and treatment.
25. Will prepare a list of injured riders (Medically Unfit List) to be given to the Medical Director and FIM Medical Officer.
26. Shall ascertain that fallen riders during practice are medically fit to continue in competition. All riders injured during an event who refuse or avoid a Special Medical examination must be placed on the medically unfit list.
27. In accordance with normal medical practice will complete a clinical record of all medical examinations and assessments. A copy of the clinical record should be provided to the rider or their nominated representative to facilitate ongoing treatment after the event and referral to the rider's medical insurance provider.
28. Will meet with the Medical Director and/or the FIM Medical Officer every morning after the medical assessment, and every afternoon after the official activity has ended to discuss the medical interventions and the status of any injured riders. Evaluation of the interventions should include video of the performance of the medical activity.

Such evaluation will then be included in and inform the subsequent briefing of the medical personnel by the CMO.
29. To participate with the Medical Director, FIM Medical Officer and FIM Medical Representative if present in decisions regarding riders who have been injured and who wish to compete.
30. Must ensure an interpreter in English is available in the hospital permanently when an injured rider is there.
31. Must send electronically the completed forms Appendices A and L to the FIM Medical Department at cmi@fim.ch by the day following the event. (The forms are available as Excel files from the FIM Medical Department).
32. Must liaise with the Medical Director and/or FIM Medical Officer during the year before the event to manage and improve the medical service in any way necessary and ensure the requirements of the FIM Medical Code are completely respected.

5.3.2 MEDICAL DIRECTOR

The Medical Director will be appointed by the Contractual Partner.

The duties of the Medical Director shall be:

1. The CMO's point of reference for all medical aspects during the week of the race, as well as the months before during its preparation in collaboration with the FIM Medical Officer.
2. To ensure that all aspects of the medical service including the local medical service, the Clinica Mobile and the FIM Medical Intervention Team are to the required standards.
3. To be able to communicate at all times with all elements of the medical service in order to be fully informed of any medical issues.
4. To inspect the circuit with the CMO, FIM Medical Officer, Clerk of the Course and Race Director the day before the first practice session. A further check will be made no later than 30 minutes before the first practice session or race each day to ensure that all medical facilities and staff, including the medical centre are ready to function and in accordance with the agreed medical plan and the Medical Code, and to report any shortcomings to the CMO, FIM Medical Officer and Race Director and FIM Safety Officer. To receive from the CMO a signed copy of the FIM Circuit Medical Report Form and the medical plan as agreed during the FIM Medical Homologation and to ensure that the facilities comply with it.
5. To ensure in collaboration with the FIM Medical Officer and CMO that all necessary steps are taken to address any deficiencies in the medical plan or performance of the medical responses.
6. To inform the Race Director in consultation with the FIM Medical Officer and CMO of any situations where it may be necessary to stop the event in order to deploy the medical intervention vehicles.
7. To in conjunction with the FIM Medical Officer and CMO ensure that the intervention in the event of an injured rider is adequate, timely and appropriate.
8. To participate as necessary with the CMO and the FIM Medical Officer in decisions regarding riders who have been injured and who wish to compete and there is uncertainty as to their medical fitness to do so.

9. To assist the FIM Medical Officer in ensuring the requirements of the FIM Medical code are met.
10. To meet with the CMO and the FIM Medical Officer every morning after the medical assessment, and every afternoon after the official activity has ended to discuss the medical interventions and the status of any injured riders. Evaluation of the interventions should include video of the performance of the medical activity. Such evaluation will then be included in and inform the subsequent briefing of the medical personnel by the CMO.
11. To visit the designated hospital for a first event or if there is a change in the designated hospital to ensure the services provided are in accordance with the FIM Medical Code.
12. Must liaise with the FIM Medical Officer and CMO during the year before the event to manage and improve the medical service in any way necessary and ensure the requirements of the FIM Medical Code are completely respected.

5.3.3 FIM MEDICAL OFFICER

The FIM Medical Officer at an event will be a member of the FIM Medical Commission.

The duties of the FIM Medical Officer will be:

1. The CMO's point of reference for all medical aspects during the week of the race, as well as the months before during its preparation in collaboration with the Medical Director.
2. To represent and be responsible to the FIM and the FIM International Medical Commission.
3. To undertake as required medical inspections for the FIM Medical Homologation of the circuit and to make relevant recommendations accordingly.
4. To visit the designated hospital for a first event or if there is a change in the designated hospital to ensure the services provided are in accordance with the FIM Medical Code.

5. To receive and review the CMO Medical Questionnaire in advance of the event to confirm it is in compliance with the FIM Medical Homologation and the FIM Medical Code.
6. To ensure the medical service provision is in accordance with the requirements of the FIM Medical Code.
7. To inspect the circuit with the Medical Director, CMO, Clerk of the Course and Race Director the day before the first practice session. A further check will be made no later than 30 minutes before the first practice session or race each day to ensure that all medical facilities and staff, including the medical centre are ready to function and in accordance with the agreed medical plan and the Medical Code, and to report any shortcomings to the Medical Director, CMO and Race Director and FIM Safety Officer.
8. To be present in Race Control when motorcycles are on the track to observe the performance of the medical responses and to direct and advise the CMO and Race Direction accordingly.
9. To liaise with the CMO and the Clinica Mobile during medical interventions and when medical care is being provided to riders.
10. To obtain from the CMO at the end of each practice session or race a list of fallen riders and to ensure that the list of medically unfit riders held by the CMO is up to date to ensure medically unfit riders are not allowed on the circuit.
11. To be in direct communication with the members of the FIM Medical Intervention Team, as well as the drivers of these vehicles.
12. To inform the Race Director in consultation with the CMO of any situations where it may be necessary to stop the event in order to deploy the medical intervention vehicles.
13. To observe and advise the application of the FIM Medical Code and make recommendations accordingly.
14. To inform the Chief Steward, the FIM Medical Commission, the Medical Director and if necessary the Race Direction of any medical arrangement that contravenes the FIM Medical Code.

15. To participate with the Medical Director and CMO in the daily inspections of the track to ensure that medical facilities are in accordance with the agreed medical plan and Medical Code and to report any shortcomings to the Race Director, FIM Safety Officer, Medical Director and CMO as appropriate.
16. To ensure in collaboration with the Medical Director and CMO the response of the medical service is fit for purpose and to the required standard on the track and in the medical centre through direct observation and in Race Control.
17. To ensure in collaboration with the Medical Director and CMO that all necessary steps are taken to address any deficiencies in the medical plan or performance of the medical responses.
18. To in conjunction with the Medical Director and CMO ensure that the intervention in the event of an injured rider is adequate, timely and appropriate.
19. To assist the Medical Director and CMO in ensuring the medical service provision is to the required operational standard.
20. To participate as necessary with the CMO and the Medical Director in decisions regarding riders who have been injured and who wish to compete and there is uncertainty as to their medical fitness to do so.
21. To attend Event Management Committee meetings.
22. Will meet with the CMO and Medical Director every morning after the medical inspection, and every afternoon after the official activity has ended to discuss the medical interventions and the status of any injured riders. Evaluation of the interventions should include video of the performance of the medical activity. Such evaluation will then be included in and inform the subsequent briefing of the medical personnel by the CMO.
23. To provide a full written report to the FIM regarding the performance of the medical service and the status of the medical homologation with if necessary any recommendations required for improvement.

24. To provide a full written report to the CMO with an evaluation of the Medical Service during the weekend. The report should include aspects requiring improvement prior to the next race and reflect good practice by the medical service during the event.
25. To receive from the CMO the List of Medically Unfit riders and forward it to the CMO of the next event.
26. Must liaise with the Medical Director and CMO during the year before the event to manage and improve the medical service in any way necessary and ensure the requirements of the FIM Medical Code are completely respected.

5.3.4 OTHER DOCTORS

- a) Any injured rider must first be seen and assessed by the official event medical personnel for emergency treatment and be declared medically fit or unfit to compete as appropriate. He may then attend any other doctor of his choice. If the CMO advises against this, the rider must sign a declaration that he is seeking other advice and treatment (appendix C).
- b) Any rider, who, after treatment by a doctor not part of the event team, wishes to compete, must first obtain authorisation for this from the CMO of the event or his deputy, who should be provided with a report of any investigations or interventions and consider any recommendation by the doctor treating him.

5.3.5 FIM MEDICAL INTERVENTION TEAM

- a) In order to ensure the highest standard of immediate medical care to injured riders two vehicles type A (Medical Intervention Vehicles) with a professional driver will be provided by the promoter at all races. Their role will be the provision of immediate trackside medical assistance in the event of serious injury, until transfer to the medical centre or hospital. These vehicles must be in position for any session to start.
- b) The personnel of these vehicles must be present the day before the start of the event for the track inspection as well as the scenario based demonstration and training. The personnel of these vehicles will be in direct communication with the CMO, Medical Director and/or FIM Medical Officer throughout the event.

5.3.5.1 FIM MEDICAL INTERVENTION TEAM PERSONNEL

Each FIM Medical Intervention vehicle will have:

- a) A doctor with a FIM Medical Intervention Team Doctor License, which will only be granted to doctors who:
 - 1. are fully qualified, registered and licensed medical practitioners.
 - 2. have a specialist qualification in a relevant medical specialty such as anaesthetics (anaesthesiology), intensive care medicine, emergency medicine, pre-hospital emergency care, trauma medicine etc.
 - 3. have a minimum of 5 years relevant specialist experience and training.
 - 4. have appropriate medical malpractice insurance for the country in which the event is taking place.
 - 5. can provide evidence of ongoing involvement in resuscitation and provision of emergency and acute care to patients with significant trauma in a hospital or out of hospital environment.
 - 6. can provide evidence of ongoing professional development and training in the management of patients with polytrauma.
 - 7. can communicate in English.
 - 8. must participate in the Medical Intervention Simulation and training following the track inspection on the day prior to the first practice session of the event in which they will take part.
- b) A nurse or paramedic with a FIM Intervention Team License, which will only be granted to nurses or paramedics who:
 - 1. are fully professionally qualified and registered.
 - 2. have a specialist qualification in a relevant specialty such as anaesthetics (anaesthesiology), intensive care medicine, emergency medicine, pre-hospital emergency care, trauma medicine etc.

3. have a minimum of 5 years' experience in a relevant speciality.
4. have appropriate medical malpractice insurance for the country in which the event is taking place.
5. can provide evidence of ongoing involvement in resuscitation and provision of emergency and acute care to patients with significant trauma in a hospital or out of hospital environment.
6. can provide evidence of ongoing professional development and training in the management of patients with polytrauma.
7. can communicate in English.
8. must participate in the Medical Intervention Simulation and training following the track inspection on the day prior to the first practice session of the event in which they will take part.

5.3.5.2 DEPLOYMENT OF FIM MEDICAL INTERVENTION VEHICLES

- a) The FIM Medical Intervention vehicles will be deployed by the Race Director when the race or practice session is interrupted following the display of the red flag on the recommendation of and in consultation with the CMO, FIM Medical Officer or Clerk of the Course.
- b) When a rider is unconscious, or suspected of having a spinal or other serious injuries and will require prolonged trackside medical intervention such information must be immediately communicated by ground post personnel to the CMO who will immediately inform the Race Director that a red flag is required. Once the red flag has been established in a situation as described above the FIM Medical Intervention Vehicles will always be deployed by the Race Director.
- c) When the FIM Medical Intervention Vehicles are deployed, the ground post staff will provide treatment without moving or transferring the rider. Once the FIM Medical Intervention Vehicles have arrived, the ground post staff will provide assistance to the FIM Medical Intervention Team.

5.3.6 CLINICA MOBILE

For many years the CLINICA MOBILE and its personnel have attended FIM Road Racing World Championships Grand Prix events and has gained a considerable reputation among riders and support staff.

The CLINICA MOBILE has treatment facilities and its staff have considerable experience in treating riders' injuries and illness. Many riders prefer treatment by the CLINICA MOBILE staff to treatment by others. The parties involved in FIM Road Racing GP World Championships fully support the CLINICA MOBILE staff and the CLINICA MOBILE will be in attendance at events with the full co-operation of event organisers and CMOs.

The CLINICA MOBILE staff will treat those riders who wish to be treated by them only after they have been seen by the CMO or their nominated deputy. The CMO should declare riders medically fit or unfit as normal, after which they may go to the CLINICA MOBILE if they wish. The CLINICA MOBILE staff will give a medical report to the CMO, the Medical Director and FIM Medical Officer after assessment and treatment. A rider who has been declared medically unfit to compete, who after treatment by the CLINICA MOBILE staff then wishes to race, must present himself back to the CMO for re-examination.

