



## **INVITATION TO TENDER FOR SOLE SUPPLY CONTRACT**

### **TENDER SUMMARY AND ADDITIONAL TENDER REQUIREMENTS**

The FIA's objective is to select an exclusive supplier of a **battery system** whose task will be to ensure the production and delivery of the battery system for **seasons 9 (2022-2023), 10 (2023-2024) and 11 (2024-2025)** of the **FIA Formula E World Championship** (“the Championship”).

Interested parties are hereby invited to tender to become the exclusive supplier of the battery system for seasons 9, 10 and 11 of the Championship.

The selected tenderer will be invited to enter into a contract with the FIA that will establish the terms of the tenderer's appointment as exclusive supplier. The exclusive supplier will supply the product directly to the car manufacturers (not to the FIA) under terms and conditions to be agreed.

**Bids must be submitted to the FIA Administration by e-mail to the following address: [tenderingprocedure@fia.com](mailto:tenderingprocedure@fia.com), in accordance with the FIA's "Invitation to tender for sole supply contract - tendering instructions" available on the FIA's website: [www.fia.com](http://www.fia.com), apart from article 1.1.8 and article 3 which will not apply to the present invitation to tender.**

Bids will be evaluated on the basis of the criteria and information mentioned below under “Additional Requirements”.

The FIA reserves the right at any time, without giving reasons therefore and at its sole discretion, to amend, modify or terminate this invitation to tender and the timeline below (including doing a further round of bids among all or part of the tenderers) and/or to issue a new invitation to tender. Moreover, the FIA reserves the right, without giving reasons therefore and at its sole discretion, not to select any tenderer and/or not to enter into a contract with the selected tenderer. In case the tenderer is directly or indirectly involved in the Championship (in particular if the tenderer is also a car manufacturer or competitor in the Championship), the FIA reserves the right to implement measures to ensure that the principles of sporting equality are respected.

Publication of invitation to tender:  
**Tender submission date:**  
FIA final selection:

16 December 2019  
**~~31 March~~ 14 April 2020**  
19 June 2020

## **ADDITIONAL REQUIREMENTS**

### **1. CRITERIA**

Among other elements mentioned in these “Additional Requirements”, bids will be evaluated on the basis of the Technical Specifications (Appendix III) and other applicable regulations, sporting equity, industry expertise, safety and cost reduction.

In addition, the FIA may consider the following parameters, taking into account the particular context of and the aims pursued by the Championship:

- Commitments, actions, credibility and experience from the tenderer in favour of a more sustainable motorsport and mobility;
- Steps taken and efforts made to allow the transfer of battery technology developments between competition vehicles and ordinary vehicles;
- Proposal relating to innovative design of the battery considering the specificities of the Championship compared to other existing championships.

### **2. TECHNICAL INFORMATION**

Tenderers are invited to fill in the technical information as per article 3 of Appendix III.

### **3. MARKETING**

#### **a) COMMERCIAL RIGHTS IN CONNECTION WITH THE CHAMPIONSHIP**

Tenderers are invited to contact the Promoter of the Championship, with regard to the acquisition of commercial rights in connection with the Championship. To that end, a presentation is available from the Promoter on request.

The tenderer shall provide all details relating to the financial or in-kind contribution it undertakes to make in exchange for commercial rights in its bid.

The Promoter’s contact details are:

Frederic Espinos

Formula E | Sporting Director

E-mail: [fre@fiaformulae.com](mailto:fre@fiaformulae.com)

Phone number: [+44 \(0\)7741 165180](tel:+44207741165180)

3 Shortlands | 9th Floor | Hammersmith | London | W6 8DA | United Kingdom

#### **b) OPTIONAL CSR CONTRIBUTION**

In addition to the opportunity described above to acquire commercial rights in connection with the Championship, tenderers are invited to make a financial or in kind proposal to the FIA regarding FIA campaigns relating to diversity, inclusivity and advocacy. To this end, a presentation is available from the FIA Marketing and Events Department.

Without any obligation to do so, if the tenderer chooses to offer a CSR contribution, it shall provide all details relating to the financial or in kind commitments it would make in exchange for such actions to take place.

The person to contact is :

James Hough  
Email: [jhough@fia.com](mailto:jhough@fia.com)  
Phone number: +41 78 698 76 89

#### **4. SUPPLY AGREEMENT**

The exclusive supplier will supply the product directly to the car manufacturers.

As part of their tender proposal, tenderers shall submit a draft of the supply agreement they intend to conclude in case they are selected, to ensure it contains minimum terms as will be discussed with the FIA.

#### **5. DUE DILIGENCE**

In the context of this invitation to tender, tenderers are also invited to fill in the “Questionnaire Compliance – Due Diligence” attached in Appendix V.

The fia reserves the right to carry out further due diligence, including financial due diligence, on the tenderers and their considered sub-contractors.

DRAFT CONTRACT FOR THE SUPPLY OF THE BATTERY SYSTEM  
IN THE SEASONS 9 (2022-2023), 10 (2023-2024) and 11 (2024-2025)  
OF THE FIA FORMULA E WORLD CHAMPIONSHIP

BETWEEN

**The FEDERATION INTERNATIONALE DE L'AUTOMOBILE (FIA)**

Place de la Concorde 8  
75008 Paris  
France

hereinafter referred to as the "**FIA**"

ON THE ONE HAND,

AND

[•]

hereinafter referred to as the "**PROVIDER**"

ON THE OTHER HAND.

## **PART 1 - GENERAL CONDITIONS**

### **RECITALS**

- (A) The FIA's authority in relation to international motor sport has been recognised since 1904 when national automobile clubs came together to establish the FIA to provide, amongst other things, an international forum to regulate motor sport internationally.
- (B) The FIA is the sole body governing international motor sport and is recognised by its members as the sole authority having the sporting power with the right to organise international FIA championships, including the CHAMPIONSHIP.
- (C) The FIA has an absolute obligation conferred on it by its members to safeguard its authority over all safety, sporting, technical and disciplinary matters relating to the CHAMPIONSHIP, as well as traditional values.
- (D) The FIA will publish the GOVERNING RULES annually.
- (E) The FIA has determined that the interests of the CHAMPIONSHIP require that a single supplier of the PRODUCT should be appointed for a limited term.
- (F) It is intended that the FIA and the PROVIDER will enter into this CONTRACT pursuant to which the PROVIDER will be appointed as the sole supplier of the PRODUCT to the CHAMPIONSHIP for the term set out herein.

### **1. APPOINTMENT AND SUPPLY**

- 1.1 The FIA hereby appoints the PROVIDER to be the exclusive supplier of the PRODUCT to the CAR MANUFACTURERS for the CHAMPIONSHIP and the PROVIDER hereby accepts this appointment and agrees to supply the PRODUCT to the CAR MANUFACTURERS for the CHAMPIONSHIP in accordance with the terms of this CONTRACT and the terms of the SUPPLY AGREEMENTS.
- 1.2 Following from its appointment, the PROVIDER shall enter into a SUPPLY AGREEMENT with each CAR MANUFACTURER setting out the terms upon which the PRODUCT shall be supplied.
- 1.3 The PRODUCT that is supplied by the PROVIDER to the CAR MANUFACTURERS shall be compliant with the TECHNICAL REGULATIONS, the SPORTING REGULATIONS and the TECHNICAL SPECIFICATIONS.

### **2. RELATIONS BETWEEN THE PROVIDER AND THE CAR MANUFACTURERS**

- 2.1 The PROVIDER shall treat all CAR MANUFACTURERS in accordance with the PRINCIPLES OF SPORTING EQUALITY.
- 2.2 The PROVIDER shall supply the PRODUCT to all CAR MANUFACTURERS on equivalent terms. It shall enter into a standard SUPPLY AGREEMENT with each CAR MANUFACTURER.
- 2.3 All SUPPLY AGREEMENTS shall be fully compliant with the PRINCIPLES OF SPORTING EQUALITY, the CONTRACT, the SPORTING REGULATIONS, the TECHNICAL REGULATIONS and the TECHNICAL SPECIFICATIONS.

- 2.4 Each SUPPLY AGREEMENT requiring a CAR MANUFACTURER to purchase the PRODUCT for use at more than one COMPETITION shall include a clause permitting the CAR MANUFACTURER and/or PROVIDER to terminate the SUPPLY AGREEMENT without a penalty of any kind in the event of expiry or earlier termination of the CONTRACT.
- 2.5 If requested by the FIA, the PROVIDER shall supply a copy of each SUPPLY AGREEMENT in order to demonstrate that the PRINCIPLES OF SPORTING EQUALITY are maintained. With respect to the FIA, the PROVIDER hereby waives and confirms that it shall not assert or seek to rely on any confidentiality provision in any SUPPLY AGREEMENT or other agreement relevant to the supply of the PRODUCT to prevent the FIA from reviewing relevant agreements or carrying out its regulatory functions (including ensuring that the PRINCIPLES OF SPORTING EQUALITY are maintained).
- 2.6 The FIA may request amendments to a SUPPLY AGREEMENT if it considers that the SUPPLY AGREEMENT is not consistent or compatible with, or is otherwise contrary to, the PRINCIPLES OF SPORTING EQUALITY. For the avoidance of doubt, the PROVIDER's obligation to abide by the PRINCIPLES OF SPORTING EQUALITY shall not be limited or otherwise affected by the FIA's review of a SUPPLY AGREEMENT and/or a request for an amendment to be made.
- 2.7 In the event of uncertainty regarding whether any action taken or proposed to be taken by the PROVIDER may breach the PRINCIPLES OF SPORTING EQUALITY, the PROVIDER shall request guidance from the FIA, which shall make a determination in this regard.
- 2.8 Where such a determination is made by the FIA, the PROVIDER's actions in complying with that determination shall be deemed to be in compliance with the PROVIDER's obligation in GENERAL CONDITION 2.1 to treat all CAR MANUFACTURERS in accordance with the PRINCIPLES OF SPORTING EQUALITY.

### **3. LIABILITY**

- 3.1 Without prejudice to the FIA's other rights, the PROVIDER shall indemnify and hold harmless the FIA from and against all reasonably foreseeable losses incurred by the FIA as a direct result of the PROVIDER's:
- (a) failure to supply the PRODUCT of the requisite quantity;
  - (b) failure to supply the PRODUCT of the requisite quality;
  - (c) negligence in the supply of the PRODUCT; or
  - (d) any other default in the supply of the PRODUCT
- 3.2 The PROVIDER represents and warrants that it is in a position to meet any liability that may arise under GENERAL CONDITION 3.1 above and hereby covenants to maintain such position for the period of time during which the PROVIDER may be liable.
- 3.3 Notwithstanding GENERAL CONDITIONS 3.1 and 3.2 above, the PROVIDER which enters into the CONTRACT will produce an attestation certifying that an insurance policy has been contracted in its name with a top-ranking international insurance company for covering its liability as PROVIDER for any and all action which might be taken to obtain compensation for prejudice caused by a manufacturing defect affecting the PRODUCT used pursuant to the CONTRACT.

#### **4. WARRANTIES**

- 4.1 The PROVIDER represents and warrants that it has full power and authority to enter into and fully perform its obligations under the CONTRACT and the provisions of the CONTRACT, when executed, will constitute valid and binding obligations on the PROVIDER in accordance with its terms. The PROVIDER also represents and warrants that it has full power and authority to enter into and fully perform its obligations under the SUPPLY AGREEMENTS when executed.
- 4.2 The FIA represents and warrants that it has full power and authority to enter into and fully perform its obligations under the CONTRACT and the provisions of the CONTRACT, when executed, will constitute valid and binding obligations on the FIA in accordance with its terms.