A rider who prefers treatment by the CLINICA MOBILE staff when advised by the CMO otherwise is entitled to take his own course of action, but should sign a form indicating it was against local medical advice (see appendix C). If the rider decides he wishes to be treated in a hospital of his own choice, the CMO, using the means at his disposal at the circuit (ambulance, helicopter, etc.) must allow the rider to reach such hospital: i.e. the rider must be allowed to be transported by ambulance or helicopter from the circuit to the nearest airport.

One doctor from the CLINICA MOBILE will normally be present in the medical centre to observe when a rider is being assessed and treated. Similarly a doctor from the CLINICA MOBILE may, when necessary and feasible, accompany an injured rider to hospital.

When it is not feasible to accompany a rider, a doctor from the Clinica Mobile may follow the rider to hospital.

5.3.7 QUALIFICATION OF MEDICAL PERSONNEL

5.3.7.1 QUALIFICATION OF DOCTORS

Any doctor participating at a motorcycle event who will provide initial medical interventions to an injured rider either at the trackside, in the medical centre or during transport to hospital:

- a) must be a fully qualified and registered medical practitioner.
- b) must be authorised to practice in the relevant country or state.
- c) must be qualified in and able to carry out emergency treatment and resuscitation.

5.3.7.2 QUALIFICATION OF PARAMEDICS OR EQUIVALENT

Any paramedic or equivalent participating at a motorcycle event:

- a) must be fully qualified and registered as required by the relevant country or state.
- b) must be experienced in emergency care.

5.3.7.3 IDENTIFICATION OF MEDICAL PERSONNEL

All medical personnel must be clearly identified.

All doctors and paramedics must wear a garment clearly marked with “DOCTOR” or “DOCTEUR” and “MEDICAL” respectively, preferably in red on a white background on the back and on the front.

5.3.8 VEHICLES

5.3.8.1 DEFINITION OF VEHICLES

Vehicles are defined as follow:

Type A: A vehicle for rapid intervention at accident areas to give the injured immediate assistance for respiratory and cardio-circulatory resuscitation.

This vehicle should have “MEDICAL” clearly marked on it in large letters. The type of vehicle used should be appropriate for this purpose in the relevant discipline.

Type B: A highly specialised vehicle for the provision of advanced treatment, transport and can serve as a mobile resuscitation centre.

Type C: A vehicle capable of transporting an injured person on a stretcher in reasonable conditions.

5.3.9 MINIMUM MEDICAL REQUIREMENTS FOR EVENTS

- a) The medical service comprising of equipment, vehicles and personnel must be organised in such a way and in sufficient number to ensure that an injured rider can be provided with appropriate and all necessary emergency treatment with the minimum of delay and to facilitate their rapid transfer to further medical treatment in an appropriately equipped medical centre or definitive medical care in a hospital with the necessary facilities to deal with their injuries or illness should this be required.
- b) The CMO will therefore determine the number, location and type of vehicles, helicopter, equipment and personnel that are required to achieve this for a specific event taking into consideration the circuit and event location.
- c) The minimum medical requirements will be subject to confirmation and agreement following assessment and review by the Medical Director and FIM Medical Officer.
- d) A doctor or doctors must be available to provide initial medical intervention directly or following initial assessment and treatment by the paramedic teams.
- e) In all cases the medical equipment and personnel must be capable of providing treatment for both serious and minor injuries in optimal conditions and with consideration for climatic conditions.

Where the temperature is sufficient to cause significant risk of dehydration as assessed by the CMO or Medical Director or FIM Medical Officer, the organiser must make drinking water available in sufficient quantities for all competitors and officials as soon as possible and within a time frame to address the risk. Where possible the need for water should be assessed before the event start.

- f) In all cases, the transfer of an injured rider to a medical centre or hospital either by ambulance or by helicopter must not interfere with the event and the CMO must plan to have sufficient replacement equipment and personnel available to allow the event to continue.
1. Vehicles type A (number and position as per the FIM medical homologation) are to be placed in such a way and in such numbers that a fallen rider can be reached by them with the minimum of delay from their deployment by Race Control.
 2. Two FIM Medical Intervention Vehicles (type A) will be provided by the promoter and must be placed in such a way that a fallen rider can be reached by them with the minimum of delay from their deployment by Race Control. One vehicle should be located at the end of Pit Lane, and will serve as a medical car during the first lap of the races. The second should be located in the service road with an asphalt entry to the track, at approximately half the track's distance.
 3. Vehicle(s) type B (number and position as per the FIM Medical Homologation) are to be placed in such a way that a fallen rider can be reached and transported with minimum delay after coming to rest with ongoing treatment being provided during transport.
 4. Vehicle(s) type C (number and position as per the FIM Medical Homologation) are to be placed in such a way that a fallen rider can be transported with minimum delay after coming to rest only if no treatment is required.
 5. Medical Ground posts (number and position as per FIM Medical Homologation) are to be placed in such a way that a fallen rider can be reached and initial assessment and treatment commenced with the minimum of delay.
 6. Pit lane ground post
 7. A medical centre
 8. A helicopter
- N.B. the only amendment permitted to this in principle is that a vehicle Type C may be replaced by a vehicle Type B.

5.3.10 MEDICAL EQUIPMENT

5.3.10.1 EQUIPMENT FOR FIM MEDICAL INTERVENTION VEHICLE (TYPE A)

A. Personnel:

Type A1:

1. a driver, experienced in driving the Type A vehicle and familiar with the course
2. a doctor experienced in emergency care.
3. a second doctor or paramedic (or equivalent), experienced in emergency care.

Type A2:

1. a driver, experienced in driving the Type A vehicle and familiar with the course
2. paramedics (or equivalent) experienced in emergency care.

B. Medical Equipment:

1. Portable oxygen supply
2. Manual ventilator
3. Intubation equipment
4. Suction equipment
5. Intravenous infusion equipment
6. Equipment to immobilise limbs and spine (including cervical spine)
7. Sterile dressings
8. ECG monitor and Defibrillator
9. Drugs for resuscitation and analgesia/IV fluids
10. Sphygmomanometer and stethoscope

C. Other equipment:

A method e.g. protective canvas/tarpaulins in order to screen the rider or the accident scene from public view.

Equipment should be easily identified and stored in such a way that it can be used at ground level at the trackside.

D. Technical equipment:

1. Radio communication with Race Control and the CMO
2. Visible and audible signals
3. Equipment to remove suits and helmets

The minimum number of medical intervention vehicles is 2. In the case of an accident during the warm up lap or first lap of the race, the medical intervention vehicles should not stop unless instructed to do so by the Race Director.

5.3.10.2 FIM MEDICAL INTERVENTION TEAM VEHICLES

The promoter will provide type A vehicles with a professional driver, for which the local medical service will provide the personnel and equipment.

A. Personnel:

1. a driver experienced in driving the vehicle will be provided by the promoter.
2. a doctor experienced in resuscitation and the provision of immediate emergency care and a holder of the relevant FIM Medical Intervention Team licence. Refer to 5.3.5 above.
3. a nurse or paramedic experienced in resuscitation and the provision of immediate emergency care and a holder of the relevant FIM Medical Intervention Team licence. Refer to 5.3.5 above.

B. Medical equipment:

1. Portable oxygen supply
 2. Basic and Advanced Airway Management including intubation and surgical airway interventions
 3. Suction equipment
 4. Manual ventilator such as BVM and associated equipment
 5. Equipment for chest decompression
 6. Equipment for vascular access, infusion, circulatory support and haemorrhage control
 7. Cardiac Monitor and Defibrillator
 8. Blood pressure monitoring equipment
 9. Equipment to immobilise limbs and spine (including cervical spine)
 10. Sterile dressings
 11. Drugs for resuscitation, intubation and anaesthesia sedation and analgesia/IV fluids
 12. Equipment to remove race suits and helmets
- a) The provision of necessary medications and equipment will be the responsibility of the local medical service.
 - b) Only material necessary for the provision of medical care is permitted in FIM Medical Intervention Team vehicles. Other materials such as food etc. are not permitted at any time.
 - c) Equipment should be easily identified, portable and stored in such a way that it can be used at ground level at the trackside.
 - d) The equipment must be presented for review and familiarisation during the afternoon following the track safety inspection.

C. Technical equipment:

1. Radio communication with Race Control, the CMO and Medical Director
2. Visible and audible signals

5.3.10.3 EQUIPMENT FOR VEHICLE TYPE B

A. Personnel:

Type B1:

1. A driver
2. A doctor experienced in emergency care
3. Paramedics or equivalent

Type B2:

1. A driver
2. Two paramedics or equivalent experienced in emergency care

B. Medical equipment:

1. Portable oxygen supply
2. Manual and an automatic ventilator
3. Intubation equipment
4. Suction equipment
5. Intravenous infusion equipment
6. Equipment to immobilise limbs and spine (including cervical spine)
7. Sterile dressings
8. Thoracic drainage/chest decompression equipment
9. Tracheotomy/surgical airway equipment
10. Sphygmomanometer and stethoscope
11. Stretcher
12. Scoop stretcher
13. ECG monitor and defibrillator
14. Pulse oximeter
15. Drugs for resuscitation and analgesia/IV fluids

C. Technical equipment:

1. Radio communication with Race Control and the CMO
2. Visible and audible signals
3. Equipment to remove suits and helmets
4. Air conditioning and refrigerator are recommended

One (1) such ambulance must be on stand by at the medical centre.

5.3.10.4 EQUIPMENT FOR VEHICLE TYPE C**A. Personnel:**

1. Two ambulance personnel or paramedics of whom one would be the driver and the other would be a person capable of giving first aid.

B. Medical equipment:

1. Stretcher
2. Oxygen supply
3. Equipment to immobilise limbs and spine (including cervical spine)
4. First aid medicaments and materials

C. Technical equipment:

1. Radio communication with Race Control and the CMO
2. Visible and audible signals

5.3.11 HELICOPTER

- a) A helicopter, which is normally required, must be fully equipped with adequate personnel and equipment and be appropriately licensed for the relevant country and flown by an experienced pilot familiar with medical air evacuation and the potential landing sites. The medical personnel - doctor and paramedic(s) or equivalent - should be qualified in and able to carry out emergency treatment and resuscitation. The helicopter should be of a design and size that will allow continuing resuscitation of an injured rider during the journey. It should be positioned close to the medical centre such that an ambulance journey between medical centre and helicopter is not necessary.

- b) It is permissible for the helicopter to leave the circuit to transfer an injured rider to hospital without the need to stop the event with the agreement of the Chief Medical Officer, Medical Director, FIM Medical Officer and Race Director providing that it will have returned to the circuit within the time required to prepare a further rider for transfer by helicopter. If the distance to hospital by air or severe weather does not permit this a further helicopter “on site” may be required.
- c) In these circumstances or if the weather conditions or other factors prevent the use of the helicopter after consultation between the CMO, Medical Director and FIM Medical Officer further transfers may be undertaken by road by emergency ambulance providing the hospital is in reasonable distance. The designated hospital should normally be within 20 minutes by air and 45 minutes by road.
- d) If the hospital is not within a reasonable distance of the event and transfer by helicopter is not possible, consideration should be given to stopping the event.
- e) To ensure the availability of a helicopter at all times during the event, it is recommended that 2 helicopters be available.

5.3.12 MEDICAL GROUND POSTS

- a) These are placed at suitable locations and in sufficient numbers around the circuit to provide rapid medical intervention and if appropriate evacuation of the rider from danger with the minimum of delay. The personnel must have sufficient training and experience to take action autonomously and immediately in case of an accident.
- b) For protection of riders and the ground post staff, the ground post should be equipped with easily movable safety barriers and if possible protective canvas/tarpaulins in order to screen the rider or the accident scene from public view.

A. Personnel:

1. There should be a minimum of three personnel at each medical ground post at least one of which should be a doctor or paramedic (or equivalent) experienced in emergency care with the others to assist them, carry equipment and act as stretcher bearers.

Type GP1:

1. A doctor experienced in resuscitation and the pre-hospital management of trauma and
2. First aiders or stretcher bearers

Type GP2:

1. At least one paramedic or equivalent experienced in resuscitation and the pre-hospital management of trauma and
2. Two first aiders or stretcher bearers

B. Medical equipment:

Equipment for initiating resuscitation and emergency treatment including:

1. Initial airway management
2. Ventilatory support
3. Haemorrhage control & circulatory support
4. Cervical collar
5. Extrication device - This should be a scoop stretcher or if not available a spinal board or equivalent.

Devices such as “NATO” or other canvas stretchers that require the rider to be lifted on to them are no longer acceptable.

C. Technical equipment:

1. Radio communication with race control and the CMO
2. Adequate shelter for staff and equipment should be available.

5.3.13 PIT LANE GROUND POSTS**A. Personnel:**

1. A doctor and paramedic (or equivalent) experienced in emergency care must be positioned in the pit lane.
2. One or more Pit lane ground posts, depending on the length of the pit lane are required.

B. Medical equipment:

1. Airway management and intubation equipment
2. Drugs for resuscitation and analgesia/IV fluids
3. Cervical collars
4. Manual respiration system
5. Intravenous infusion equipment
6. First aid equipment
7. Scoop stretcher or if not available a spinal board or equivalent

C. Technical Equipment:

1. Radio communication with Race Control and the CMO

5.3.14 MEDICAL CENTRE

Refer to Art. 13.3 of the FIM Standards for Circuit Racing (SRC).

Doping test facilities

See Anti-Doping code, art. 5.9.10 or 13.3.2.3 of the SRRC.

5.3.14.1 EQUIPMENT FOR RESUSCITATION AREAS

- a) Equipment for endotracheal intubation, tracheotomy and ventilatory support, including suction, oxygen and anaesthetic agents.
- b) Equipment for intravenous access including cut-down and central venous cannulation and fluids including colloid plasma expanders and crystalloid solutions.
- c) Intercostal drainage equipment and sufficient surgical instruments to perform an emergency thoracotomy to control haemorrhage.
- d) Equipment for cardiac monitoring and resuscitation, including blood pressure and ECG monitors and a defibrillator.
- e) Equipment for immobilising the spine at all levels.
- f) Equipment for the splinting of limb fractures.

- g) Drugs/IV fluids including analgesic, sedating agents, anticonvulsants, paralysing and anaesthetic agents, cardiac resuscitation drugs/IV fluids.
- h) Equipment for the management of electrical and chemical burns such as showers and burns dressing.
- i) Tetanus toxoid and broad spectrum antibiotics are recommended.
- j) Equipment for diagnostic ultrasound.
- k) A permanent or portable digital X-ray machine, appropriate to detect usual bone fractures in motorcycle sport, must be available.

5.3.14.2 EQUIPMENT FOR MINOR INJURIES AREA:

The area must have beds, dressings, suture equipment and fluids sufficient to treat up to three riders with minor injuries simultaneously. Sufficient stocks to replenish the area during the event must be available and sufficient doctors, nurses and paramedics or equivalent experienced in treating trauma must be available.

5.3.14.3 STAFF OF MEDICAL CENTRE

The following specialists should be immediately available in the medical centre:

1. Trauma resuscitation specialist (e.g. Anaesthetist, Accident and emergency specialist, Intensive care specialist)
2. Surgeon experienced in trauma

Medical personnel, nurses and paramedics (or equivalent) should be present in a sufficient number and should be experienced in resuscitation, diagnosis and treatment of seriously injured patients.

5.3.14.4 MotoE

As this discipline is currently organised as part of a FIM Circuit Racing World Championship Grand Prix event, the medical service requirements are those as per the medical homologation for that event. Also refer to Art. 5.3 g).

5.3.14.5 OFFICIAL TESTING

- a) 1 Type A
- b) 2 Type B
- c) 1 CMO
- d) Medical Centre

5.3.15 MEDICAL HOMOLOGATION OF CIRCUITS / MEDICAL ASSESSMENT OF EVENTS

- a) Circuits of World Championships Grand Prix, require medical assessment and homologation in order to hold FIM World Championship events.
- b) The specific requirement for each circuit will be decided by the Medical Director and FIM Medical Officer in collaboration with the Circuit CMO who has to be present according to the requirements of the Championships promoters and with reference to the FIM Medical Code.
- c) Sample drawings of medical centre models are available from the FIM Administration for reference.
- d) The FIM also reserves the right to review such a homologation at any time.
- e) For details of the procedure, see appendix H1.
- f) In those disciplines where a FIM Medical Director/Officer is normally present the medical homologation is an integral part of the overall circuit assessment and an assessment will be undertaken jointly with the relevant Sporting commission representatives.

5.3.15.1 GRADING OF CIRCUIT ASSESSMENTS AND HOMOLOGATIONS

The medical **assessment** and homologation will be graded as follows:

A: 1 year.

A medical assessment and medical homologation report will be issued.

- B: Further improvements to the medical service are required and a further medical assessment is compulsory the following year.

Medical assessment may be required prior to next event.

In the event of two successive assessments resulting in grade B, the circuit will automatically be downgraded to grade C as defined below.

- C: The medical service provision does not comply with the requirements of the FIM Medical Code and further medical assessments are compulsory prior to any FIM event taking place.

Further medical assessment is required before any FIM event can take place until the circuit obtains at least a grade B.

5.3.16 PROCEDURE IN THE EVENT OF AN INJURED RIDER

The management of an injured rider is under the control of the CMO and should be the following:

- a) A fallen rider must be reached by a doctor or paramedic who can begin treatment with the minimum of delay of the rider coming to rest. If the rider is injured, the CMO must be informed by radio so that further procedures can be initiated.
- b) The CMO must be stationed in Race Control with the Medical Director and/or FIM Medical Officer with access to closed circuit television to monitor the situation. Upon request by the CMO any medical vehicle can be dispatched to the scene of the incident, only the Race Director can authorize entry onto, or response via track. Similarly, interruption or cessation of racing or practice session can only be authorized by the Race Director. It is the responsibility of the CMO, Medical Director and FIM Medical Officer to advise the Race Director of incidences where access to a fallen rider(s) necessitates this.

Response codes are:

Code 0 No medical intervention required

Confirmation by radio and CCTV to CMO and FIM Medical Officer that no medical intervention required

Rider gets up unassisted

Code 1 Short rescue

Confirmation by radio and CCTV to CMO and FIM Medical Officer that:

Rider able to walk with assistance

Rider will be cleared from track in less than 1 minute

Code 2 Long rescue

Confirmation by radio and CCTV to CMO and FIM Medical Officer that the rider is conscious and no spinal injury is suspected

Rider can be safely evacuated by scoop stretcher or spinal board

Rider will be cleared from track in less than 2 minutes and transferred directly to the medical centre.

Code 3 Prolonged rescue

Confirmation by radio and CCTV to CMO and FIM Medical Officer that the rider(s) is (are) unconscious, a spinal injury is suspected or the rider is otherwise seriously injured

Rider requires immobilisation and/or stabilisation before being moved

Rescue will take longer than 3 minutes

Medical intervention required on track

FIM Medical Intervention Team & Vehicles will be deployed in which case the rider(s) should not be moved or transferred until their arrival (see art. 5.3.5.2).

A. Transfer to the medical centre

- a) The injured rider will be transferred to the medical centre when his condition permits. The CMO shall decide the time and method of transfer. Rarely, at the discretion of the CMO only, a rider may be transferred to hospital directly from the trackside.

- b) The vehicle used to transfer the rider must be on scene of the accident with minimum delay following the order to intervene.

B. Medical centre

- a) At the medical centre, medical personnel will be available to treat the rider. The CMO remains responsible for the treatment of the rider.
- b) If the rider is unconscious, he will be treated by the medical centre staff under the responsibility of the CMO. The rider's personal doctor may observe this treatment and may accompany the rider to hospital.
- c) A rider who is conscious may choose the medical personnel by whom he wishes to be treated. A rider who does not wish to be treated by the medical centre staff against their advice must sign a "Rider self discharge" form (appendix C).
- d) Refer also to the SCAT5™ document in the appendix M which is a standardised tool for evaluating injured athletes for concussion.

C. Transfer to hospital

- a) The CMO shall decide the time of transfer, the mode of transfer and the destination of an injured rider. Having made the decision, it is his/her responsibility to ensure that the receiving hospital and appropriate specialists are informed of the estimated time of arrival and the nature of injuries. It is also the responsibility of the CMO to ensure appropriately skilled and equipped staff accompany the rider.
- b) A doctor of the Clinica Mobile will accompany the rider.

5.4 MEDICAL MALPRACTICE INSURANCE

All doctors and other medical personnel at an event must have adequate medical malpractice insurance cover.

5.5 PROFESSIONAL CONFIDENCE OF MEDICAL PERSONNEL

- a) The rider's right to medical confidentiality regarding their medical information, injuries and treatment must be respected at all times by the CMO, their medical service personnel and the Medical Director/ FIM Medical Officer. The rider's express consent must be obtained to disclose any medical information related to the rider. If the rider is unable to consent to share their information through illness or injury, the CMO must only provide appropriate and strictly necessary information to the rider's nominated representative/s and those healthcare professionals directly involved in the rider's treatment or in decisions regarding their fitness to compete including the Medical Director or FIM Medical Officer. The Medical Director and FIM Medical Officer at the event will also respect the confidentiality of this information and must only provide it to those healthcare professionals directly involved in the rider's treatment or in decisions regarding their fitness to compete, such as the CMO of the next event at which the rider wishes to compete. Other than in exceptional circumstances such as a fatal injury or serious injury that is potentially life-threatening the Race Direction or other officials should only be provided with sufficient information regarding the rider's fitness or otherwise to compete.
- b) Any breach of confidentiality by the CMO, members of the medical team, FIM Medical Directors, FIM Medical Officer, FIM Medical representatives or other officials holding FIM licences may result in withdrawal of their FIM licence.
- c) In any other circumstances, it is forbidden for the CMO or any other medical personnel to disclose any information to the media or other information services without the authorisation of the FIM and Dorna.
- d) All doctors must adhere to their professional ethics and medical codes of practice at all times.

5.6 ACCIDENT STATISTICS

The FIM Medical Officer will provide statistics to the FIM concerning accidents and injuries that occur during events (appendix A). This information must be anonymised except in relation to the provision of medical information to other doctors involved in the on-going medical assessment and treatment of the rider including the CMOs at subsequent events who will assess the rider for their fitness to return to competition (appendix G).

All fatal accidents occurring during an FIM event will be reported to the FIM Medical Department at cmi@fim.ch immediately as per the procedure in case of fatal accidents (appendix L).

5.7 DATA PRIVACY

The Medical Director, FIM Medical Officer, CMO, CMI Coordinator, FIM Medical Representative may store, process or disclose personal information relating to Riders when necessary and appropriate in order to conduct their activities under the Medical Code. They are also responsible for ensuring that Personal Data and Sensitive Personal Data they process is protected as required by data protection and privacy laws in force by applying all necessary security safeguards.

The Medical Director, FIM Medical Officer, CMO, CMI Coordinator, FIM Medical Representative shall not disclose any of the Rider's Personal Data or Sensitive Personal Data except where such disclosures are strictly necessary in order to fulfil their obligations under the FIM Medical Code.

The Medical Director, FIM Medical Officer, CMO, CMI Coordinator, FIM Medical Representative shall ensure that Personal Data and Sensitive Personal Data is only retained when it remains relevant to fulfilling their obligations under the FIM Medical Code. Once it no longer serves the above-mentioned purposes, it shall be deleted, destroyed or permanently anonymised. As a general rule, retaining Sensitive Personal Data requires stronger or more compelling reasons than for Personal Data.

Any rider who submits information including Personal Data and Personal Sensitive Data in order to obtain a FIM licence shall be deemed to have agreed, pursuant to applicable data protection laws and otherwise, that such information be collected, processed, disclosed and used for the purposes of the implementation of the FIM Medical Code by the Medical Director, FIM Medical Officer, CMO, CMI Coordinator, FIM Medical Representative, in accordance with data protection laws (including specifically, the International Standard for the Protection of Privacy and Personal Information).

Riders shall be entitled to request to erase, rectify or obtain any Personal Data or Sensitive Personal Data that the FIM holds about them in accordance with the FIM Medical Code by sending a written request to gdpr-medical@fim.ch.