#### **5. TERMINATION**

- 5.1 Notwithstanding any other provision hereof, either party may terminate the CONTRACT with immediate effect by written notice to the other if any of the following events occur:
- (a) the other party has committed a material breach of the CONTRACT which is not capable of remedy or, if remediable, has not remedied it within 14 days of the non-breaching party's written notice requiring the default to be remedied (for the avoidance of doubt, a breach by the PROVIDER of any of GENERAL CONDITIONS 1.2, 1.3, 2, 3 and 4.1 and any of the SPECIAL CONDITIONS is acknowledged by the parties to be a material breach);
  - (b) steps (including any steps analogous to those following) have been taken to wind up the other party or to place the other party into administration or to have a receiver appointed over any of its assets, other than as part of a scheme of solvent reconstruction or amalgamation; or
  - (c) the other party shall cease or threaten to cease carrying on business or the other party shall make any composition or arrangement with its creditors or become subject to any other insolvency process or proceeding (other than as part of a scheme of solvent reconstruction or amalgamation) or have all or any of its assets or undertakings seized by a government or governmental agency or authority (including any acts analogous to the above).

#### **6. GOVERNING RULES**

- 6.1 The GOVERNING RULES constitute the legal, administrative and technical framework of the CHAMPIONSHIP and the conditions set forth therein shall have binding force and prevail among the parties to the CONTRACT.
- 6.2 The CONTRACT shall in principle be interpreted in a manner that gives effect to the provisions of the GOVERNING RULES, the intention of the parties being to construe the provisions of the CONTRACT in the context of the more general framework of the GOVERNING RULES.
- 6.3 The PROVIDER acknowledges that the TECHNICAL SPECIFICATIONS and GOVERNING RULES are subject to amendment from time to time. The PROVIDER will be responsible (at its own cost) for all research and development associated with the manufacture of the PRODUCT, including the making of any changes to the PRODUCT to be supplied

pursuant to the CONTRACT that may be necessitated by any amendment to the TECHNICAL SPECIFICATIONS or the GOVERNING RULES.

- 6.4 The PROVIDER acknowledges that the FIA may take decisions regarding the supply of the PRODUCT, this CONTRACT and any obligations accruing from the GOVERNING RULES through whatever structure it deems appropriate, including through its disciplinary structures. The PROVIDER shall not challenge the competence of an FIA disciplinary body acting in accordance with the GOVERNING RULES.

## **7. GOVERNING LAW AND LANGUAGE**

- 7.1 The language that shall prevail for the interpretation of the CONTRACT shall be English and the CONTRACT and all documents connected with the CONTRACT shall be written in English. In the event of any conflict between the language of the CONTRACT and any translation thereof, the language of the CONTRACT shall prevail. In the event of any conflict between the language of any document connected with the CONTRACT and any translation thereof, the language of the document connected with the CONTRACT shall prevail.

- 7.2 The governing law of the CONTRACT shall be French law.

- 7.3 The Tribunal de Grande Instance de Paris, France, shall have sole jurisdiction to settle any dispute that may arise between the FIA and the PROVIDER in connection with the CONTRACT, subject at all times to the provisions of GENERAL CONDITION 6.4.

- 7.4 Without any prejudice to GENERAL CONDITION 7.3 above, the PROVIDER undertakes to strictly respect the Statutes and Code of Ethics of the FIA as well as the GOVERNING RULES. The PROVIDER hereby agrees to be subject to the internal judicial and disciplinary bodies of the FIA.

## **8. GENERAL**

- 8.1 Nothing in the CONTRACT guarantees or shall be construed as guaranteeing, the solvency of a CAR MANUFACTURER. The FIA is not responsible for ensuring that the CAR MANUFACTURERS satisfy the terms of the SUPPLY AGREEMENTS and the FIA shall not be liable for a failure by any CAR MANUFACTURER to satisfy the terms of a SUPPLY AGREEMENT.

- 8.2 No delay or omission or failure to exercise any right or remedy provided herein shall be deemed to be a waiver thereof.

- 8.3 The CONTRACT shall be binding on and enure to the benefit of the parties and their respective successors and permitted assigns. The PROVIDER shall not be entitled to assign or sub-contract its rights or obligations under the CONTRACT in whole or in part without the prior written consent of the FIA. In case of sub-contracting, the PROVIDER remains fully liable for the performance of any part of this Contract and any damages caused by its sub-contractors.



- 8.4 Any public communications or press releases by the PROVIDER related to the CONTRACT shall be discussed in advance and approved in writing by the FIA.
- 8.5 Any notice to be given under the CONTRACT shall be given in writing delivered to the other party by any one or more of the following methods:
- (a) personal delivery to one of its corporate officers, in which case notice shall be treated as having been given at the time of such personal delivery;
  - (b) first class registered post or courier delivery service (such as DHL or UPS) to the address mentioned above (or such other address as may be notified to the other party in writing from time to time), in which case notice shall be treated as having been given on the date of actual receipt at that address (or on the next local business day if delivered on a local non-business day or after 4.00 p.m. local time on a local business day), which shall rebuttably be presumed to be the second local business day after posting.
- 8.6 Any variations of the CONTRACT shall be ineffective unless agreed in writing and signed by the parties.
- 8.7 If any term, provision or condition of the CONTRACT is held by a court of competent jurisdiction to be invalid, void or unenforceable, such invalidity, voidness or unenforceability shall not invalidate the remainder of the CONTRACT, all of which shall remain in full force and effect.
- 8.8 The CONTRACT may be executed in any number of counterparts (whether original or facsimile counterparts) and upon due execution of all such counterparts by all parties, each counterpart shall be deemed to be an original hereof.
- 8.9 GENERAL CONDITIONS 3, 4, 7 and 8 shall survive expiry or termination of the CONTRACT for any reason (but shall terminate at the time expressly provided in the relevant GENERAL CONDITION, if any).

## **PART 2 - SPECIAL CONDITIONS**

### **1. SUPPLY OF THE PRODUCT**

- 1.1 The PROVIDER shall provide to the CAR MANUFACTURERS the PRODUCT and associated services and spare parts in such quantities and in accordance with the standard lead times and other conditions as set out in this CONTRACT, the TECHNICAL SPECIFICATIONS and the SUPPLY AGREEMENTS.
- 1.2 In addition, the PROVIDER shall supply a PRODUCT that is capable of being used to ensure that the cars comply with testing requirements.
- 1.3 The FIA does not guarantee the PROVIDER a minimum quantity of the PRODUCT to be supplied.
- 1.4 The SUPPLY AGREEMENT may provide that each CAR MANUFACTURER shall be responsible for the care and maintenance of the PRODUCT and for transportation of them to each COMPETITION.
- 1.5 The PROVIDER shall deliver on track support to any OFFICIAL TESTING and COMPETITION, and on specific demand by the FIA for other events.
- 1.6 The PRODUCT supplied by the PROVIDER shall be of a strictly uniform quality throughout the duration of the CHAMPIONSHIP and comply with the TECHNICAL SPECIFICATIONS.
- 1.7 The PROVIDER undertakes to report to the FIA any issues with the PRODUCT, the CAR MANUFACTURER concerned and the results of any associated investigations.

### **2. PRODUCTION DATES AND DELIVERY OF THE PRODUCT**

- 2.1 The hardware and software design specifications of the PRODUCT shall be approved by the FIA in writing by [•] October 2020 at the latest, after which date no further modifications or alterations to the PRODUCT's specifications shall be permitted without the express written previous consent of the FIA.
- 2.2 The PROVIDER shall make first crash test sessions complying with all FIA safety requirements by [•] August 2021 at the latest.
- 2.3 The PROVIDER shall make available one full PRODUCT package to each CAR MANUFACTURER by [•] January 2022 at the latest.
- 2.4 The PROVIDER shall make available race cars full PRODUCT package to all CAR MANUFACTURERS by [•] August 2022 at the latest.
- 2.5 The PROVIDER shall make available to each CAR MANUFACTURER all VALUABLE TECHNICAL DATA according to the schedule proposed in the TECHNICAL SPECIFICATIONS and as specified in the SUPPLY AGREEMENTS.
- 2.6 The PROVIDER shall deliver to each CAR MANUFACTURER all necessary technical support, personnel and equipment to assist with usage of the PRODUCT during the first deliveries of the PRODUCT to the CAR MANUFACTURERS, and during any OFFICIAL TESTING and COMPETITION (see TECHNICAL SPECIFICATIONS).

- 2.7 To facilitate OFFICIAL TESTING by CAR MANUFACTURERS, if requested by the FIA, the PROVIDER will be present at its own expense at OFFICIAL TESTING with all necessary spare parts, personnel and equipment to fit and service the PRODUCT.

### **3. TECHNICAL CONDITIONS**

- 3.1 The PROVIDER shall ensure that the PRODUCT to be supplied is at all times in conformity with the TECHNICAL SPECIFICATIONS, the SPORTING REGULATIONS and the TECHNICAL REGULATIONS
- 3.2 The PRODUCT must be adaptable to different types of front and rear powertrain motors. The cost of all necessary adjustments to adapt the PRODUCT to the rear powertrain will be at the expense of the CAR MANUFACTURER concerned.

### **4. PROJECT SUPERVISION**

- 4.1 The PROVIDER shall make such modifications to the PRODUCT to be supplied pursuant to the CONTRACT as the FIA ENGINEER may require.
- 4.2 The PROVIDER shall bear all reasonable costs of development of the PRODUCT incurred by the FIA ENGINEER and his support staff.

### **5. PRICING OF THE PRODUCT**

- 5.1 The price of the PRODUCT as well as all the parts and services included in the perimeter of this CONTRACT (in euros) supplied pursuant to the CONTRACT shall be as detailed on the PRICING FORM (Appendix I), which amount shall be inclusive of all taxes and charges and which amount shall not be increased for any reason, except in accordance with SPECIAL CONDITION 5.3.
- 5.2 VAT (value added tax) shall not be charged to those CAR MANUFACTURERS that are exempt from VAT and that have supplied proof of such exemption to the PROVIDER.
- 5.3 The price stated in SPECIAL CONDITION 5.1 may be adjusted for the seasons 10 (2023-2024) and 11 (2024-2025) of the CHAMPIONSHIP in accordance with the indexation formula provided in Appendix II.

### **6. MANUFACTURING CONDITIONS OF THE PRODUCT**

- 6.1 Before starting the manufacturing of the PRODUCT to be supplied pursuant to the CONTRACT, the PROVIDER shall provide to the FIA a detailed technical study for the approval of the FIA ENGINEER. In the event that an amendment is made to the TECHNICAL SPECIFICATIONS or the TECHNICAL REGULATIONS that requires an amendment to the PRODUCT supplied pursuant to the CONTRACT, the PROVIDER shall provide to the FIA a detailed technical study of the amended PRODUCT to be supplied pursuant to the CONTRACT to take account of such amendment.
- 6.2 The PROVIDER shall make such modifications to the PRODUCT to be supplied pursuant to the CONTRACT as the FIA ENGINEER may require.
- 6.3 The PROVIDER shall not make any change to the PRODUCT during the CONTRACT without the express prior written agreement from the FIA.

6.4 Technical checks will take place to verify whether the PRODUCT used during OFFICIAL TESTING and COMPETITION is in conformity with the TECHNICAL REGULATIONS and the TECHNICAL SPECIFICATIONS. The PROVIDER undertakes to provide the necessary equipment and carry out the technical analysis on site under the authority of the FIA ENGINEER.