APPENDIX A



ACCIDENT STATISTIC FORM

To be completed by the CMO
to be sent to the FIM Medical Department at cmi@fim.ch

Name of event:

Date of event:

Name of CMO :

- Day

= D
- Thursday
- = 0
- Friday
- = 1
- Saturday
- = 2
- Sunday
- = 3
- W = Weather

S = Sunny

R = Rain

C = Cloudy
- A.S.= Accident Statistic

N = Rider OK

T = Treated & discharged

H = Transported to hospital
- Assessment

F= fit

U= unfit

R= to be reviewed

Day	W	Time	Class	A.S.	NATURE INJURY	Assessment



APPENDIX B
GP



MEDICAL ASSESSEMENT REPORT FORM

HIGHLY CONFIDENTIAL

To be completed by the CMO

To be strictly shared only with: FIM Medical Representative
FIM Medical Officer - Race Direction

Name of event:

Date of event:

IMN :

Name of CMO :

Day = D
Thursday = 0
Friday = 1
Saturday = 2
Sunday = 3

A.S.= Accident Statistic
N = Rider OK
T = Treated & discharged
H = Transported to hospital

						Assessment		
Day	Time	Class	N°	FAMILY NAME	A.S.	FIT	UNFIT	TO BE REVIEWED

APPENDIX B
GP



MEDICAL ASSESSEMENT REPORT FORM

HIGHLY CONFIDENTIAL

To be completed by the CMO

**To be strictly shared only with: FIM Medical Representative
FIM Medical Officer - Race Direction**

Name of event:

Date of event:

IMN :

Name of CMO :

The CMO, FIM Medical Representative, FIM Medical Officer and members of the Race Direction are bound to ensure that this Personal Data and Sensitive Personal Data they process is protected as required by the data protection and privacy laws in force by applying all necessary security safeguards.

This information shall not be disclosed to any other person except when strictly necessary in order to fulfil their obligations under the FIM Medical Code and in accordance with its Art. 5.7.

Signature of CMO:

Date of completion:

APPENDIX C

GP



RIDER SELF DISCHARGE FORM

PART 1 (to be completed by the rider)

I, _____ rider no _____

in the _____ class, discharge myself against local medical advice

and understand the possible consequences of such action that have been explained to me by Dr _____

I confirm to have agreed pursuant to applicable data protection laws and otherwise that my medical information be collected, processed, disclosed and used for the purposes of the implementation of the FIM Medical Code by any CMO, FIM Medical Officer, CMI Coordinator, FIM Medical Representative of the Medical Code.

I am entitled to request to erase, rectify or obtain any Personal Data or Sensitive Personal Data the FIM holds about myself in accordance with the FIM Medical Code by sending a written request to gdpr-medical@fim.ch.

Signed: _____ Date: _____ Time: _____

PART 2 (To be completed by the Chief Medical Officer-CMO)

I, Dr _____, CMO at the

_____ circuit, confirm that I have explained the possible consequences of the rider discharging himself/herself against my advice.

In view of the language difficulties, this explanation was given through an interpreter

(delete as appropriate).

Signed: _____ Date: _____ Time: _____

TO: CMO, Rider, **FIM Medical Officer**, FIM Medical **Representative**

APPENDIX D**DURATION OF CONVALESCENCE**

FIM Medical Panel document establishing the general evaluation principles for resumption of motorcycling competition after an accident

INTRODUCTION

The decision to consider a rider fit or unfit for continued engagement in motorcycling competition after an incapacitating accident falls within the competence of the CMO.

The increasing professionalism of all parties concerned in the various championships often places riders under contractual commitments that accustom them to a professional reality which is sometimes dehumanised and on which the CMI must keep a watchful eye.

OBJECTIVES

The development of new medical techniques, which are less invasive and, consequently, less physically disruptive for the patient, permit shorter periods of hospitalisation and earlier rehabilitation.

However, this technological adaptation cannot also shorten the periods of cicatrisation and bone consolidation and thereby invalidate all the histophysiological concepts.

Hence, while the rider's overall recuperation might be accelerated in this way, allowing him to envisage the wildest sporting feats, the physicians authorized to issue the medical certificate of fitness for the resumption of competition will have to ascertain whether the rider would be able to face unforeseen situations in order to avoid jeopardizing not only his safety but also that of his fellow riders and other parties involved.

MEANS

The criteria to be defined should be based on the following requirements:

1. Assurance of the immediate personal safety of the rider
2. Maintenance of a balance between the immediate and long-term physical well being of the rider.
3. Assurance of the immediate safety of the riders in all the collective motorcycling disciplines.

APPENDIX D

4. Assurance of the immediate safety of the other parties involved, such as stewards, paramedics, first-aid workers, physicians, mechanics, etc.

It would not be feasible to list in this document all the pathological situations encountered in the practice of motorcycling sport.

We will therefore give an overall perspective of the situations that are common to most injuries.

However, three points are worth emphasizing due to the frequency of the problems encountered in these situations:

1. Cutaneous cicatrisation needs time to be accommodated by the body as a whole. In principle, stitches should be removed when a wound has healed before any resumption of competition.
2. With regards to osteosyntheses using percutaneous pins of the Kirschner type, while the duration of the fracture consolidation is classic and agreed by most authors, we must emphasize that, in such a case, the resumption of competition is contraindicated due to the risk of displacement of such pins.
3. The resumption of competition is also contraindicated in the presence of means of immobilization such as orthoses or plaster cast designed to stabilize a lesion. In fact, the materials used, being less elastic than human body tissue, could pose a threat to the competitor in the event of a further accident.

Hence, on the whole, injuries suffered during the practice of motorcycling sport follow a common pattern: treatment of the lesion, cicatrisation and consolidation and, finally, rehabilitation and re-adaptation to the sporting discipline.

The internationally recognized periods of time needed for bone consolidation are therefore 4-8 weeks for an upper limb and 4-12 weeks for a lower limb, depending on the site of the fracture.

These minimum periods would, of course, be adjusted in the light of the follow-up of the bony callus, but the stress to which it would be subjected by the rider's activity would also be taken into account.

In order to maximize the safety not only of the rider but also of his entourage in competitions, the CMO should be able to carry out a set of simple, easily reproducible and effective tests to assess the motorcyclist's new physical capacities before he resumes competition.

Tests for lesions of a lower limb:

1. Mobility equivalent to or exceeding 50% of the physiological articular amplitude of the hip and knee joints.
2. Stand on one foot, both left and right, for at least 5 seconds.
3. Cover a distance of 20m unaided in a maximum time of 15 seconds.
4. Climb up and down 10 steps in a maximum time of 20 seconds.

APPENDIX D

Tests for lesions of a upper limb:

- To carry out 5 push ups

HEAD INJURIES

Assessment of the injured rider and return to competition should be in accordance with the guidelines for the assessment and management of concussion as contained within the Consensus Statement On Concussion In Sport — The 5th International Conference On Concussion in Sport held in Berlin, October 2016.

In the event of a suspected concussion the rider should be assessed using a recognised assessment tool such as SCAT5 or similar (see appendix [M](#)). If the assessment confirms a concussion the rider should immediately be excluded from competition for at least the rest of the event. Prior to returning to competition the rider should be assessed for and provide documentary evidence of a return to normal neuro-psychological function using for example the IMPACT system, functional MRI scan or similar in accordance with the current International Consensus Statement on Concussion in Sport.

ABDOMINAL SURGERY

In the event of any abdominal surgery, with or without incision of the peritoneum, the period of unfitness for competition would range from 15 days to one month.

CONCLUSION

Provided that the various periods of cicatrisation, and particularly bone consolidation, are respected by their therapists, injured riders should be able to undergo these fitness tests without danger so that they can all resume competition in conditions of optimal safety.



APPENDIX E

Licence Nr.
(will be filled in by
FIM/CMI)

Curriculum Vitae

Name:

First Name:

Title:

DoB:

(Date of Birth)

FMN:

Specialization:

Address:

Phone - office

FAX-office

Phone- home

FAX-home

E- Mail Address:

Work place:

☐ Office

☐ Hospital

☐ Other

I started as doctor in motorcycling sport in: (year)

Activities as doctor in motorcycling sport in the last 3 years:

Event	Function	Year

Date:

Return to the FIM Medical Department at cmi@fim.ch

**APPENDIX E**

**APPLICATION FOR A CMO LICENCE
BULLETIN D'INSCRIPTION POUR UNE LICENCE CSM**

Name/*Nom* : _____ First name/*Prénom* : _____

Address/*Adresse* : _____ No tél. : _____

_____ No fax : _____

_____ E-mail : _____

The undersigned confirms that :

Le soussigné confirme :

- ☐ I am familiar with the FIM MEDICAL & ANTI-DOPING CODE
Je connais le CODE MEDICAL & ANTIDOPAGE FIM
- ☐ I have attended a FIM CMO seminar in....., date.....
J'ai participé au séminaire CSM à, date.....
- ☐ I am experienced at motor sport events and have attended at least two national or continental or international events as a doctor.

Je dispose d'expérience dans les manifestations motorisées et ai assisté à au moins deux manifestations nationales ou continentales ou internationales à titre de médecin.

- ☐ I am familiar with the circuit at which I will be CMO
Je connais le circuit pour lequel je serai le CSM
- ☐ I am experienced in the provision of emergency medical care
J'ai de l'expérience dans les soins médicaux d'urgence
- ☐ I am a fully registered and appropriately qualified medical practitioner
Je suis inscrit à l'ordre des médecins et j'ai l'expérience en tant que praticien
- ☐ I enclose my completed professional and motorsport C.V.
Je joins mon complet C.V. professionnel et celui du sport motocycliste

Date : _____ Participant Signature
Signature du participant : _____

Licence N°: _____ (to be completed by the FIM/CMI)
(à remplir par la FIM/CMI)



APPENDIX E

CMO CURRICULUM VITAE

&

APPLICATION FOR A CMO LICENCE

Data Privacy

The CMO expressly consents that such information be collected, processed, disclosed and used for the purposes of the implementation of the FIM Medical Code in accordance with data protection laws.

CMOs shall be entitled to request the FIM to erase, rectify or obtain any Personal Data the FIM holds about them in accordance with the FIM Medical Code by sending a written request to gdpr-medical@fim.ch



Fédération Internationale de Motocyclisme
11, route Suisse - CH-1295 Mies (Suisse)
E-mail: cmi@fim.ch

CIRCUIT CMO QUESTIONNAIRE

(Form to be used by CMO)

This questionnaire has to be completed by the CMO (in accordance with Art. 09.6.1 of the FIM Medical Code) and returned to the FIM by e-mail 60 days prior to the event with the following attachments:

- 1) A plan of the medical centre
- 2) A map of the circuit/ posts indicating the medical services
- 3) A map of the circuit indicating the routes for urgent evacuation
- 4) Written confirmation that the necessary personnel is available during practice and racing

A copy of this form has to be handed over the Medical Director before the first track inspection (Art. 09.6.2 of the FIM Medical Code)

Discipline	<input type="text"/>	IMN No.	<input type="text"/>
Circuit	<input type="text"/>	Date	<input type="text"/>
Country	<input type="text"/>		
CHIEF MEDICAL OFFICER	<input type="text"/>		
	LIC. N°	<input type="text"/>	



Discipline

IMN No.

1 a) Are all medical services under the control of the Chief Medical Officer

YES

NO

1 b) Is the medical service for the general public under the control of a deputy CMO or other doctor than the CMO himself

2) Total personnel (medical centre, track)

(please fill in the number)

	day	0	1	2	3	4
Doctor (including CMO)	0	Thursday				
Nurses						
Paramedic or equivalent	1	Friday				
Other Medical personnel	2	Saturday				
Stretcher bearer	3	Sunday				
Driver	4	Monday				
Other (e.g.Pilot)						
Total						

3) Medical Intervention Vehicle (type A1)

Number

Do positions conform to map of circuit/ posts?

Doctor as per Medical Code

Second doctor, nurse, paramedic or equivalent as per Medical Code

Driver as per Medical Code

YES

NO

Medical Intervention Vehicle (Type A2)

Number

Do positions conform to map of circuit/ posts?

Doctor as per Medical Code

Nurse, Paramedic or equivalent as per Medical Code

Driver as per Medical Code

YES

NO

Medical Equipment

Portable oxygen supply

Manual ventilator

Intubation equipment

Suction equipment

Intravenous infusion equipment

Equipment to immobilise limbs and spine (including cervical spine)

Sterile dressings

ECG monitor and defibrillator

Drugs for resuscitation and analgesia/IV fluids

Sphygmomanometer and stethoscope

Other equipment

Protective canvas/tarpaulins

Technical Equipment

Radio communication with Race Control and CMO/Medical Director

Visible and audible signals

Equipment to remove suits and helmets

Type of vehicle

Quad

Ambulance

other

Bike

Car



Discipline

IMN No.

4) Vehicles Type B1

Number

	YES	NO
Do positions conform to map of circuit/ posts?	<input type="text"/>	<input type="text"/>
Doctor as per Medical Code	<input type="text"/>	<input type="text"/>
Paramedics or equivalent as per Medical Code	<input type="text"/>	<input type="text"/>

Vehicles Type B2

Number

Do positions conform to map of circuit/ posts?	<input type="text"/>	<input type="text"/>
Doctor as per Medical Code	<input type="text"/>	<input type="text"/>
Paramedics or equivalent as per Medical Code	<input type="text"/>	<input type="text"/>

Medical Equipment

Portable oxygen supply	<input type="text"/>	<input type="text"/>
Manual and automatic ventilator	<input type="text"/>	<input type="text"/>
Intubation equipment	<input type="text"/>	<input type="text"/>
Suction equipment	<input type="text"/>	<input type="text"/>
Intravenous infusion equipment	<input type="text"/>	<input type="text"/>
Equipment to immobilise limbs and spine (including cervical spine)	<input type="text"/>	<input type="text"/>
Sterile dressings	<input type="text"/>	<input type="text"/>
Thoracic drainage / Chest decompression equipment	<input type="text"/>	<input type="text"/>
Tracheostomy equipment /Surgical aiway equipment	<input type="text"/>	<input type="text"/>
Sphygmomanometer and stethoscope	<input type="text"/>	<input type="text"/>
Stretcher	<input type="text"/>	<input type="text"/>
Scoop stretcher	<input type="text"/>	<input type="text"/>
ECG monitor and defibrillator	<input type="text"/>	<input type="text"/>
Pulse oximeter	<input type="text"/>	<input type="text"/>
Drugs for resuscitation and analgesia/ IV fluids	<input type="text"/>	<input type="text"/>

Technical Equipment

Radio communication with Race Control and CMO	<input type="text"/>	<input type="text"/>
Visible and audible signals	<input type="text"/>	<input type="text"/>
Equipment to remove suits and helmets	<input type="text"/>	<input type="text"/>
Air conditioning and refrigerator (recommended)	<input type="text"/>	<input type="text"/>

Type of vehicle

5) Vehicles Type C

Number

	YES	NO
Do positions conform to map of circuit/ posts?	<input type="text"/>	<input type="text"/>
Personnel as per Medical Code	<input type="text"/>	<input type="text"/>

Medical Equipment

Stretcher	<input type="text"/>	<input type="text"/>
Oxygen supply	<input type="text"/>	<input type="text"/>
Equipment to immobilise limbs and spine (including cervical spine)	<input type="text"/>	<input type="text"/>
First Aid medicaments and materials	<input type="text"/>	<input type="text"/>

Technical Equipment

Radio communication with Race Control and CMO	<input type="text"/>	<input type="text"/>
Visible and audible signals	<input type="text"/>	<input type="text"/>

Type of vehicle



Discipline

IMN No.

6a) Medical Ground posts

Number

YES

NO

Do positions conform to map of circuit/ posts?

GP1 Personnel

Doctor experienced in resuscitation and the pre-hospital management of trauma

First aiders or stretcher bearers

GP2 Personnel

Paramedic or equivalent experienced in resuscitation and pre-hospital management of trauma

Two first aiders or stretcher bearers

Medical Equipment

Equipment for initiating resuscitation and emergency treatment

Initial airway management

Ventilatory support

Haemorrhage control & circulatory support

Cervical collar

Extrication device - Scoop stretcher or spinal board or equivalent

Technical Equipment

Radio communication with Race Control and CMO

Adequate shelter for staff and equipment and ground post staff

Other equipment

Protective canvas / tarpaulins

6b) Pit lane ground posts

Number

YES

NO

Do positions conform to map of circuit/ posts?

Personnel

Doctor, Paramedic or equivalent experienced in emergency care

Stretcher bearer

Medical Equipment

Airway management and intubation equipment

Drugs for resuscitation and analgesia/ IV fluids

Cervical collars

Manual respiration system

Intravenous infusion equipment

First Aid equipment

Scoop stretcher or spinal board or equivalent

Technical Equipment

Radio communication with Race Control and CMO

7) Medical Centre

Is a medical centre available at this circuit as per Medical Code? (compulsory at GP, SBK, Endurance WC) if "NO" go to 7d)

Is it a permanent structure?

Is it less than 10 mins from any part of the circuit?

Refer to Art. 13.3 of the FIM Standards for Circuits

Number of rooms

Discipline		IMN No.		
Secure environment from which media and public can be excluded				
Area easily accessible by First Aid vehicles				
Helicopter landing area nearby				
One or two rooms large enough to allow resuscitation of at least two severely injured riders simultaneously (resuscitation area)				
X-ray room or portable digital X-ray machine				
A room large enough to treat more than one rider with minor injuries simultaneously				
Temporary separation in this area, e.g. curtains or screens				
			YES	NO
Reception and waiting area				
Doctor's room				
Toilet and shower room with disabled access				
A staff changing room with male and female toilets				
Medical staff room for 12 or more persons				
Radio communication with Race Control, the CMO, ambulances and ground posts				
If the Medical Centre has normal electric power supply, it must also be permanently connected to its own U.P.S. (Uninterruptible Power Supply)				
Water supply, heating, air-conditioning and sanitation appropriate to the country				
Closed Circuit TV				
Office facilities				
Dirty utility room				
Equipment storage				
Security fence				
Telephones				
Security Guard				
Parking for ambulances				
7a) Room requirements				
1 resuscitation room				
or				
2 resuscitation rooms				
Entrance separate to entrance for general public				
Minor treatment room				
X-ray room				
Medical staff room				
Wide corridors and doors to move patients on trolleys				
7b) Equipment for resuscitation areas				
Equipment for endotracheal intubation, tracheostomy and ventilation support including suction, oxygen and anaesthetic agents				
Equipment for intravenous access including cut down and central venous cannulation and fluids including colloid plasma expanders and crystalloid solutions				
Intercostal drainage equipment				
Equipment for cardiac monitoring and resuscitation, including ECG monitoring, defibrillation and blood pressure measurement				
Equipment for immobilising the spine at all levels				
Equipment for the splinting of limb fractures				
Drugs/ IV fluids including analgesia, sedating agents, anticonvulsants,				

Discipline

IMN No.

paralysing and anaesthetic agents, cardiac resuscitation drugs/ IV fluids
 Tetanus toxoid and broad spectrum antibiotics (recommended)
 Equipment for diagnostic ultrasound
 Digital X-Ray (compulsory for GP, Superbike and Endurance WC)
 recommended for all other events provided it is not
 prohibited by national legislation)

7c) Equipment for minor injuries area

The area must have beds, dressings, suture equipment and fluids
 to treat up to three riders with minor injuries simultaneously.
 Sufficient stocks to replenish the area during the event must be
 available and sufficient doctors, nurses and paramedics or equivalent experienced
 in treating trauma must be available

7d) Is there another facility for treatment of injured riders-

Room, container or tent (please describe/specify) - only to be filled in
 if there is no Medical Centre

7e) Personnel

(please fill in the number)

Doctor
Nurses
Paramedic or equivalent
Other medical
Stretcher bearer
Driver
Other
Total

0 Thursday
 1 Friday
 2 Saturday
 3 Sunday
 4 Monday

day	0	1	2	3	4
number					

Specialists at medical centre (mentioning specialty)

	yes	no
1. Surgeon experienced in trauma		
2. Trauma resuscitation specialist		

Other Specialists

3.
4.

7f) Doping facilities (refer to Art. 13.3.2.3 of FIM Standards for Circuits)**YES**

NO

8) Vehicles for transport to hospital**Number**

9) Helicopter

Helicopter with medical equipment

Number



Discipline

IMN No.

Fluids and drugs

Respirator

Oxygen

ECG/defibrillator

YES

NO

Personnel (specify)

Doctor

Nurse, Paramedic or equivalent

Pilot

0 Thursday

1 Friday

2 Saturday

3 Sunday

4 Monday

day

0

1

2

3

4

Numbe

10) Clothing of medical personnel as per Medical Code

Doctor

Nurse, Paramedics or equivalent

YES

NO

11) Closed Circuit TV

12) Radio Operator (Medical Service)

13) Hospitals

Type of hospital

Name of Hospital

a) Local hospital

b) General Surgery

c) Orthopaedic/Trauma

d) Neurosurgery

e) Spinal Injuries

f) Cardio/Thoracic Surgery

g) Burns/Plastic Surgery

h) Vascular Surgery

i) Micro Surgery

Time to Hospital

Road

Air

min

min

Distance

km

A route map to the hospitals is enclosed

YES

NO



Discipline

IMN No.

14) Trackside positions of Doctors

Please enter for every doctor (CMO,2,3,...) where he/she will be stationed. Remember to enter only one x in each column (except where is an asterix (Type A1 and B1), please enter the post n°)

Doctor (number)		CMO	1	2	3	4	5	6	7	8	9	10
Race Control												
other place												
Type A1*												
Type B1*												
Medical GP 1												
Pit lane ground post												
Medical Centre/ Art. 7d)												
Doctor (number)		11	12	13	14	15	16	17	18	19	20	
Race Control												
other place												
Type A1*												
Type B1*												
Medical GP 1												
Pit lane ground post												
Medical Centre/ Art. 7d)												

The CIRCUIT CMO QUESTIONNAIRE has been completed by the CMO

YES ☐

NO ☐

Remarks:

CMO signature:

Date of completion :



APPENDIX G (GP)

HIGHLY CONFIDENTIAL
LIST OF MEDICALLY UNFIT RIDERS FOR DOCTORS ONLY
To be completed by the Chief Medical Officer
To: FIM Medical Officer ONLY

To the Chief Medical Officer at _____ Circuit
for event IMN N° _____ (the next event in the series)

The following riders were rendered medically **unfit** to ride at

Event IMN N°

Date of event:

NAME	RIDING N°	CLASS	DATE OF INJURY	NATURE OF INJURY / ILLNESS



APPENDIX G (GP)

HIGHLY CONFIDENTIAL
LIST OF MEDICALLY UNFIT RIDERS FOR DOCTORS ONLY
To be completed by the Chief Medical Officer
To: FIM Medical Officer ONLY

The following riders were included on a previous "List of Medically Unfit Riders" and have not yet been passed as "medically fit to ride".

NAME	RIDING N°	CLASS	DATE OF INJURY	NATURE OF INJURY / ILLNESS

Date _____ Signature of Chief Medical Officer _____

Any rider on these lists wishing to compete must have a Medical Examination to determine their medical fitness to ride in accordance the FIM Medical Code before they next compete at an event. The list must also include any rider who has been treated by a doctor other than the official doctors of the event. At the end of an event this form must be completed by the CMO to include any rider who has been injured. The form must then be given directly to the relevant FIM Medical Officer as above, for delivery to the CMO of the next event in an envelope marked "Highly Confidential". The information contained in this form must be treated in the strictest confidence and is for the FIM Medical Officer and CMO only.



APPENDIX G (GP)

HIGHLY CONFIDENTIAL
LIST OF MEDICALLY UNFIT RIDERS FOR DOCTORS ONLY
To be completed by the Chief Medical Officer
To: FIM Medical Officer ONLY

Data Privacy

The CMO and the FIM Medical Officer shall not disclose this Rider's Personal Data or Sensitive Personal Data except where such disclosures are strictly necessary in order to fulfil their obligations under the FIM Medical Code. They shall ensure that this Personal Data and Sensitive Personal Data is only retained when it remains relevant to fulfilling their obligations under the FIM Medical Code. Once it no longer serves the above-mentioned purposes, it shall be deleted, destroyed or permanently anonymised. As a general rule, retaining Sensitive Personal Data requires stronger or more compelling reasons than for Personal Data.

Any rider going through Medical Examination and therefore submitting this information including Personal Data and Personal Sensitive Data to be able to compete, shall be deemed to have agreed pursuant to applicable data protection laws and otherwise that such information be collected, processed, disclosed and used for the purposes of the implementation of the FIM Medical Code by the CMO and the FIM Medical Officer.