6.5 The PROVIDER shall supply the conformity reports to the FIA within the deadline set by the FIA.

## **7. INTELLECTUAL PROPERTY**

7.1 The FIA remains at all times the owner of the intellectual property rights contained in the TECHNICAL SPECIFICATIONS.

7.2 The PROVIDER shall supply the FIA with the requested VALUABLE TECHNICAL DATA (in form of documentation, software, specifications, etc.) that the FIA deems appropriate (including but not limited to data mentioned in the TECHNICAL SPECIFICATIONS). This includes the right for the FIA to access any logging data during bench, track testing and the COMPETITIONS.

7.3 Save for the purposes of providing the PRODUCT under this CONTRACT, the PROVIDER agrees and acknowledges that no data relating to a COMPETITION may be reproduced, stored in a retrieval system or transmitted in any form or by any means electronic, mechanical, photocopying, recording, broadcasting means or otherwise to any other party than the FIA without the FIA's express prior written approval.

7.4 The PROVIDER warrants that the PRODUCT does not infringe any third party's registered or non-registered foreign or domestic intellectual property rights, such as patent, design, trade mark, service mark, copyright, right of confidence or know-how.

7.5 The PROVIDER shall indemnify and hold the FIA harmless for and against any claims, demands, costs and damages (including reasonable attorney fees) relating to the infringement of any third party's intellectual property rights by the PRODUCT.

## **8. COMMERCIAL RIGHTS**

*[Content of the clause depending on the proposal made by the PROVIDER in its bid and on the selection decision].*

### **PART 3 - DEFINITIONS**

The following terms shall be understood to have the following meanings for the purposes of the "CONTRACT".

- 1.1 **CHAMPIONSHIP** means the seasons 9 (2022-2023), 10 (2023-2024) and 11 (2024-2025) of the FIA Formula E World Championship.
- 1.2 **COMPETITOR(S)** means the teams that have been accepted to take part in the CHAMPIONSHIP.
- 1.3 **CAR MANUFACTURER(S)** means the car suppliers registered by the FIA to supply the homologated cars in the CHAMPIONSHIP.
- 1.4 **CONTRACT** means the GENERAL CONDITIONS, the SPECIAL CONDITIONS and the DEFINITIONS.
- 1.5 **DEFINITIONS** means the definitions set out in this Part 3 of the CONTRACT.
- 1.6 **COMPETITION(S)** means any race forming part of the CHAMPIONSHIP. A COMPETITION is deemed to commence at the scheduled time for scrutineering and administrative checks and includes all practice, qualifying and the race itself and ends at the expiry of the deadline for the lodging of a protest.
- 1.7 **CHASSIS SUPPLIER** means the exclusive chassis supplier designated by the FIA to supply the chassis in the CHAMPIONSHIP.
- 1.8 **FIA** means the Fédération Internationale de l'Automobile (FIA).
- 1.9 **FIA ENGINEER** shall mean the technician appointed by the FIA:
  - (a) to carry out all technical checks and controls;
  - (b) to grant any necessary approval in relation to the development and production of the PRODUCT.
- 1.10 **GENERAL CONDITIONS** means the provisions contained in Part 1 of the CONTRACT.
- 1.11 **GOVERNING RULES** means:
  - (a) the FIA International Sporting Code and the Appendices thereto;
  - (b) the FIA General Prescriptions applicable to all FIA Championships, Challenges, Trophies and Cups;
  - (c) the SPORTING REGULATIONS applicable to the CHAMPIONSHIP;
  - (d) the TECHNICAL REGULATIONS applicable to the CHAMPIONSHIP;
  - (e) the Code of Ethics of the FIA;
  - (f) the FIA Standards of Conduct for Suppliers (Appendix IV);
  - (g) the Judicial and Disciplinary Rules of the FIA;

- (h) any other regulations applicable to the CHAMPIONSHIP.
- 1.12 **OFFICIAL TESTING** means tests as defined in and authorised in the SPORTING REGULATIONS.
- 1.13 **PRICING FORM** means the pricing form provided in Appendix I, stating the prices at which the PRODUCT and all the parts and services included within the perimeter of this Contract will be supplied.
- 1.14 **PRINCIPLES OF SPORTING EQUALITY** means the equal treatment by the PROVIDER of all CAR MANUFACTURERS and COMPETITORS with respect to:
- anything which may affect the performance of the PRODUCT;
  - the terms on which the PRODUCT is supplied;
  - the support, access and information in relation to the PRODUCT; and
  - any other matter which affects or may have an effect, however minor, on sporting performance.
- 1.15 **PRODUCT** means the battery system as such term is described in the SPORTING REGULATIONS, the TECHNICAL REGULATIONS, the TECHNICAL SPECIFICATIONS and any other regulations applicable to the CHAMPIONSHIP.
- 1.16 **PROVIDER** means [•].
- 1.17 **PRODUCTION SITE** means the factory that will produce the PRODUCT supplied pursuant to the CONTRACT.
- 1.18 **SPECIAL CONDITIONS** means the provisions contained in Part 2 of the CONTRACT.
- 1.19 **SPORTING REGULATIONS** means the Sporting Regulations applicable to the CHAMPIONSHIPS, as published and amended by the FIA from time to time. The Sporting Regulations are available on the FIA website: [www.fia.com](http://www.fia.com).
- 1.20 **SUPPLY AGREEMENT** means any agreement, and all amendments thereto, between the PROVIDER and a CAR MANUFACTURER pursuant to which the PROVIDER shall supply the PRODUCT to the CAR MANUFACTURER.
- 1.21 **TECHNICAL REGULATIONS** means the Technical Regulations applicable to the CHAMPIONSHIP, as published and amended by the FIA from time to time. The Technical Regulations are available on the FIA website: [www.fia.com](http://www.fia.com).
- 1.22 **TECHNICAL SPECIFICATIONS** means the technical requirements applicable to the PRODUCT as provided in Appendix III.
- 1.23 **VALUABLE TECHNICAL DATA** means data associated with the characteristics of the performance of the PRODUCT.

Signed:

On behalf of the FIA:

On behalf of the PROVIDER:

In his/her capacity as:

In his/her capacity as:

In:

In:

On:

On:

## **APPENDICES**

I – PRICING FORM

II – INDEXATION FORMULA

III – TENDER SUMMARY AND TECHNICAL SPECIFICATIONS

III A – EXAMPLE OF TYPICAL ELECTRICAL LAYOUT OF THE BATTERY SYSTEM

III B – TECHNOLOGY READINESS LEVEL (TRL) MATRIX

IV – FIA STANDARDS OF CONDUCT FOR SUPPLIERS

V – QUESTIONNAIRE COMPLIANCE – DUE DILIGENCE

VI – DRAFT SUPPLY AGREEMENT (to be supplied by the PROVIDER)



**APPENDIX I**

**PRICING FORM**

<b>PRODUCT/SERVICE</b>	<b>PRICE IN EUROS WITHOUT VAT / EX- WORK</b>	<b>SERVICE PRICE IN EUROS WITHOUT VAT</b>	<b>SUPPLY LEAD TIME</b>

## **APPENDIX II**

### **INDEXATION FORMULA**

Concerning seasons 10 (2023-2024) and 11 (2024-2025) of the CHAMPIONSHIP, the prices charged to the CAR MANUFACTURERS shall be the amount that equals the amount shown for season 9 (2022-2023) in the PRICING FORM increased annually in accordance with the positive variation of the “Consumer Prices – All items” index published by the Organisation for Economic Cooperation and Development (OECD) in “Main Economic Indicators”. The indexation shall be in accordance with the variation between such base index and the index published in the October edition of “Main Economic Indicators” for the year to which the indexation applies and for the PROVIDER’s country.

## **APPENDIX III**

### **TENDER SUMMARY AND TECHNICAL SPECIFICATIONS**

#### **1. TENDER SUMMARY**

The FIA is launching an **Invitation to Tender (ITT)** to select an exclusive supplier of a **battery system** whose task it will be to deliver a battery energy storage system for the FIA Formula E World Championship. The car will debut in the 2022/23 FIA Formula E World Championship and will be used for a three-season cycle (2022/23, 2023/24 and 2024/25).

The aim of this ITT is to elevate the current car's battery technology through improved energy density, life cycle, power capability and durability. Special consideration is given to the effective management of the battery systems, to ensure safe and reliable operation until the end of life. Reliability and safety should be carefully taken into consideration, and a detailed analysis should be carried out to quantify the risks of battery defects under the specified conditions of use. The result should be the enhancement of all aspects of the current car concept, from weight reduction to overall regeneration efficiency and increased performance. Additionally, in order to keep positioning the Formula E World Championship as the laboratory of cutting-edge technologies for electric cars, the capabilities of "fast" charging will be addressed within the framework of the race.

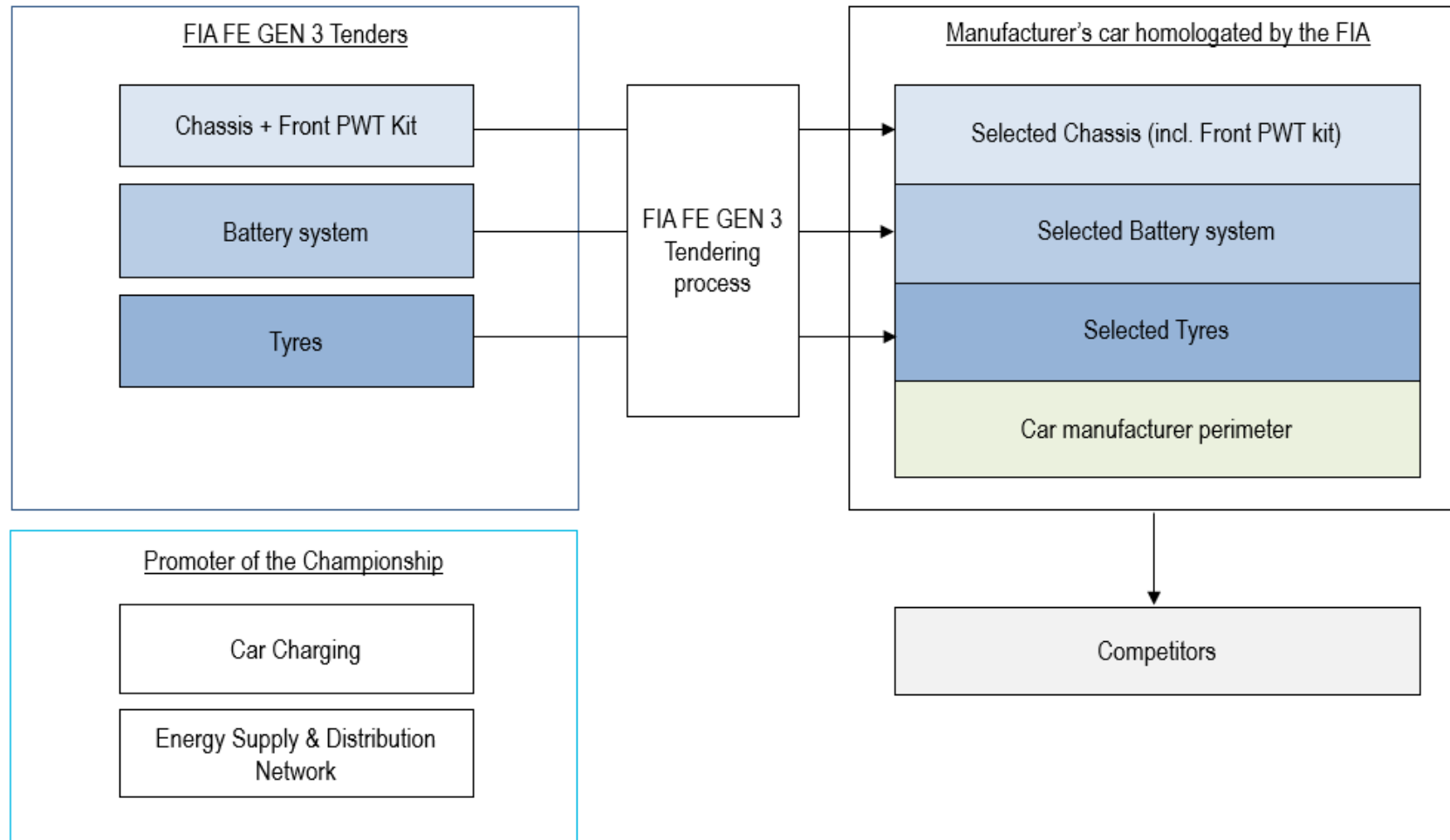
In light of the above, the FIA will launch other ITTs in parallel, in particular an **Invitation to Tender (ITT)** to select an exclusive supplier of a **chassis** (including the **front powertrain kit**) and an **Invitation to Tender** to select an exclusive **tyres supplier**. On the other hand, the **Promoter of the Championship** will be responsible for the provision of the **car charging system**, including the **energy supply**, the **distribution network** and the **charging equipment**. The battery forming the core of the vehicle, it is the duty of the selected tenderer to work together with the chassis provider, as well as the charging and infrastructure providers from the early stages, under constant supervision of the FIA, to support specific system design and integration needs.

The commercial proposal shall follow the cost caps required by this ITT, including all the development costs. No NRE (Non-recurring-engineering) payment shall be paid by the car manufacturers. The tenderer will have to deliver to car manufacturers all the parts included in this tender inside the defined cost cap.

The battery system proposed by the tenderer will have to comply with the FIA FE Technical Regulations and the technical specifications included in this tender document. Some flexibility will be allowed in order to achieve the weight and performance targets, at the discretion of the FIA Technical Department. However, any proposal that is in contradiction with any of the safety requirements will not be accepted.

Please contact the FIA Technical Department for requesting a copy of all the relevant documents mentioned throughout this ITT at [fia\\_fetechnical@fia.com](mailto:fia_fetechnical@fia.com).

### 1.1. TENDER STRUCTURE



## **2. CURRENT FE SEASON 6 CAR GENERAL INFORMATION**

The tenderer shall consult the FIA FE 2019-2020 Technical Regulations and the FIA FE 2019-2020 Sporting Regulations in the FIA website ([www.fia.com](http://www.fia.com)) for detailed information regarding the current car and applicable regulations.

## **3. HOW TO FILE TECHNICAL DOCUMENTATION IN THE TENDER**

Tenderers are expected to file the requested information throughout the document according to the following principles:

- “Compliance”: Express clearly the level of compliance of the tendered system towards each set of requirements.
- “Evidence”: Provide evidence to justify the stated level of compliance.
- “Additional Notes”: Include any additional valuable information that may help to support or clarify the tender.

The FIA will evaluate offers even if not meeting all requirements.

Potential suppliers are encouraged to provide any additional information regarding the product, the associated production and development processes and the related services that may assist the FIA’s evaluation of the tender.

## **4. TENDER PERIMETER**

The following list describes all the parts/services included in the perimeter of design responsibility for this tender:

- Battery system, including structural housing and all connecting interfaces (HV, LV, cooling, etc.)
- Battery Management System (BMS), including fuses, contactors and FIA sensors
- DC/DC converter unit
- Cooling pump unit (incl. dielectric fluid)
- Battery transportation casing
- Thermal pre-conditioning unit (to be agreed with the charging system provider)
- Discharge conditioning unit (to be agreed with the charging system and infrastructure providers)
- Pit equipment (trolley, etc.)
- Supply management of the complete battery and the associated spare parts
- Support plan and valuable data delivery

## 5. CAR CONCEPT AND GENERAL CHARACTERISTICS

			COMPLIANCE	EVIDENCE	NOTES
a.	Concept:	The car will be a rear-wheel drive electric car, with 2 e-powertrains. The rear e-powertrain is part of the car manufacturers' perimeter and is intended to operate as a motor-generator, thus transforming the electrical power in mechanical power and vice-versa. The front e-powertrain is common to all cars (delivered as part of the chassis tender perimeter) and operates as generator only, to transform mechanical power into electrical power.			
b.	Target car weight (incl. driver):	780 kg			
c.	Indicative weight balance front (w/out driver):	40 %			
d.	Maximum car width:	1700 mm			
e.	Maximum car length:	5000 mm			
f.	Maximum car height:	1250 mm			

## 6. MAIN SYSTEM REQUIREMENTS AND CONDITIONS OF USE

			COMPLIANCE	EVIDENCE	NOTES
a.	Maximum voltage (at any time):	1000 V			
b.	Minimum voltage (at any time):	450 V			

c.	Battery life (it requires the initial battery usable energy w/out any power derating):	1 season (including official test days, race events)			
d.	Indicative season time:	8 months (TBC by the FIA, in line with project timeline)			
e.	Season mileage:	6000 km			
f.	Nr of Charge/Discharge cycles:	160 cycles			
g.	Nr of Fast Charging cycles:	72 cycles			
h.	Ambient temperature:	5°C to 38°C			
i.	Relative Humidity (%RH):	up to 98%			
j.	Ambient pressure:	from 760mb to 1050mb			

#### 6.1. CHAMPIONSHIP AND TESTING INFORMATION

			COMPLIANCE	EVIDENCE	NOTES
a.	Official test days per season:	6 days			
b.	Races per season:	Up to 18			

#### 7. PERFORMANCE TARGETS

All performance targets outlined below describe the performance in quantitative terms through specific criteria. Those targets are to be achieved until the end of life of the battery system. At the same time, the reliability of all the battery system and all the parts delivered as part of this tender shall be guaranteed for the specified time and conditions of use. In this regard, the system shall be to withstand high levels of vibrations and shocks, which are specific of the intended championship within urban environments.

## 7.1. POWER SCENARIOS

Two (2) technical scenarios with different power targets are proposed, both of which having the same funding criteria. The tenderer may submit multiple proposals for either scenarios, inside the same weight targets and cost cap envelope.

		<b>SCENARIO A</b>	<b>SCENARIO B</b>	<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Max. Power release Race:	300 kW	250 kW			
b.	Max. Power release Qualy:	350 kW	300 kW			
c.	Max. Power Fan Boost:	350 kW	300 kW			
d.	Max. Power Attack Mode:	350 kW	300 kW			
e.	Max. Power Regen (Rear):	350 kW	250 kW			
f.	Max. Power Regen (Front):	250 kW	200 kW			
g.	Battery useable energy ((Integration of the discharge power) – (0.8*Integration of the regen power) – (added “net” usable energy with “fast” charging)) and w/out the 1.4 kW constant power dedicated to DC/DC, <b>incl. the extra-energy arising from the removal of the rear hydraulic brakes according to Art. 7.1.i) of this tender (the FIA’s assumption of 6 kWh was included in the given figures).</b>	51 kWh	49 kWh			
h.	“Standard” Charging Power (TBC with charger and infrastructure provider):	Min. 80 kW	Min. 80 kW			



i.	“Fast” Charging Power:	600 kW	450 kW			
j.	“Fast” Charging Time:	30 seconds	30 seconds			
k.	Added “net” usable energy through Fast Charging:	4 kWh	3 kWh			
l.	Min. Power Regen (Rear) from the start of the race (due to hydraulic rear brake removal):	350 kW	250 kW			

### 7.2. TARGET WEIGHT AND VOLUME REQUIREMENTS

			COMPLIANCE	EVIDENCE	NOTES
a.	Target cell weight:	184 kg			
b.	Target battery pack weight (including the cells, the supporting structure, housing, and all the internal/external components defined as part of this tender perimeter):	284 kg			
c.	Target battery pack volume:	220 L			

### 7.3. THERMAL REQUIREMENTS

			COMPLIANCE	EVIDENCE	NOTES
a.	Battery thermal pre-conditioning:	The battery system may be pre-conditioned using off-board equipment. The tenderer shall provide the equipment and inform about the			

		pre-conditioning procedure. The thermal pre-conditioning equipment may be provided as part of this tender according to Art. 14 of this tender document (TBC with the charging and infrastructure providers).			
b.	Battery temperature management during charging:	The battery system may be designed to be conditioned during each standard and fast charging sessions to avoid heat losses. The tenderer shall work in conjunction with the charging equipment provider to define the cooling demands and support with the definition of the charging equipment.			
c.	Battery temperature management during race:	The battery system may be designed to operate at its optimum temperature, to maximize the power extraction in race conditions. The tenderer shall work in conjunction with chassis provider to define the cooling requirements from the early stages of the project definition.			

#### 7.4. REFERENCE SEASON DUTY-CYCLE

Reference qualifying and race duty cycles are made available upon request by the FIA Technical Department. Based on the provided reference duty-cycles, the battery system shall be capable to meet the requirements of this document throughout the complete season duty cycle.

The season duty cycle will consist of up to 6 official test days and 18 races, according to the information provided below and the reference timetables given in Art. 7.4.3 of this tender document.

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Race cycle (including SD, FP1,	Race laps + Qualy laps + Attack Mode laps +			

	FP2, Q, SP, R):	“Standard” Charging sessions + “Fast” Charging sessions, according to Art. 7.4.3.1 of this tender document.			
b.	Official test day cycle:	Race laps + Qualy laps + Attack Mode laps + “Standard” Charging sessions + “Fast” Charging sessions, according to Art. 7.4.3.2 of this tender document.			

#### 7.4.1. STANDARD CHARGING SESSIONS

The battery shall be capable of being charged from 0% SOC to 100% SOC using an off-board charger, at a power of minimum 80 kW (TBC with the charger and infrastructure provider). Charging sessions will be performed in-between sessions according to the time requirements specified in Art. 7.4.3 of this tender document.

#### 7.4.2. FAST CHARGING SESSIONS

The battery shall be capable of being “fast” charged using an off-board charger at the power requirements of either scenario A or B stated in Art. 7.1 of this tender document, as driven by the battery specifications. Fast charging sessions will be performed within 30 seconds and one time during the race, to increase the battery usable capacity by a certain amount [kWh] according to the Art. 7.1 j) of this tender document.

#### 7.4.3. REFERENCE TIMETABLES

Typical timetables for official test days and race events are provided for reference in Art. 7.4.3.1 and Art. 7.4.3.2 of this tender document. A reference timetable for private test day is made available by the FIA Technical Department upon request.