A rider or his authorised representative shall be entitled to request to erase, rectify or obtain any Personal Data or Sensitive Personal Data the FIM holds about him in accordance with the FIM Medical Code by sending a written request to gdpr-medical@fim.ch.

APPENDIX H1

CIRCUIT RACING GP, WSBK, ENDURANCE, MXGP, MXoN, SGP CIRCUITS

**PROCEDURE FOR A MEDICAL **ASSESSMENT** AND HOMOLOGATION
FOR CIRCUIT RACING GP, WSBK, ENDURANCE, MXGP, MXoN, SGP CIRCUITS**Medical **Assessment**

A medical **assessment** is a visit by an FIM Medical **Assessor** (FIM Medical **Officer/Director/Delegate**/Representative) during an event following receipt of the CMO questionnaire of the relevant circuit in order to:

- establish the level of the medical facilities and the medical centre of the circuit in order to ensure the highest standard of services for the safety of the riders and to establish their conformity with the FIM Medical Code and make recommendations as necessary with a view to a medical homologation based on the CMO questionnaire previously received and reviewed by the FIM Medical **Assessor**.

and

- verify all medical facilities and the medical centre together with the services required to provide appropriate and necessary medical interventions.

and

- issue a medical **assessment** and homologation report for the circuit.

An initial medical **assessment** before the event (Medical Pre-**assessment**) may be compulsory:

- To determine the minimum medical requirements and facilities for any new circuit to be used for the first time. Such an **assessment** may be followed by a further medical pre-**assessment** if necessary but will be followed by a compulsory medical **review** during the event to confirm the provision and appropriateness of these medical services.

APPENDIX H1

CIRCUIT RACING GP, WSBK, ENDURANCE, MXGP, MxóN, SGP CIRCUITS

An intermediate medical **assessment** before the event may be required for:

- a) existing circuits that have already been used and received a grade A but have undergone significant changes in the layout of the circuit or the medical centre.
- b) existing circuits which have received a grade B or C in the previous **assessment**.

A medical **assessment** during the event is compulsory for:

- a) any new circuit to be used for the first time.
- b) existing circuits which have received a grade B or C in the previous **assessment**.
- c) existing circuits that have already been used and received a grade A but have undergone significant changes in the layout of the circuit or the medical centre.
- d) the circuits for which the previous medical homologation has expired.

Assessment requests

- The FMN can request a medical **assessment**, but the FIM reserves the right to review a medical homologation and require a medical **assessment** at any time.
- In the event of inadequate medical facilities or work to be carried out to the medical centre, the medical **assessor** may decide to carry out one or more further intermediate medical reviews, if necessary.
- The medical homologation becomes effective only after a FINAL medical **assessment** resulting in a grade A or B as defined below.
- The CMI will appoint the FIM Medical **Assessor**.

Documents to be submitted for a medical **assessment** to be returned to the FIM at least 2 months prior to the medical **assessment**.

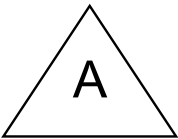
- The FIM Circuit CMO Questionnaire to be completed by the Chief Medical Officer (CMO) (see Appendix F of the FIM Medical Code).
- Two (2) copies of a map of the circuit medical services, one in hard copy and the other in electronic format to a minimum scale of 1:2000 indicating the positions.



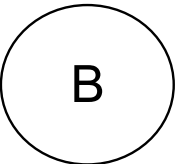
APPENDIX H1

CIRCUIT RACING GP, WSBK, ENDURANCE, MXGP, MxoN, SGP CIRCUITS

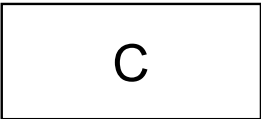
- vehicle type A in red with



- vehicle type B in blue with



- vehicle type C in green with



- medical centre in green with



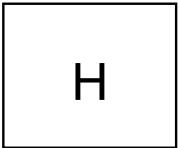
- ground post in yellow with



- pit lane ground post in yellow with



- helicopter landing area in orange with



and routes for urgent evacuation

- Plan of the circuit medical centre.

APPENDIX H1

CIRCUIT RACING GP, WSBK, ENDURANCE, MXGP, MxoN, SGP CIRCUITS

Medical **assessment** procedure

At all medical **assessments**, it shall be the duty of the FIM Medical **Assessor** to examine all the medical facilities at the circuit and make recommendations when required to ensure that these conform to the FIM Medical Code.

During the medical **assessment**, the presence of the Chief Medical Officer (CMO), the Clerk of the Course and/or a responsible representative of the circuit is required.

Grading of circuit medical **assessment** and homologations

The medical **assessment** and homologation will be graded as follows:

A: 1 year

A medical **assessment** and medical homologation report will be issued.

B: Further improvements to the medical service are required and a further medical **assessment** is compulsory the following year.

In the event of two successive assessments resulting in grade B, the circuit will automatically be downgraded to grade C as defined below.

C: The medical service provision does not comply with the requirements of the FIM Medical Code and a further detailed medical **review** is compulsory prior to any FIM event taking place.

Further medical **assessment** is required before any FIM event can take place until the circuit obtains at least a grade B.

Expenses for medical **assessments**/homologations

The costs of transport and accommodation of the Medical **Assessor** for final medical **assessment** of track or circuits resulting in a grade A, are borne by the FIM.

APPENDIX H1

CIRCUIT RACING GP, WSBK, ENDURANCE, MXGP, MxoN, SGP CIRCUITS

When the medical **assessment** results in a grade B or C requiring further **assessment** and takes place before the date of the event, these costs are invoiced to the FMNR, by way of the quarterly invoice of amounts payable by the FMNR. Following a grade C, an intermediate **assessment** is compulsory before the next event takes place. In this case, the costs of such an **assessment** will be borne by the FMNR.

When a track or circuit is **assessed** without a race being included in the calendar of the current or the coming year, the costs are also later invoiced to the FMNR, even if the circuit obtains a grade A.

The costs pertaining to a medical **assessment** during the event obtaining grade A are included in the inscription fees. Nevertheless, the costs of **assessments** obtaining grade B or C must be borne by the FMNR concerned and are, thus, not included in these inscription fees.



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11, route Suisse - CH-1295 Mies (Suisse)
to return to: cmi@fim.ch only

Confidentiality note: The data and information contained in this questionnaire are strictly confidential
This information is intended only for use of the FIM

QUESTIONNAIRE FATAL ACCIDENT

1)

FMNR

2)

DISCIPLINE

3)

EVENT

National

International

FIM

4)

CIRCUIT

VENUE

PRACTICE

RACE

Lap N°

Track

Paddock

Outside

Ground post N°

Turn N°

5)

CMO

6)

DIAGNOSES

1

2

3

4



APPENDIX L
GP

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QUESTIONNAIRE FATAL ACCIDENT

7) DATE of ACCIDENT

8) TIME of ACCIDENT

9) PROTECTIVE DEVICES WORN BY THE RIDER:

Neckbrace: YES ☐ NO ☐

Type:

Brand:

Other protective devices:
(Please specify)

10) TIME of DEATH

11) DEATH immediate ☐ evacuation ☐ hospital

12) TIME of ARRIVAL of the FIRST AIDERS

13) TIME of START RESUSCITATION

14) THERAPY



APPENDIX L
GP

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QUESTIONNAIRE FATAL ACCIDENT

15) AUTOPSY

YES

☐

NO

☐

16) RESULT of the AUTOPSY

17) REMARKS

oil

☐

dry track

☐

wet track

collision

☐

fall

☐

other

18) DOCUMENTS

videos

☐

pictures

☐

magazines

other

19) COMMENTS



APPENDIX L
GP

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QUESTIONNAIRE FATAL ACCIDENT

Data Privacy
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A rider or his authorised representative shall be entitled to request to erase, rectify or obtain any Personal Data or Sensitive Personal Data the FIM holds about him in accordance with the FIM Medical Code by sending a written request to gdpr-medical@fim.ch.

20) SIGNATURE of CMO
of the EVENT:

NAME of the CMO:

DATE:



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To download a clean version of the SCAT tools please visit the journal online (<http://dx.doi.org/10.1136/bjsports-2017-097506SCAT5>)

SCAT5®

SPORT CONCUSSION ASSESSMENT TOOL – 5TH EDITION
DEVELOPED BY THE CONCUSSION IN SPORT GROUP
FOR USE BY MEDICAL PROFESSIONALS ONLY

supported by



Patient details

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date of Injury: _____ Time: _____

WHAT IS THE SCAT5?

The SCAT5 is a standardized tool for evaluating concussions designed for use by physicians and licensed healthcare professionals¹. The SCAT5 cannot be performed correctly in less than 10 minutes.

If you are not a physician or licensed healthcare professional, please use the Concussion Recognition Tool 5 (CRT5). The SCAT5 is to be used for evaluating athletes aged 13 years and older. For children aged 12 years or younger, please use the Child SCAT5.

Preseason SCAT5 baseline testing can be useful for interpreting post-injury test scores, but is not required for that purpose. Detailed instructions for use of the SCAT5 are provided on page 7. Please read through these instructions carefully before testing the athlete. Brief verbal instructions for each test are given in italics. The only equipment required for the tester is a watch or timer.

This tool may be freely copied in its current form for distribution to individuals, teams, groups and organizations. It should not be altered in any way, re-branded or sold for commercial gain. Any revision, translation or reproduction in a digital form requires specific approval by the Concussion in Sport Group.

Recognise and Remove

A head impact by either a direct blow or indirect transmission of force can be associated with a serious and potentially fatal brain injury. If there are significant concerns, including any of the red flags listed in Box 1, then activation of emergency procedures and urgent transport to the nearest hospital should be arranged.

Key points

- Any athlete with suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration. No athlete diagnosed with concussion should be returned to play on the day of injury.
- If an athlete is suspected of having a concussion and medical personnel are not immediately available, the athlete should be referred to a medical facility for urgent assessment.
- Athletes with suspected concussion should not drink alcohol, use recreational drugs and should not drive a motor vehicle until cleared to do so by a medical professional.
- Concussion signs and symptoms evolve over time and it is important to consider repeat evaluation in the assessment of concussion.
- The diagnosis of a concussion is a clinical judgment, made by a medical professional. The SCAT5 should NOT be used by itself to make, or exclude, the diagnosis of concussion. An athlete may have a concussion even if their SCAT5 is “normal”.

Remember:

- The basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Do not attempt to move the athlete (other than that required for airway management) unless trained to do so.
- Assessment for a spinal cord injury is a critical part of the initial on-field assessment.
- Do not remove a helmet or any other equipment unless trained to do so safely.

The following elements should be assessed for all athletes who are suspected of having a concussion prior to proceeding to the neurocognitive assessment and ideally should be done on-field after the first first aid / emergency care priorities are completed.

Consideration of transportation to a medical facility should be at the discretion of the physician or licensed healthcare professional.

STEP 1: RED FLAGS

- Neck pain or tenderness
- Double vision
- Weakness or tingling/ burning in arms or legs
- Severe or increasing headache
- Seizure or convulsion
- Loss of consciousness
- Deteriorating conscious state
- Vomiting
- Increasingly restless, agitated or combative

Witnessed ☐ Observed on Video ☐

Lying motionless on the playing surface	Y	N
Balance / gait difficulties / motor incoordination: stumbling, slow / laboured movements	Y	N
Disorientation or confusion, or an inability to respond appropriately to questions	Y	N
Blank or vacant look	Y	N
Facial injury after head trauma	Y	N

"I am going to ask you a few questions, please listen carefully and give your best effort. First, tell me what happened?"

Mark Y for correct answer / N for incorrect

What venue are we at today?	Y	N
Which half is it now?	Y	N
Who scored last in this match?	Y	N
What team did you play last week / game?	Y	N
Did your team win the last game?	Y	N

Note: Appropriate sport-specific questions may be substituted.

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

Time of assessment			
Date of assessment			

Best eye response (E)			
No eye opening	1	1	1
Eye opening in response to pain	2	2	2
Eye opening to speech	3	3	3
Eyes opening spontaneously	4	4	4

Best verbal response (V)

No verbal response	1	1	1
Incomprehensible sounds	2	2	2
Inappropriate words	3	3	3
Confused	4	4	4
Oriented	5	5	5

Best motor response (M)

No motor response	1	1	1
Extension to pain	2	2	2
Abnormal flexion to pain	3	3	3
Flexion / Withdrawal to pain	4	4	4
Localizes to pain	5	5	5
Obeys commands	6	6	6
Glasgow Coma score (E + V + M)			

Does the athlete report that their neck is pain free at rest?	Y	N
If there is NO neck pain at rest , does the athlete have a full range of ACTIVE pain free movement?	Y	N
Is the limb strength and sensation normal?	Y	N

In a patient who is not lucid or fully conscious, a cervical spine injury should be assumed until proven otherwise.