##### 7.4.3.1. REFERENCE OFFICIAL TEST DAY TIMETABLE

	TIME OF DAY			EVENT TYPE	REFERENCE LAP(S)		
	Start	End	Length	Activity	Race	Qualy	Attack Mode
	09:00	10:00	01:00:00	TEST SESSION 1-1	21	2	2
% Battery Usable Energy	100	≈0					

Standard Charging (up to min 80 kW)	-	-	00:45:00				
	11:00	12:00	01:00:00	TEST SESSION 1-2	21	2	2
Fast Charging	≈11:30	-	00:00:30	FAST CHARGING			
% Battery Usable Energy	100	≈0					
Standard Charging (up to min 80 kW)	-	-	00:45:00				
	14:00	15:00	01:00:00	TEST SESSION 2-1	21	2	2
Fast Charging	≈14:30	-	00:00:30	FAST CHARGING			
% Battery Usable Energy	100	≈0					
Standard Charging (up to min 80 kW)	-	-	00:45:00				
	16:00	17:00	01:00:00	TEST SESSION 2-2	21	2	2
Fast Charging	≈16:30	-	00:00:30	FAST CHARGING			
% Battery Usable Energy	100	≈0					

#### 7.4.3.2. REFERENCE RACE EVENT TIMETABLE (i.e. SANYA e-PRIX)

a) FRIDAY TIMETABLE:

	TIME OF DAY			EVENT TYPE	REFERENCE LAP(S)		
	Start	End	Length	Activity	Race	Qualy	Attack Mode
	15:30	15:45	00:15:00	SHAKEDOWN	3	0	0
% Battery Usable Energy	100	≈70					
Charging time	-	-	Unlimited				

b) SATURDAY TIMETABLE:

	TIME OF DAY			EVENT TYPE	REFERENCE LAP(S)		
	Start	End	Length	Activity	Race	Qualy	Attack Mode
	07:30	08:15	00:45:00	FREE PRACTICE 1	25	2	1
Fast Charging	≈08:00	-	00:00:30	FAST CHARGING			

% Battery Usable Energy	100	≈0					
Standard Charging (up to min 80 kW)	-	-	01:20:00				
	09:35	10:05	00:30:00	FREE PRACTICE 2	16	2	1
% Battery Usable Energy	100	≈15					
Standard Charging (up to min 80 kW)	-	-	00:40:00				
	11:15	-		Pre-qualy Parc Fermé			
	11:20	11:56	00:24:00	QUALIFYING	2	2	0
	12:05	12:25	00:20:00	SUPER POLE (Top 6)	2	1	0
% Battery Usable Energy	100	≈40					
Standard Charging (up to min 80 kW)	-	-	01:45:00				
	14:23	14:33	00:10:00	Pit lane open/close			
	15:04	-	00:45:00	RACE (45 min + 1lap)	32	0	8
Fast Charging	≈15:30	-	00:00:30	FAST CHARGING			
		-		Parc Fermé			

## 7.5. VALIDATION TESTING

The tenderer is required to provide evidence of validation testing of the proposed battery system, according to the season duty cycle requirements outlined above. In particular, in order to define the overhead battery capacity required to achieve the performance targets, the tenderer must provide at least the following:

- Calendar ageing
- Power cycling ageing expressed as battery capacity reduction until the end of life.
- Battery round trip efficiency (Discharge / Charge Energy (Wh)) as function of State-of-Charge (SOC) at different discharge rates (1C, 5C, 10C) and charge rates (1C, 5C, 10C, 15C), temperatures and State-of-Health (SOH).
- Equivalent DC resistance as function of State-of-Charge (SOC) at different discharge rates (1C, 5C, 10C) and charge rates (1C, 5C, 10C, 15C), temperatures and State-of-Health (SOH).

### 7.5.1. END-OF-LINE TESTING

The battery systems supplied as part of tender shall be built using cells having matched capacities. In order to minimize the mismatch, the cells within the batteries shall be selected from one production batch and/or have close to identical capacities. The tenderer shall provide evidence of range of dispersion of cells capacity < 3% (in reference to the minimum specified cell capacity). Additionally, the tenderer shall provide full details about the end-of-line testing to which all production battery systems shall be subjected to prior to delivery, to demonstrate the quality and production control at module-level and/or battery-level.

**8. MECHANICAL REQUIREMENTS OF THE BATTERY SYSTEM (ACCORDING TO ART. 253 APPENDIX J TO THE FIA ISC)**

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Concept:	The battery system should be merged with the survival cell to form a unique safety cell. Therefore, the tenderer shall work in close collaboration with the chassis provider from the concept design stage, in order to allow for the best module arrangements and integration of the battery system within the car structure.			
b.	Battery housing functionalities:	The battery housing shall meet the following requirements as a minimum: <ul style="list-style-type: none"> <li>— Mechanical protection</li> <li>— IP55 protection level against dust and water from any direction as a minimum (according to ISO 20653).</li> <li>— Electric protection (incl. equipotential bonding, isolation level)</li> <li>— Fire-retardant (UL94 V0 certification)</li> </ul>			
c.	Battery housing structural requirements:	The structure (i.e. baseplate) to which the battery pack is fixed shall be structural. The battery housing structure shall be defined in conjunction between the tenderer, the battery system provider and the charging equipment provider, under the supervision of the FIA. The battery system, including all internal and external components, must pass the tests required in the <u>“Season 9 Formula E Draft Crash Specifications - V2.0.pdf”</u> .			

d.	Battery pack environmental requirements:	The battery system shall exhibit no degradation in performance when exposed to extreme environmental conditions, such as high shock and vibrations, while the car is in motion. Reference vibration profile will be made available by the FIA Technical Department upon request.			
e.	Battery pack replacement:	The battery shall be replaceable in the car by the trackside support team within 45 minutes (pit in/out time). To achieve the replacement within the given time, the battery tenderer shall work towards upgrading the equipment required for performing this operation (i.e. trolley, etc.) to allow for ease of replacement.			
f.	Cooling system:	<p>Cell cooling is important to ensure the life and safe operation of the battery during the expected conditions of use. Any kind of cooling system may be proposed. If a liquid cooling system is used, it is mandatory to use a dielectric fluid without water. The tenderer shall specify the type of dielectric fluid to be supplied as part of this tender.</p> <p>The specifications shall be according to applicable normatives and adapted to motorsport use. The tenderer shall supply the cooling pump as part of the perimeter of this tender, whereas the rest of the cooling system will be designed by the chassis provider. The tenderer shall work in conjunction with the chassis provider to support the definition of the cooling system</p>			

		(including but not limited to sharing valuable information from the design concept phase), under the supervision of the FIA.			
g.	HV DC link connectors:	Snatch-free type connectors, with HVIL wire included, shall be used for every connection, including for the rear and front e-powertrains. Each connector shall accept at least 500 disconnections/connections, be minimum IP55 connected and IP2X disconnected.			
h.	HV connector(s) for “Standard” and “Fast” charging:	The connector(s) specifications shall be defined in conjunction between the tenderer and the charger system provider, according to Art. 13 of this tender document. The charging port must have specific fuse and contactors on both poles.			
i.	FIA HV sensors:	The mandatory FIA HV sensors shall be fitted within the battery pack, one for each e-motor. The sensors must be fitted such that they are replaceable by the trackside support team in case of failure. Each sensor shall be linked via CAN to the FIA logger.			
j.	Fuses:	Fuse must protect the battery in case of short circuiting on one of the DC buses. The tenderer is responsible of computing the maximum and minimum $I_{cc}$ and select the fuses that guarantee the safe isolation of the battery after a short circuit. The fuses must be fitted such that they are replaceable by the trackside support team in case of failure.			



k.	Flooding system:	Depending on the selected cell chemistry, the battery shall incorporate a system to enable the battery to be flooded from outside the car in case of internal fire (dry coupling such as STAUBLI N00916298 Male Dash 12). This system shall allow water to circulate through the cells, covering all the cells with the injected water. Waste water shall exit through the bottom of the battery. The tenderer may propose different ways to achieve this functionality. The battery housing shall be capable of withstanding the pressure generated by the flooding system.			
l.	Example of a typical electrical layout:	A typical electrical layout of a battery system is provided in the Appendix III-A of this tender document for reference. The tenderer may propose different layouts as part of this tender.			

## 9. SAFETY

			COMPLIANCE	EVIDENCE	NOTES
a.	Concept:	The battery system design shall prevent any hazards that can result in an unsafe failure mode, and mitigate the risks associated with events of force majeure, such as crashes or exposure to extreme environment.			
b.	Over-pressure control:	The battery shall incorporate a system to act in the event of over-pressure.			

		<p>If cells generate excessive pressure inside the battery housing, this system shall release the over pressure outside the battery.</p> <p>An unobstructed escape path at the bottom of the battery housing shall be provided, with appropriate mechanical protection.</p>			
c.	Thermal runaway:	<p>In the case of thermal runaway, the battery shall disconnect from the power circuit automatically and it must be ensured that fire cannot spread from the ignited cell and that gases are released in a controlled manner through the over-pressure control system.</p>			
d.	Short-circuiting:	<p>The battery shall be designed to prevent short circuiting of the battery poles and of the conductive parts.</p>			
e.	Emergency line:	<p>Depending on the selected cell chemistry, the battery housing shall incorporate an emergency line (i.e. extinguisher nozzle) in case of internal fire.</p>			
f.	General electrical safety:	<p>The battery system shall be designed according to the specifications given in Appendix J Art. 253, as well as the 2022/23 FIA FE Draft Technical Regulations.</p>			
g.	FMEA:	<p>A FMEA shall be completed by the tenderer as part of the design process, in order to demonstrate that hazards linked to the battery system operations have been addressed adequately and mitigation strategies defined. The tenderer is to work closely with the</p>			

		charging and infrastructure providers to identify any risks linked to the charging equipment design and procedures.			
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## 10. DC/DC CONVERTER UNIT

			COMPLIANCE	EVIDENCE	NOTES
a.	Concept:	The provider needs to supply a DC/DC converter to supply 12V/48V to all car ancillaries. The DCDC converter can either be fitted inside or outside of the battery pack. In any case, it must be easily replaceable by the trackside support team. It shall be configurable in terms of safety thresholds (voltage, current, temperature). Additionally, high-speed voltage control shall be used to manage the current peaks (2ms).			
b.	Input HV range:	450 – 1000 V			
c.	Output LV range 1:	12 V			
d.	Output LV range 2:	48 V			
e.	Output Current 1, continuous (peak 500ms)	93 (110) A			
f.	Output Current 2, continuous (peak 500ms)	15 (19) A			
g.	Output voltage regulation (measured at output rail):	±0.3 V			

h.	Max. Power Output LV range 1:	1.1 kW			
i.	Max. Power Output LV range 1:	0.6 kW			
j.	HV connector:	IP2X unmated / HVIL pin			
k.	Additional Functionalities:	<ul style="list-style-type: none"> <li>— HV input independent of MGU HV power connection.</li> <li>— Low voltage outputs short-circuit, over-current and over-temperature protected.</li> <li>— High-voltage input peak current limitation.</li> <li>— Diagnostics (current, voltage) on all inputs and outputs.</li> </ul>			

#### 11. BATTERY MANAGEMENT SYSTEM (BMS)

			COMPLIANCE	EVIDENCE	NOTES
a.	Concept:	<p>The Battery Management System (BMS) shall be an integral part of the battery system and monitor the state of the battery by controlling all safety and performance aspects linked with the battery operation, either while the car is in motion and during any charging session (including standard and fast charging).</p> <p>To ensure accurate indication of the battery State-of-Health (SOH), the BMS shall monitor the cell temperatures and the voltage of each cell at a sampling rate below 1s. It shall be capable of cell balancing of the pack when the car is stationary.</p>			

b.	Thermal management:	In order to guarantee fairness between competitors, the BMS shall include a thermal model, which makes all batteries behave the same way to the same stimuli. The thermal model of the battery shall be made available by the tenderer to the competitors and the FIA, according to Art. 20 of this tender document.			
c.	CAN lines:	At least 2 CAN lines (1Mbits) shall be provided in order to share data with the manufacturer's ECU and the FIA logger.			
d.	Data and diagnostic:	Measurements on cell voltages and temperatures as well as detailed diagnostics must be reported on CAN. The tenderer must specify the level of data monitoring as part of the tender, for review and approval by the FIA. For real-time monitoring during official race and test events, the tenderer must use the common telemetry system as provided by the FIA datalogger supplier. Therefore, the tenderer undertakes to liaise with the FIA datalogger supplier to set the conditions for this service.			
e.	Software and calibration / Upload FIA tool:	In order to guaranty fairness across all competitors, the tenderer must ensure that all BMS are running with the same software and calibration during an event. A tool to check the conformity of the BMS software and calibration versions shall be provided to the FIA.			