3



STEP 3: COGNITIVE SCREENING

Standardised Assessment of Concussion (SAC)⁴

ORIENTATION

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
What time is it right now? (within 1 hour)	0	1
Orientation score	of 5	

IMMEDIATE MEMORY

The Immediate Memory component can be completed using the traditional 5-word per trial list or optionally using 10-words per trial to minimise any ceiling effect. All 3 trials must be administered irrespective of the number correct on the first trial. Administer at the rate of one word per second.

Please choose EITHER the 5 or 10 word list groups and circle the specific word list chosen for this test.

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order. For Trials 2 & 3: I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before.

List						Score (of 5)		
Alternate 5 word lists						Trial 1	Trial 2	Trial 3
A	Finger	Penny	Blanket	Lemon	Insect			
B	Candle	Paper	Sugar	Sandwich	Wagon			
C	Baby	Monkey	Perfume	Sunset	Iron			
D	Elbow	Apple	Carpet	Saddle	Bubble			
E	Jacket	Arrow	Pepper	Cotton	Movie			
F	Dollar	Honey	Mirror	Saddle	Anchor			
Immediate Memory Score						of 15		
Time that last trial was completed								

List						Score (of 10)		
Alternate 10 word lists						Trial 1	Trial 2	Trial 3
G	Finger	Penny	Blanket	Lemon	Insect			
	Candle	Paper	Sugar	Sandwich	Wagon			
H	Baby	Monkey	Perfume	Sunset	Iron			
	Elbow	Apple	Carpet	Saddle	Bubble			
I	Jacket	Arrow	Pepper	Cotton	Movie			
	Dollar	Honey	Mirror	Saddle	Anchor			
Immediate Memory Score						of 30		
Time that last trial was completed								

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

CONCENTRATION

DIGITS BACKWARDS

Please circle the Digit list chosen (A, B, C, D, E, F). Administer at the rate of one digit per second reading DOWN the selected column.

I am going to read a string of numbers and when I am done, you repeat them back to me in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

Concentration Number Lists (circle one)					
List A	List B	List C			
4-9-3	5-2-6	1-4-2	Y	N	0
6-2-9	4-1-5	6-5-8	Y	N	1
3-8-1-4	1-7-9-5	6-8-3-1	Y	N	0
3-2-7-9	4-9-6-8	3-4-8-1	Y	N	1
6-2-9-7-1	4-8-5-2-7	4-9-1-5-3	Y	N	0
1-5-2-8-6	6-1-8-4-3	6-8-2-5-1	Y	N	1
7-1-8-4-6-2	8-3-1-9-6-4	3-7-6-5-1-9	Y	N	0
5-3-9-1-4-8	7-2-4-8-5-6	9-2-6-5-1-4	Y	N	1
List D	List E	List F			
7-8-2	3-8-2	2-7-1	Y	N	0
9-2-6	5-1-8	4-7-9	Y	N	1
4-1-8-3	2-7-9-3	1-6-8-3	Y	N	0
9-7-2-3	2-1-6-9	3-9-2-4	Y	N	1
1-7-9-2-6	4-1-8-6-9	2-4-7-5-8	Y	N	0
4-1-7-5-2	9-4-1-7-5	8-3-9-6-4	Y	N	1
2-6-4-8-1-7	6-9-7-3-8-2	5-8-6-2-4-9	Y	N	0
8-4-1-9-3-5	4-2-7-9-3-8	3-1-7-8-2-6	Y	N	1
Digits Score:			of 4		

MONTHS IN REVERSE ORDER

Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November. Go ahead.

Dec - Nov - Oct - Sept - Aug - Jul - Jun - May - Apr - Mar - Feb - Jan	0	1
Months Score	of 1	
Concentration Total Score (Digits + Months)	of 5	



4

STEP 4: NEUROLOGICAL SCREEN

See the instruction sheet (page 7) for details of test administration and scoring of the tests.

Can the patient read aloud (e.g. symptom check-list) and follow instructions without difficulty?	Y	N
Does the patient have a full range of pain-free PASSIVE cervical spine movement?	Y	N
Without moving their head or neck, can the patient look side-to-side and up-and-down without double vision?	Y	N
Can the patient perform the finger nose coordination test normally?	Y	N
Can the patient perform tandem gait normally?	Y	N

BALANCE EXAMINATION

Modified Balance Error Scoring System (mBESS) testing⁵

Which foot was tested (i.e. which is the non-dominant foot) ☐ Left ☐ Right

Testing surface (hard floor, field, etc.) _____

Footwear (shoes, barefoot, braces, tape, etc.) _____

Condition	Errors
Double leg stance	of 10
Single leg stance (non-dominant foot)	of 10
Tandem stance (non-dominant foot at the back)	of 10
Total Errors	of 30

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

5

STEP 5: DELAYED RECALL:

The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section. Score 1 pt. for each correct response.

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order.

Time Started

Please record each word correctly recalled. Total score equals number of words recalled.

Total number of words recalled accurately:

of 5

 or

of 10

6

STEP 6: DECISION

	Date & time of assessment:		
Domain			
Symptom number (of 22)			
Symptom severity score (of 132)			
Orientation (of 5)			
Immediate memory	of 15 of 30	of 15 of 30	of 15 of 30
Concentration (of 5)			
Neuro exam	Normal Abnormal	Normal Abnormal	Normal Abnormal
Balance errors (of 30)			
Delayed Recall	of 5 of 10	of 5 of 10	of 5 of 10

Date and time of injury: _____

If the athlete is known to you prior to their injury, are they different from their usual self?
☐ Yes ☐ No ☐ Unsure ☐ Not Applicable
(If different, describe why in the clinical notes section)

Concussion Diagnosed?
☐ Yes ☐ No ☐ Unsure ☐ Not Applicable

If re-testing, has the athlete improved?
☐ Yes ☐ No ☐ Unsure ☐ Not Applicable

I am a physician or licensed healthcare professional and I have personally administered or supervised the administration of this SCAT5.

Signature: _____

Name: _____

Title: _____

Registration number (if applicable): _____

Date: _____

SCORING ON THE SCAT5 SHOULD NOT BE USED AS A STAND-ALONE METHOD TO DIAGNOSE CONCUSSION, MEASURE RECOVERY OR MAKE DECISIONS ABOUT AN ATHLETE'S READINESS TO RETURN TO COMPETITION AFTER CONCUSSION.

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

<div>Blank area for notes or additional information.</div>	DOB: _____
	Address: _____
	ID number: _____
	Examiner: _____
Date: _____	

Blank area for notes or additional information.



(To be given to the person monitoring the concussed athlete)

If you notice any change in behaviour, vomiting, worsening headache, double vision or excessive drowsiness, please telephone your doctor or the nearest hospital emergency department immediately.

Other important points:

Initial rest: Limit physical activity to routine daily activities (avoid exercise, training, sports) and limit activities such as school, work, and screen time to a level that does not worsen symptoms.

- 1) Avoid alcohol
- 2) Avoid prescription or non-prescription drugs without medical supervision. Specifically:
 - a) Avoid sleeping tablets
 - b) Do not use aspirin, anti-inflammatory medication or stronger pain medications such as narcotics
- 3) Do not drive until cleared by a healthcare professional.
- 4) Return to play/sport requires clearance by a healthcare professional.

Clinic phone number: _____

Patient's name: _____

Date / time of injury: _____

Date / time of medical review:

Healthcare Provider: _____

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Contact details or stamp



INSTRUCTIONS

Words in *Italics* throughout the SCAT5 are the instructions given to the athlete by the clinician

Symptom Scale

The time frame for symptoms should be based on the type of test being administered. At baseline it is advantageous to assess how an athlete “typically” feels whereas during the acute/post-acute stage it is best to ask how the athlete feels at the time of testing.

The symptom scale should be completed by the athlete, not by the examiner. In situations where the symptom scale is being completed after exercise, it should be done in a resting state, generally by approximating his/her resting heart rate.

For total number of symptoms, maximum possible is 22 except immediately post injury, if sleep item is omitted, which then creates a maximum of 21.

For Symptom severity score, add all scores in table, maximum possible is 22 x 6 = 132, except immediately post injury if sleep item is omitted, which then creates a maximum of 21x6=126.

Immediate Memory

The Immediate Memory component can be completed using the traditional 5-word per trial list or, optionally, using 10-words per trial. The literature suggests that the Immediate Memory has a notable ceiling effect when a 5-word list is used. In settings where this ceiling is prominent, the examiner may wish to make the task more difficult by incorporating two 5-word groups for a total of 10 words per trial. In this case, the maximum score per trial is 10 with a total trial maximum of 30.

Choose one of the word lists (either 5 or 10). Then perform 3 trials of immediate memory using this list.

Complete all 3 trials regardless of score on previous trials.

“I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.” The words must be read at a rate of one word per second.

Trials 2 & 3 MUST be completed regardless of score on trial 1 & 2.

Trials 2 & 3:

“I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before.”

Score 1 pt. for each correct response. Total score equals sum across all 3 trials. Do NOT inform the athlete that delayed recall will be tested.

Concentration

Digits backward

Choose one column of digits from lists A, B, C, D, E or F and administer those digits as follows:

Say: *“I am going to read a string of numbers and when I am done, you repeat them back to me in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.”*

Begin with first 3 digit string.

If correct, circle “Y” for correct and go to next string length. If incorrect, circle “N” for the first string length and read trial 2 in the same string length. One point possible for each string length. Stop after incorrect on both trials (2 N’s) in a string length. The digits should be read at the rate of one per second.

Months in reverse order

“Now tell me the months of the year in reverse order. Start with the last month and go backward. So you’ll say December, November ... Go ahead”

1 pt. for entire sequence correct

Delayed Recall

The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section.

“Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order.”

Score 1 pt. for each correct response

Modified Balance Error Scoring System (mBESS)⁵ testing

This balance testing is based on a modified version of the Balance Error Scoring System (BESS)⁵. A timing device is required for this testing.

Each of 20-second trial/stance is scored by counting the number of errors. The examiner will begin counting errors only after the athlete has assumed the proper start position. The modified BESS is calculated by adding one error point for each error during the three 20-second tests. The maximum number of errors for any single condition is 10. If the athlete commits multiple errors simultaneously, only

one error is recorded but the athlete should quickly return to the testing position, and counting should resume once the athlete is set. Athletes that are unable to maintain the testing procedure for a minimum of five seconds at the start are assigned the highest possible score, ten, for that testing condition.

OPTION: For further assessment, the same 3 stances can be performed on a surface of medium density foam (e.g., approximately 50cm x 40cm x 6cm).

Balance testing – types of errors

- | | | |
|---------------------------------|---|---|
| 1. Hands lifted off iliac crest | 3. Step, stumble, or fall | 5. Lifting forefoot or heel |
| 2. Opening eyes | 4. Moving hip into > 30 degrees abduction | 6. Remaining out of test position > 5 sec |

“I am now going to test your balance. Please take your shoes off (if applicable), roll up your pant legs above ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of three twenty second tests with different stances.”

(a) Double leg stance:

“The first stance is standing with your feet together with your hands on your hips and with your eyes closed. You should try to maintain stability in that position for 20 seconds. I will be counting the number of times you move out of this position. I will start timing when you are set and have closed your eyes.”

(b) Single leg stance:

“If you were to kick a ball, which foot would you use? [This will be the dominant foot] Now stand on your non-dominant foot. The dominant leg should be held in approximately 30 degrees of hip flexion and 45 degrees of knee flexion. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes.”

(c) Tandem stance:

“Now stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes.”

Tandem Gait

Participants are instructed to stand with their feet together behind a starting line (the test is best done with footwear removed). Then, they walk in a forward direction as quickly and as accurately as possible along a 38mm wide (sports tape), 3 metre line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the end of the 3m line, they turn 180 degrees and return to the starting point using the same gait. Athletes fail the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object.

Finger to Nose

“I am going to test your coordination now. Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended), pointing in front of you. When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose, and then return to the starting position, as quickly and as accurately as possible.”