f.	Internal logging capacity / downloading tool:	The internal logger shall have sufficient capacity to retain the data history of at least 3 events. All data must be encrypted. A downloading tool must be made available to all competitors (without access credentials), in order to allow the competitors to send data to the provider for diagnosis purposes.			
g.	Insulation control:	The battery shall exhibit a system to monitor the insulation resistance both on the upstream and downstream side of the battery. In particular, a control impedance between HV poles and chassis (after main relay) shall be fitted inside the battery (i.e. Bender A-Isometer iso-F1). A second one (before main relay) shall be connected to the battery casing.			
h.	Main relays:	They shall cut both poles of the HV battery and be able to open at least 1 time under a full load case. The relay specifications should be matched with the fuse specs to ensure overlapping.			
i.	Secondary relays:	In order to prevent unsafe operation, there shall be at least 1 relay per HV output at the battery. The relay must be able to open under the full load at least thousands of times. The relay specifications should be matched with the fuse specs to ensure overlapping.			
j.	RESS lights:	RESS status lights (GREEN and RED lights) shall be controlled via the BMS, as specified			

		in the 2022/23 FIA FE Draft Technical Regulations. These lights shall remain switched on up to 15 minutes when 12 V supply is switched off. The relevant hardware kit will be provided by the chassis provider.			
k.	BMS sensors:	All sensors used by the BMS shall be properly fitted within the battery, while ensuring ease of access for maintenance (if trackside replaceable). All sensors are to be homologated by the FIA.			
l.	GPS chipset:	A GPS chipset shall be fitted within the BMS to provide information on the exact location and usage of the batteries.			
m.	Crash event detection:	A 3-axis accelerometer shall be fitted within the BMS to detect a crash event.			

## 12. TRANSPORTATION REQUIREMENTS

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Concept:	<p>The battery system shall be capable of being transported by road, sea, or air freight, in accordance with all the applicable regulations specific of the countries where official test and race events will be held.</p> <p>It is the responsibility of the tenderer to keep informed with any changes to those regulations, and to possibly adapt the product to the new requirements. The tenderer may propose a system that reduces the maximum</p>			

		potential voltage during transportation (module-level), for review and approval by the FIA.			
b.	UN Certification:	The battery system shall be appropriately certified to the UN 38.3 as a minimum. The UN 38.3 certification shall be forwarded to the FIA Technical Department by August 2022, in accordance with the timeline specified in Art. 25 of this tender document. Similarly, the battery transportation casing shall be appropriately certified to UN certification, to ensure the complete package will be in compliance with the applicable shipping regulations (to be agreed in conjunction with the Promoter of the championship, when appropriate).			

### 13. CHARGING INTERFACE REQUIREMENTS

			COMPLIANCE	EVIDENCE	NOTES
a.	Concept:	Bespoke charging equipment will be designed for the purpose of charging the cars at two different charging rates (for “standard” and “fast” charging). The charging system provider will be selected and contracted by the Promoter of the Championship, along with the infrastructure (energy supply and distribution network) provider. The tenderer shall work closely with both the charger and the infrastructure providers from the early			



		stages of the project, under supervision of the FIA, to provide the necessary technical support for the correct definition of the charging system, interface and equipment.			
b.	Charging equipment:	The charging equipment shall be robust and well adapted for outdoor use and trackside environment.			
c.	Charging power requirements:	Standard charging shall be performed at 80 kW (to be agreed with the charging and infrastructure providers). Fast charging shall be performed at either 450 kW or 600 kW, depending on the battery system specifications.			
d.	Charging times:	Charging times shall be in accordance with the reference season timetables defined in the Art. 7.4.3 of this tender document.			
e.	Max Output Voltage / Current	<ul style="list-style-type: none"> <li>— Max. Voltage shall not exceed 1000 V</li> <li>— Max. Current @600kW: 1300 Amps</li> <li>— Max. Current @450 kW: 1000 Amps</li> </ul>			
f.	Charging connector(s)	The charging connector(s) shall be designed in conjunction between the tenderer and the charging system provider, under supervision of the FIA.			
g.	Communication protocol	The charger shall communicate with the battery BMS during any charging session. The communication protocol shall be defined in conjunction between the tenderer and the			

		charging system provider, under supervision of the FIA.			
h.	Cooling interface	The cooling interface requirements shall be defined in conjunction between the tenderer and the charging system provider, under supervision of the FIA.			

#### 14. THERMAL CONDITIONING UNIT

			COMPLIANCE	EVIDENCE	NOTES
a.	Concept:	The tenderer may supply a thermal conditioning unit as part of this tender (to be agreed with the charging equipment provider), to control the temperature of the battery system. If delivered as part of the perimeter of this tender, it shall be developed and manufactured for use in a trackside environment.			
b.	Physical hardware requirements:	<ul style="list-style-type: none"> <li>— Target weight: 40 kg.</li> <li>— IP protection level: IP55 as a minimum.</li> </ul>			
c.	Safety:	A FMEA shall be completed by the tenderer as part of the design process.			
d.	Trackside spares and support:	Two (2) units per team should be provided, plus a sufficient number of spares as agreed within the scope of the spare parts management plan. Additionally, the tenderer should inform about the pre-conditioning procedure, and provide trackside support.			

## 15. DISCHARGE CONDITIONING UNIT

			COMPLIANCE	EVIDENCE	NOTES
a.	Concept:	The tenderer may supply a discharge conditioning unit (to be agreed with the charging equipment provider) to enable batteries to be discharged to an % SOC that is compatible with air freight regulations. If delivered as part of this tender, it should be developed and manufactured for use in a trackside environment. Alternatively, the discharge conditioning unit may be integrated into the thermal conditioning unit.			
b.	Physical hardware requirements:	<ul style="list-style-type: none"> <li>— Target weight: 30 kg.</li> <li>— IP protection level: IP 55 as a minimum.</li> </ul>			
c.	Safety:	A FMEA shall be completed by the tenderer as part of the design process.			
d.	Trackside spares and support:	Two (2) units should be provided to cover the demand of the whole grid, plus a sufficient number of spares as agreed within the scope of the spare parts management plan.			

## 16. BATTERY SYSTEM CRASH VALIDATION WHEN INTEGRATED INTO THE CAR

The battery system integrated into the car structure shall remain fully operational when exposed to the crashworthiness tests as required in “[Season 9 Formula E Draft Crash Specifications - V2.0.pdf](#)”. The FIA reserves the right to request that the battery system fulfils any additional tests depending on the proposed solution.

## 17. SUPPLY OF THE PRODUCT AND THE SPARE PARTS

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Concept:	The tenderer is to provide the batteries and the associated spare batteries according to the numbers defined in Art. 17.1 and 17.2. of this tender document.			
b.	Logistics associated with the supplying of the product / spare parts included in the perimeter of this tender:	The tenderer shall liaise with the Promoter of the Championship to have on-site paddock space allocation, pit equipment availability, accreditation and access to the Promoter's freight services necessary for supplying the product and the spare parts, as well as for providing associated services.			

### 17.1. PRODUCT SUPPLY FOR SEASON 9, 10 AND 11

	<b>YEAR / SEASON</b>	<b>TEST CAR</b>	<b>RACE CAR</b>	<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	2022 / -	Up to 12				
b.	2022 / Season 9	Based on 2022 test cars	Up to 24			
c.	2023 / Season 10	Based on S9 spares	Up to 24			
d.	2024 / Season 11	Based on S10 spares	Up to 24			

**17.2. SPARE BATTERIES**

	<b>YEAR / SEASON</b>	<b>MANUFACTURERS</b>	<b>PROVIDER</b>	<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	2022 / -	Minimum 4 spares	Minimum 2 spares			
b.	2022 / Season 9	Minimum 16 spares	Minimum 5 spares			
c.	2023 / Season 10	Based on S9 spares	Based on S9 spares			
d.	2024 / Season 11	Based. on S10 spares	Based on S10 spares			

**18. SPARE PARTS MANAGEMENT**

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Spare batteries:	Spare batteries shall be made available for use during private testing (manufacturers' tests and collective tests), official test and race events in the event of battery failures.			
b.	Serviceable spare components:	The following spare components shall be serviceable and made available to repair any damaged battery, including but not limited to: AUX fuses, RESS logger, sensors, temperature pre-conditioning unit, discharge conditioner unit, as well as any other serviceable item of the battery.			
c.	Spare safety equipment:	Spare safety equipment shall be made available by the tenderer in case of battery failures which request the battery to be inspected during official events.			

d.	Trackside support equipment:	The tenderer shall make provision of the pit equipment required to manage the spares on-track (incl. trolleys, etc.).			
e.	Update on spare parts “pool”:	A regular update shall be provided by the tenderer to all parties involved on the status of the spare parts “pool”.			

## 19. SUPPORT PLAN

The tenderer is to provide support related to the supplying of the product and spare parts during the introduction and validation process of the product, and subsequently during any official tests and race events, in accordance with the information provided below. A maximum of 100k € shall be charged to each car manufacturer to cover the support plan.

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Introduction and validation of the product (including all the parts delivered as part of this tender):	The tenderer shall provide support for the introduction and validation of the product (including but not limited to sharing technical valuable data, provide trackside support and personnel, etc.) for the first track running of the product and during testing.			
b.	Trackside support:	On-track support shall be provided by the tenderer throughout the entire season, and any time at the discretion of the FIA in order to manage issues concerning all the parts/services delivered as part of the perimeter of this tender.			
c.	Clean Room for on-track repairs:	A dedicated “clean room” shall be installed on site by the tenderer, as a purpose-built area			

		for inspecting the faulty batteries in case of possible failures during official events.			
d.	Trackside personnel:	The following personnel shall be made available for the purpose of providing trackside support during official events: <ul style="list-style-type: none"> <li>— 1 engineer for each 2 teams to be available on track</li> <li>— 1 project leader (main FIA contact)</li> <li>— 1/2 clean room operators.</li> <li>— 2/3 technicians.</li> </ul>			
e.	Trackside event reporting:	Following each official session, a battery report shall be made available by the tenderer as required. After each test and race, there should be a complete report issued no later than the end of the following week.			
f.	Off-track support:	The tenderer shall propose a framework for off-track support to all competitors. Additionally, the tenderer shall provide the necessary support in the case a battery shall be shipped to the relevant workshop for off-track repair, at the conditions set between the competitors and the tenderer.			
g.	Support personnel during private test events:	The tenderer shall provide support equipment and personnel to all competitors during private test events, at the discretion of the competitors (at their own expenses).			
h.	Additional services:	If the discharge conditioning unit is supplied as part of this tender, the tenderer shall provide discharging services according to the			

		applicable air freight regulations, at the conditions set between the competitors and the tenderer.			
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**20. DATA RELATED TO THE PRODUCT (\*DATE TBC BETWEEN THE TENDERER AND THE FIA)**

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Key data sharing among all the selected tenderers and the FIA:	The tenderer undertakes to work closely with the selected tenderers (for the supply of the common chassis and the tyres) as well as the charging system and infrastructure providers, under supervision of the FIA, to provide the necessary support (including but not limited to sharing key information as detailed in Art. 20 b), c), d), e), f) and g) below) from the early stages of the project following the final single suppliers' selection of the FIA.			
b.	Technical specifications related to the battery system:	<p>The following documentation shall be delivered by <u>January 2021*</u> to car manufacturers (subject to manufacturer registration), including:</p> <ul style="list-style-type: none"> <li>— CAD model (for mechanical and electrical powertrain interface):</li> <li>— Electrical characteristics (VH block diagram, HVIL schematic, fuses and connector specs, etc.)</li> <li>— MGU/MCU isolation resistance requirements</li> </ul> <p>The FIA reserves the right to request any additional documentation as required.</p>			



c.	DC/DC converter specifications:	<p>The DC/DC specifications shall be made available to car manufacturers by <u>April 2021*</u>, including:</p> <ul style="list-style-type: none"> <li>— 48V: Power Max mean and Peak</li> <li>— 12V: Power Max mean and Peak</li> <li>— Outputs current allocation and functionalities</li> <li>— Connectors Pinout</li> </ul>			
d.	LV schematic	<p>The LV schematic shall be provided to car manufacturers by <u>April 2021*</u>, including:</p> <ul style="list-style-type: none"> <li>— P0/P1/P2 Logic</li> <li>— CAN layout, Interlock layout</li> </ul>			
e.	Software specifications:	<p>The main software specs shall be made available to car manufacturers by <u>July 2021*</u>, including:</p> <ul style="list-style-type: none"> <li>— BMS state machine</li> <li>— DC/DC state machine</li> <li>— CAN DBC for Battery and LV</li> <li>— Logger capability details</li> <li>— Software implementation guide</li> </ul>			
f.	Additional documentation:	<p>User manuales shall be provided to the car manufacturers by <u>November 2021*</u>, including:</p> <ul style="list-style-type: none"> <li>— First use check-up list</li> <li>— Cooling requirements and pump control details</li> <li>— Safety guidelines</li> <li>— Transportation, storage and packaging guidelines.</li> </ul>			

g.	Battery model:	The battery model shall be made available to car manufacturers by <u>December 2021*</u> , including: <ul style="list-style-type: none"> <li>— BMS emulation with derating</li> <li>— Thermal model</li> <li>— OCV DCR</li> <li>— Efficiency</li> </ul>			
h.	Online portal for data sharing:	The tenderer shall put in place a common online portal, in order to easily share information linked to the product throughout the season.			

## 21. COST CAP

The price of the product shall be in accordance with the cost cap outlined below. The cost cap will only be enforced if a car manufacturer's order is placed within the defined timescale specified by the tenderer and agreed with the FIA.

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Battery system (incl. BMS, DC/DC, cooling pump, valuable data delivery, excl. thermal / discharge conditioning units, dielectric fluid, pit equipment, support plan, logistics)	250k € / yearly N.B: In case of faulty battery, it will be the responsibility of the tenderer to cover any extra costs (including logistic costs).			
b.	Spare parts (incl. on-track):	The price of the spare parts combined in the perimeter of this tender does not exceed 135% of the product price that is indicated in the point a) above.			

## 22. PRICE LIST

The tenderer shall specify the price list, including the price of the product, the spare parts as well as any other part, component and service included in the perimeter of this tender. The price list shall be detailed in the price form that is included in the Appendix I of this tender document. The price form may be adjusted to reflect the tenderer's proposal.

## 23. ADDITIONAL INFORMATION TO BE INCLUDED TO THE TENDER

			COMPLIANCE	EVIDENCE	NOTES
a.	General:	<ul style="list-style-type: none"> <li>— Company presentation (including but not limited to technical expertise, organisation ability, resources, etc.).</li> <li>— Information related to any sub-contractors (including but not limited to company information, technical expertise, contacts, etc.), in particular regarding the cells supplier.</li> <li>— Evidence of industry expertise in managing contracts of similar size and nature within the motorsport / automotive industries.</li> </ul>			
b.	Project description:	<ul style="list-style-type: none"> <li>— Technical product review (including cell type, battery system requirements, cooling system, mechanical (structural), electrical, safety specifications, etc.).</li> <li>— Global performance targets and technical solutions (incl. weight, volume, power, etc.).</li> <li>— Description of the validation programme, equipment, resources and associated timeline.</li> </ul>			

c.	Manufacturing capability / Supply chain management:	<ul style="list-style-type: none"> <li>— Definition of the supply chain (including detailed information on third-party suppliers and/or partners).</li> <li>— Manufacturing capabilities, quality standards, management systems and certifications.</li> <li>— Evidence of manufacturing capabilities and procedures through on-site visit by the FIA.</li> </ul>			
d.	Testing facilities:	<ul style="list-style-type: none"> <li>— Evidence of testing capabilities, and procedures to perform tests / quality checks / inspections at component, sub-assembly and full-scale level.</li> </ul>			
e.	Financial stability:	<ul style="list-style-type: none"> <li>— Evidence of financial stability and ability of the tenderer to raise and maintain funding to supply the product, the spare parts and the associated services for the entire duration of the contract.</li> </ul>			
f.	Human Resources allocation:	<ul style="list-style-type: none"> <li>— Overview of the tenderer's staff allocated to the project during the tendering phases and to provide on-track and off-track support.</li> </ul>			
g.	Commitment to Sustainability	<p>As part of the FIA Formula E World Championship's intention to promote sustainability, the tenderer will be assessed on its commitment to effective environmental management across their operations, hence:</p> <ul style="list-style-type: none"> <li>— The tenderer is required to elaborate a Life Cycle Assessment (LCA) for the</li> </ul>			

		<p>product delivered as part of this tender.</p> <ul style="list-style-type: none"> <li>— The tenderer is required to submit procedures for end-of-life processing and recycling plan of any damaged parts beyond repair.</li> <li>— The tenderer is also required to commit on 2nd life projects to re-use race car battery cells after first year within the context of the FIA FE World Championship or elsewhere. The relevancy of the project shall be discussed and agreed with the FIA, and a regular update on the progresses provided to the FIA.</li> </ul>			
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**24. TECHNOLOGY READINESS LEVEL (TRL) MATRIX**

The tenderer should fill in relevant information on the TRL matrix in order to assess the maturity level of the battery technology proposed throughout the various stages of the tendering process. The TRL Matrix is included in the Appendix III B of this tender document.

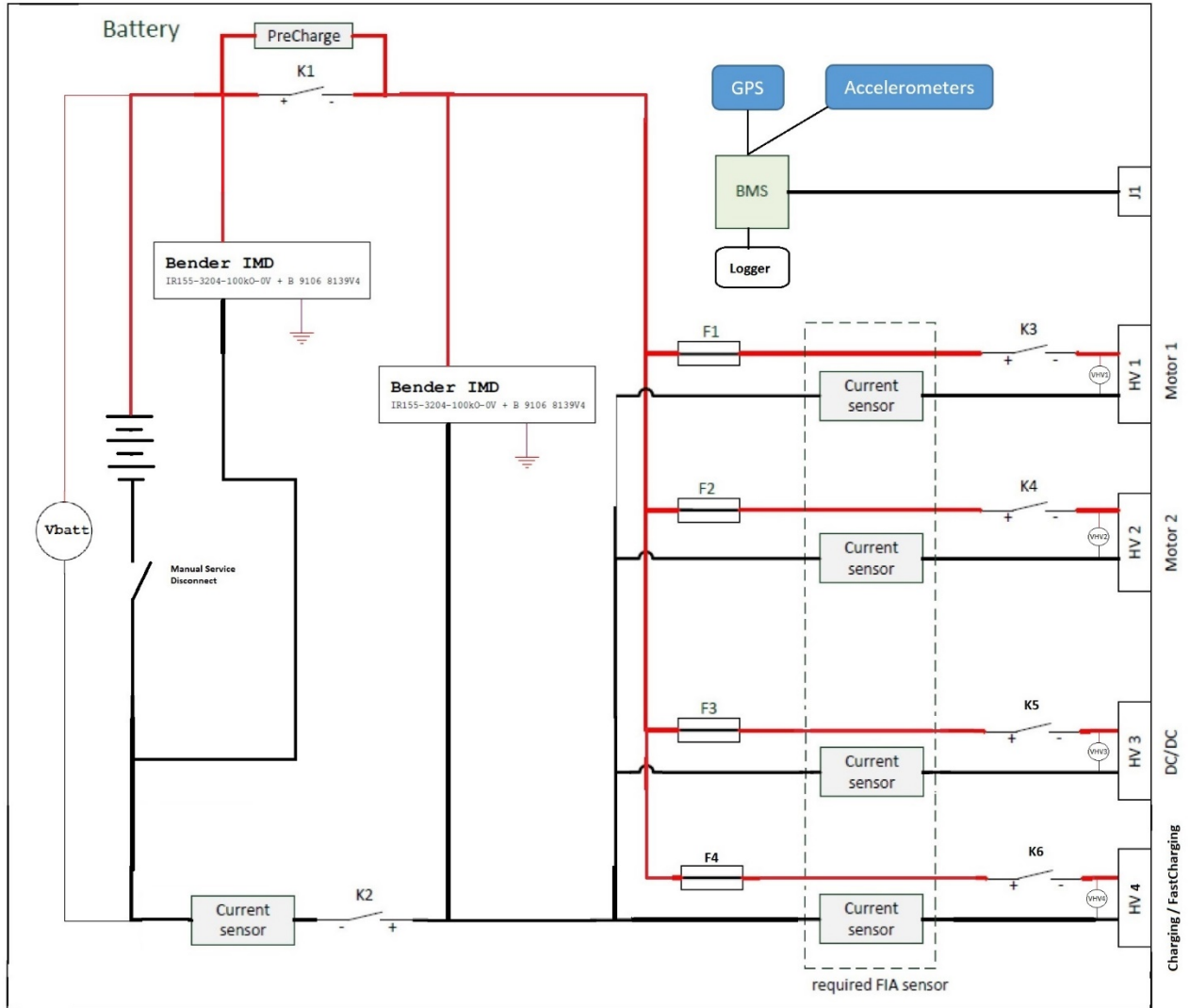
**25. PROJECT TIMELINE (\*DATE TBC BY THE TENDERER)**

			<b>COMPLIANCE</b>	<b>EVIDENCE</b>	<b>NOTES</b>
a.	Publication of ITT:	16 December 2019			
b.	Tender submission date:	<del>31 March</del> 14 April 2020			
c.	FIA final selection:	19 June 2020			
d.	Manufacturer registration:	January 2021 (valid for S9, S10, S11)			
e.	Valuable Data delivery to car manufacturers*:	TBC by the tenderer (according to Art. 20 of this tender document)			
f.	Purchase order* (for test car)	TBC by the tenderer			
g.	Battery alpha pack	April 2021			
h.	Purchase order* (for race car)	TBC by the tenderer			
i.	Crash tests, UN certification	August 2021			
j.	Test mule cars:	September 2021			
k.	Manufacturer cars delivery:	January 2022			
l.	Race cars delivery:	August 2022			
m.	Manufacturer Homologation:	September 2022			
n.	Collective pre-season test:	October 2022			
o.	First race season 9:	November 2022			

N.B. The tenderer must propose a complete timeline which will meet the timing requirements outlined above, which includes all the project milestones/deadlines.