References

1. McCrory et al. Consensus Statement On Concussion In Sport – The 5th International Conference On Concussion In Sport Held In Berlin, October 2016. British Journal of Sports Medicine 2017 (available at www.bjsm.bmj.com)
2. Maddocks, DL; Dicker, GD; Saling, MM. The assessment of orientation following concussion in athletes. Clinical Journal of Sport Medicine 1995; 5: 32-33
3. Jennett, B., Bond, M. Assessment of outcome after severe brain damage: a practical scale. Lancet 1975; i: 480-484
4. McCrea M. Standardized mental status testing of acute concussion. Clinical Journal of Sport Medicine. 2001; 11: 176-181
5. Guskiewicz KM. Assessment of postural stability following sport-related concussion. Current Sports Medicine Reports. 2003; 2: 24-30



CONCUSSION INFORMATION

Any athlete suspected of having a concussion should be removed from play and seek medical evaluation.

Signs to watch for

Problems could arise over the first 24-48 hours. The athlete should not be left alone and must go to a hospital at once if they experience:

- Worsening headache
- Drowsiness or inability to be awakened
- Inability to recognize people or places
- Repeated vomiting
- Unusual behaviour or confusion or irritable
- Seizures (arms and legs jerk uncontrollably)
- Weakness or numbness in arms or legs
- Unsteadiness on their feet.
- Slurred speech

Consult your physician or licensed healthcare professional after a suspected concussion. Remember, it is better to be safe.

Rest & Rehabilitation

After a concussion, the athlete should have physical rest and relative cognitive rest for a few days to allow their symptoms to improve. In most cases, after no more than a few days of rest, the athlete should gradually increase their daily activity level as long as their symptoms do not worsen. Once the athlete is able to complete their usual daily activities without concussion-related symptoms, the second step of the return to play/sport progression can be started. The athlete should not return to play/sport until their concussion-related symptoms have resolved and the athlete has successfully returned to full school/learning activities.

When returning to play/sport, the athlete should follow a stepwise, medically managed exercise progression, with increasing amounts of exercise. For example:

Graduated Return to Sport Strategy

Exercise step	Functional exercise at each step	Goal of each step
1. Symptom-limited activity	Daily activities that do not provoke symptoms.	Gradual reintroduction of work/school activities.
2. Light aerobic exercise	Walking or stationary cycling at slow to medium pace. No resistance training.	Increase heart rate.
3. Sport-specific exercise	Running or skating drills. No head impact activities.	Add movement.
4. Non-contact training drills	Harder training drills, e.g., passing drills. May start progressive resistance training.	Exercise, coordination, and increased thinking.
5. Full contact practice	Following medical clearance, participate in normal training activities.	Restore confidence and assess functional skills by coaching staff.
6. Return to play/sport	Normal game play.	

In this example, it would be typical to have 24 hours (or longer) for each step of the progression. If any symptoms worsen while exercising, the athlete should go back to the previous step. Resistance training should be added only in the later stages (Stage 3 or 4 at the earliest).

Written clearance should be provided by a healthcare professional before return to play/sport as directed by local laws and regulations.

Graduated Return to School Strategy

Concussion may affect the ability to learn at school. The athlete may need to miss a few days of school after a concussion. When going back to school, some athletes may need to go back gradually and may need to have some changes made to their schedule so that concussion symptoms do not get worse. If a particular activity makes symptoms worse, then the athlete should stop that activity and rest until symptoms get better. To make sure that the athlete can get back to school without problems, it is important that the healthcare provider, parents, caregivers and teachers talk to each other so that everyone knows what the plan is for the athlete to go back to school.

Note: If mental activity does not cause any symptoms, the athlete may be able to skip step 2 and return to school part-time before doing school activities at home first.

Mental Activity	Activity at each step	Goal of each step
1. Daily activities that do not give the athlete symptoms	Typical activities that the athlete does during the day as long as they do not increase symptoms (e.g. reading, texting, screen time). Start with 5-15 minutes at a time and gradually build up.	Gradual return to typical activities.
2. School activities	Homework, reading or other cognitive activities outside of the classroom.	Increase tolerance to cognitive work.
3. Return to school part-time	Gradual introduction of school-work. May need to start with a partial school day or with increased breaks during the day.	Increase academic activities.
4. Return to school full-time	Gradually progress school activities until a full day can be tolerated.	Return to full academic activities and catch up on missed work.

If the athlete continues to have symptoms with mental activity, some other accommodations that can help with return to school may include:

- Starting school later, only going for half days, or going only to certain classes
- More time to finish assignments/tests
- Quiet room to finish assignments/tests
- Not going to noisy areas like the cafeteria, assembly halls, sporting events, music class, shop class, etc.
- Taking lots of breaks during class, homework, tests
- No more than one exam/day
- Shorter assignments
- Repetition/memory cues
- Use of a student helper/tutor
- Reassurance from teachers that the child will be supported while getting better

The athlete should not go back to sports until they are back to school/learning, without symptoms getting significantly worse and no longer needing any changes to their schedule.

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Br J Sports Med published online April 26, 2017

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APPENDIX N

FIM Alcohol Testing Procedure

Riders participating in any FIM **Circuit Racing** World Championship **GP** round will be subject to alcohol breath and/or blood testing in-competition* in accordance with the following procedure:

*In-Competition = for the purpose of the **alcohol testing procedure**, the in-competition period is defined as the period commencing 12 hours before the rider rides his bike for the first time during the event**, ending thirty (30) minutes after the end of the last race*** in his class and category. **This is the minimum period of time that riders should abstain from alcohol prior to competition for safety reasons.** For the avoidance of doubt, the possession, use and consumption of alcohol during the podium ceremony is not considered a violation under the FIM Medical Code providing that the podium takes place at the end of the event.

**Event: an event is defined as a single sporting event (composed, depending on the discipline, of practice sessions, qualifying practice sessions and race).

1. Such testing will be undertaken by an FIM official at the event using an FIM approved testing device.
2. Testing will be undertaken at the event by an FIM official who is trained in the use of the alcohol testing device.
3. Testing will be performed with no prior notice.
4. Riders will be selected randomly by ballot or at the discretion of FIM officials.
5. At least three riders will be tested at each event.
6. In-competition* alcohol testing may be included as part of a special medical examination conducted at the request of the CMO, Race Director, Clerk of the Course, Medical Director, any member of the Race Direction or the FIM Medical Representative in accordance with the FIM Medical Code.
7. Following notification of selection for alcohol testing, the rider must immediately attend the designated location for testing.
8. A refusal to undergo alcohol testing will be regarded for the purpose of the application of sanctions as identical to a test reading above the permitted threshold.
9. Any rider who refuses to submit himself to alcohol testing will be automatically and immediately excluded from further participation in, and disqualified from the event by the Race Direction.

Such decision is final and may not be appealed against. Such automatic and immediate decision may not under any circumstances give rise to any claim from the rider or any other affected party. The details of the case will be notified immediately to the FIM Legal Department (legal@fim.ch) by the Race Direction.



10. Alcohol testing will normally take place in a location that maintains rider confidentiality, is secure with restricted access, and is in a suitable location with adequate facilities such as light and ventilation.
11. Each rider will be tested individually and in private.
12. The alcohol testing device will be determined and provided by the FIM.
13. The device will be calibrated in accordance with the manufacturer's instructions.
14. The alcohol test procedure will take place where possible in the presence of a witness.
15. The testing procedure and use of the device will be explained to the rider.
16. The rider will be allowed to select an individual mouthpiece from a selection of individually sealed mouthpieces for their individual use and attach it to the device.
17. The rider will blow steadily into the mouthpiece until the device indicates that an adequate sample of breath has been obtained.
18. The test result displayed on the device will be shown to the rider and recorded on the test record documentation.
19. The time of each test will also be recorded on the documentation.
20. The documentation will then be signed by the rider and officials present at the test. Any refusal by a rider to sign the documentation will be duly noted and recorded on the documentation but will not invalidate the result of the test.
21. The results and associated documentation will be forwarded to the FIM Administration.
22. If the test reading is greater than the permitted threshold of 0.10g/L, a confirmatory test will be performed following a waiting period of at least fifteen minutes starting after the first result of the first test has been recorded. If the first test reading is below or equal to 0.00g/L, no further test will be conducted.
23. As part of this confirmatory test the rider will again be asked to select a further mouthpiece from a selection of sealed mouthpieces. (The purpose of conducting a confirmatory test after a period of fifteen minutes in the event of a positive test is to ensure that any residual alcohol in the rider's mouth from food, mouth wash etc. is no longer present in order to limit false positive results).
24. If the result of the confirmatory test is above the permitted threshold the rider will be automatically and immediately excluded from further participation in, and disqualified from the event by the Race Direction.

Such decision is final and may not be appealed against. Such automatic and immediate decision may not under any circumstances give rise to any claim from the rider or any other affected party.

The details of the case will be notified immediately by the Race Direction to the FIM Legal Department (legal@fim.ch).
25. Following the automatic and immediate disqualification at the event, the Race Direction may further give additional sanctions which can reach to a suspension of up to a maximum of 18 (eighteen) months. The length of the suspension shall be decided on the riders' degree of fault and on any aggravating (e.g. recidivism) and/or mitigating factors. Riders and other persons shall receive credit for a Provisional Suspension against any period of Ineligibility which is ultimately imposed. If the rider establishes that he bears no fault (i.e. no negligent or intentional failure; e.g. no negligence), no suspension or other sanctions may be imposed on him.



26. If the result of the confirmatory test is below the permitted threshold no further action will be taken.
27. Any sanction following the immediate disqualification of the event (suspension for further events) that may be imposed to the rider may be petitioned to the FIM Stewards Panel in writing and with reasons.



APPENDIX N
HIGHLY CONFIDENTIAL
BREATH ALCOHOL TEST

Rider's name, first name: _____ Riding Number: _____

Title of the event: FIM _____

Venue: _____ Country: _____ Date: _____

FMNR: _____ IMN N°: _____

FIM Jury Pres. or Race Direction member or FIM Official: _____

Witness 1: (if any) _____ Position: _____

Witness 2: (if any) _____ Position: _____

Other (if present): _____ Position: _____

Other (if present): _____ Position: _____

In accordance with the FIM Medical Code, the following rider must take part of the control (Breath Alcohol Test). The Alcohol control can take place anytime during the event.

The undersigned certifies to have tested the above-mentioned rider with the following results (N.B Positive Test means >0.10g/L):

Test 1: Positive ☐ Negative ☐ Result: _____ .g/L Time: _____

Test 2: Positive ☐ Negative ☐ Result: _____ .g/L Time: _____

Data Privacy

The FIM Jury President, members of the Race Direction and appointed FIM Officials shall not disclose this Personal Data or Sensitive Personal Data of the riders except where such disclosures are strictly necessary in order to fulfil their obligations under the FIM Medical Code. They shall ensure that this Personal Data and Sensitive Personal Data is only retained when it remains relevant to fulfilling their obligations under the FIM Medical Code. Once it no longer serves the above-mentioned purposes, it shall be deleted, destroyed and permanently anonymised. As a general rule, retaining Sensitive Personal Data requires stronger or more compelling reasons than for Personal Data.



APPENDIX N
HIGHLY CONFIDENTIAL
BREATH ALCOHOL TEST

Any rider going through breath alcohol tests and therefore submitting this information including Personal Data and Personal Sensitive Data to be able to compete shall be deemed to have agreed, pursuant to applicable data protection laws and otherwise, that such information be collected, processed, disclosed and used for the purposes of the implementation of the FIM Medical Code by the FIM Jury President, members of the Race Direction and appointed FIM Officials.

Riders or their authorised representative shall be entitled to request to erase, rectify or obtain any Personal Data or Sensitive Personal Data the FIM holds about them in accordance with the FIM Medical Code by sending a written request to gdpr-medical@fim.ch.

Rider's signature: _____

Date: _____ Time: _____

FIM Jury Pres. or Race Direction member or Appointed FIM Official signature: _____

Witness 2: signature: (if any) _____

Witness 1: signature: (if any) _____

Other person present: signature: _____

Other person present: signature _____

*** Original of this document must be sent to the FIM **Medical Department:** cmi@fim.ch

*** Copy of this document must be given to the rider ***

6. ANTIDOPING CODE

The Regulations will be defined by the “FIM ANTIDOPING CODE”.

7. ENVIRONMENTAL CODE

The Regulations will be defined by the “FIM Environmental CODE”.

8. CODE OF ETHICS

The Regulations will be defined by the “FIM CODE OF ETHICS”.



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