### APPENDIX III A

#### Example of Typical Electrical Layout of the Battery System



### **APPENDIX III B**

#### Technology Readiness Level (TRL) Matrix

<b>Technology Readiness Level</b>	<b>Description (ISO 16290)</b>	<b>Battery R&amp;D state</b>
<b>TRL 1</b>	Basic principles observed and reported	<ul style="list-style-type: none"> <li>— <i>Study of technology requirements</i></li> <li>— <i>Comparison of key metrics</i></li> </ul>
<b>TRL 2</b>	Technology concept and/or application formulated	<ul style="list-style-type: none"> <li>— <i>Initial concept design</i></li> <li>— <i>Half-coin cell</i></li> <li>— <i>Evaluation of basic materials e.g. cathode/anode powder</i></li> </ul>
<b>TRL 3</b>	Analytical and experimental critical function and/or characteristic proof-of-concept	<ul style="list-style-type: none"> <li>— <i>Initial key metrics tested</i></li> <li>— <i>Full coin cell or single layer pouch cell</i></li> <li>— <i>Verification of initial assumptions</i></li> </ul>
<b>TRL 4</b>	Component and/or breadboard functional verification in laboratory environment	<ul style="list-style-type: none"> <li>— <i>Component level validation of materials e.g. capacity, rate capability</i></li> <li>— <i>Small pouch cell</i></li> <li>— <i>Full scale cell characteristics forecasted</i></li> <li>— <i>Initial manufacturing assessment</i></li> <li>— <i>First order cost analysis of cell</i></li> </ul>
<b>TRL 5</b>	Component and/or breadboard critical function verification in relevant environment	<ul style="list-style-type: none"> <li>— <i>Key verification testing conducted e.g. cycle life, abuse tolerance</i></li> <li>— <i>Full scale prototype cell</i></li> <li>— <i>Supply chain analysis of materials and components</i></li> </ul>
<b>TRL 6</b>	Model demonstrating the critical functions of the element in a relevant environment	<ul style="list-style-type: none"> <li>— <i>Subsystem key functions verified</i></li> <li>— <i>Battery module or small-scale battery</i></li> <li>— <i>Manufacturing volume production feasibility study and risk analysis</i></li> <li>— <i>Identify tolerance sensitivity</i></li> <li>— <i>Breakdown of actual production cost of cell</i></li> </ul>
<b>TRL 7</b>	Model demonstrating the element performance for the operational environment	<ul style="list-style-type: none"> <li>— <i>Critical functions of system verified e.g. BMS, mechanical robustness</i></li> <li>— <i>Prototype battery pack</i></li> <li>— <i>Bench or 'flight' testing of key performance e.g. power cycle life</i></li> <li>— <i>Manufacturing process control defined</i></li> </ul>
<b>TRL 8</b>	Actual system completed and accepted for flight ('flight qualified')	<ul style="list-style-type: none"> <li>— <i>'Fleet testing' completed</i></li> <li>— <i>(Pre-)Production battery pack</i></li> <li>— <i>Manufacturing process control verified</i></li> <li>— <i>UN DOT qualification</i></li> </ul>
<b>TRL 9</b>	Actual system 'flight proven' through successful mission operations	<ul style="list-style-type: none"> <li>— <i>Successful operation of mission with acceptable performance and reliability</i></li> <li>— <i>Production battery pack</i></li> </ul>



## **APPENDIX IV**

### **FIA STANDARDS OF CONDUCT FOR SUPPLIERS**

#### **1 – GENERAL**

1.1 The activities of the Fédération Internationale de l'Automobile ("**FIA**") are to be conducted in compliance with all applicable laws, statutes, regulations, ordinances, orders, decrees, codes of practice, guidelines, directions, relevant industry and ethical standards and any other applicable rules of the jurisdictions where the FIA and/or its suppliers operate ("**Applicable Law**").

1.2 The FIA further acts in a socially responsible manner, and has issued these standards of conduct for suppliers ("**Standards**") to set out its high expectations in the areas of health and safety, human rights and employment practices, environmental management and sustainability, business integrity and anti-bribery policies, and related fields.

1.3 These Standards apply to all individuals, companies, consultants, vendors, contractors, agents and any other entities that provide services and/or supply material or other products to the FIA ("**Suppliers**"), as well as to their own employees, suppliers, sub-contractors, agents and related entities.

1.4 Suppliers must comply with the Applicable Law and these Standards. They guarantee similar compliance for the work performed by their employees, suppliers, sub-contractors, agents and related entities. When the Applicable Law and these Standards cover the same subject matter, the ones setting the highest standards apply. When these Standards contradict the Applicable Law, the Applicable Law prevails.

1.5 As part of these Standards, the FIA further expects its Suppliers to abide by the generally recognised principles inspired by the international conventions and instruments of the United Nations (UN) (in particular the UN Guiding Principles on Business and Human Rights and the UN Global Compact), the International Labor Organization (ILO), the Organisation for Economic Co-operation and Development (OECD) (in particular the OECD Guidelines for Multinational Enterprises), as well as any similar protection norms.

1.6 Suppliers shall periodically review their practices, conduct periodic self-evaluations, due diligence and establish management systems for sustainable practices to ensure that they, as well as their employees, suppliers, sub-contractors, agents and related entities, are complying with the Applicable Law and these Standards. These Standards supersede any previous standards for Suppliers issued by the FIA.

1.7 The FIA may conduct or to have conducted on its behalf inspections, audits and/or due diligence checks of facilities and business practices to monitor Suppliers' compliance with the Applicable Law and these Standards, and fulfilment by Suppliers and their employees, suppliers, sub-contractors, agents and related entities of their undertakings. Suppliers shall provide any relevant information and documents, and give access to the representatives of the FIA to verify such compliance. Suppliers shall undertake to improve or correct any inadequacy. Suppliers shall keep sufficient authentic and accurate records to prove compliance. Failure to cooperate or to provide the information requested shall constitute a breach of these Standards.

1.8 The FIA may terminate or suspend its relationship with any Supplier, as well as resort to any other remedy available, when that Supplier does not comply with the Applicable Law and/or these Standards.

1.9 These Standards may be amended by the FIA from time to time. Their enforcement and interpretation rest solely with the FIA and do not confer or create any rights in favour of any party other than the FIA.

1.10 Should Suppliers need additional information or guidance on these Standards, or wish to report a violation, whether actual or potential, they shall contact the FIA Ethics Committee and/or the FIA Compliance Officer<sup>1</sup>.

## **2 - HEALTH AND SAFETY**

2.1 Suppliers must provide their personnel with safe and healthy working conditions, in order to avoid accidents or injuries which could be caused by, be related to or derive from their work, including during the use of equipment or during work-related travel. Suppliers must implement proceedings and training programs to detect, avoid and minimise any risk to health and safety of the personnel. Suppliers' facilities are to be constructed and maintained in accordance with the Applicable Law and the relevant industry standards.

2.2 Suppliers working with the FIA or onsite at the FIA's premises or at any other location must work in a way that assures their own safety and the safety of others in compliance with the Applicable Law, including the applicable FIA and governmental, environmental, health and safety requirements. Any incidents that may impact the FIA must be reported promptly.

## **3 HUMAN RIGHTS AND EMPLOYMENT PRACTICES**

### **Dignity and Fundamental Rights**

3.1 Suppliers must treat the FIA and their own personnel with dignity and respect.

3.2 Suppliers represent and warrant that they, as well as their employees, suppliers, sub-contractors, agents and related entities, protect and safeguard human dignity and fundamental rights under any and all circumstances.

3.3 Suppliers comply with, and maintain awareness of, the Applicable Law in the countries where they conduct business. Suppliers conduct business responsibly, with integrity, honesty and transparency, and adhere to the standards set forth therein.

### **Discrimination, Harassment**

3.4 Suppliers must comply with the Applicable Law, including all applicable employment laws and regulations, prohibiting discrimination in the workplace. There shall be no discrimination or any other form of unjustified inequality on the basis of race, skin colour, gender, sexual orientation, ethnic or social origin, language, religion, philosophical or political opinion, family situation or disability.

3.5 The FIA does not permit intimidation or hostility and will not tolerate any behaviour from Suppliers that might harass, disrupt or interfere with another person's ability to work.

### **Child Labor**

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<sup>1</sup> ethics-committee@fia.com

3.6 Suppliers represent and warrant that they, as well as their employees, suppliers, sub-contractors, agents and related entities, comply with the Applicable Law and do not resort to any form of child labor or other exploitation of children which are not allowed under the applicable labor and employment laws and regulations.

3.7 Suppliers must adhere to the minimum employment legal age limit defined by the Applicable Law, and comply with the 1999 ILO Convention No. 1822 on the worst forms of child labour and the 1973 ILO Convention No. 1383 on the minimum age for admission to employment and work.

3.8 In no instance may a Supplier permit children to perform work that exposes them to undue physical risks that can cause physical, mental or emotional harm or improperly interfere with their schooling (except as may be permitted under apprenticeship or similar programs in which the minor is lawfully participating).

### **Forced, Bonded or Indentured Prison Labor, Slavery and Human Trafficking**

3.9 Suppliers must not manufacture products or render services (or incorporate any materials therein that have been manufactured) in violation of laws governing workers' human rights, including human trafficking and slavery.

3.10 Suppliers confirm not using, in providing goods and services, involuntary or forced labor, whether indentured, bonded, prison labor or otherwise. This includes transporting, harbouring, recruiting, transferring or receiving persons by means of threat, force, coercion, abduction or fraud for labor or services.

3.11 Suppliers confirm not to have confiscated or withheld workers' identity documents or other valuable items, including passports, work permits and travel documentation.

3.12 Suppliers confirm not to have unreasonably withheld or diverted workers' wages.

3.13 Suppliers must comply with the Applicable Law to prevent undeclared, illegal and clandestine employment.

### **Wages and Working Hours**

3.14 Suppliers must compensate all employees by providing wages, overtime pay, benefits and paid leave which as a minimum comply with the requirements under the Applicable Law. Suppliers shall also comply with the applicable rules and standards pertaining to working hours, subject to any exemptions relevant to events and competitions in the field of automotive and motor sports under the applicable laws and regulations.

### **Drugs**

3.15 Suppliers must not possess, use or sell illegal drugs on the FIA's premises and/or at the FIA events or perform their work under the influence of alcohol, illegal drugs and any performance-enhancing substances. They shall make sure that the same applies to their employees, suppliers, sub-contractors, agents and related entities. In compliance with the applicable anti-doping regulations, all doping practices are strictly prohibited within the framework of the competitions organised by the FIA.

## **4 ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY**

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2 Available at: [http://ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:C182](http://ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C182)

3 Available at: [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:C138](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C138)

4.1 Suppliers must comply with the Applicable Law in relation to the protection of the environment.

4.2 Suppliers must obtain any environmental permits and/or authorizations required and act in accordance with such permits and/or authorizations.

4.3 Suppliers shall endeavour to protect the environment on the occasion of any events they organise and/or within their business operations. They shall take reasonable endeavours that their operations are consistent with the generally accepted standards for environmental protection in their industries, and that on an ongoing basis, they join the FIA in its objective continuously improve its sustainability and environmental focus.

## **5 BUSINESS INTEGRITY**

5.1 In addition to complying with the Applicable Law, Suppliers conduct business responsibly, with integrity, honesty and transparency, and adhere to the following standards of business integrity:

### **Corruption and Bribery**

5.2 Suppliers are prohibited from engaging directly or indirectly in any form of corrupt practices and/or bribery, as well as any related illegal or unethical practices.

5.3 Corrupt practice means any form of misuse of power for any form of gain. Acts of corruption are usually intended to influence an individual in the performance of his work to act dishonestly and/or improperly.

5.4 A bribe is an inducement or reward or any form of benefit offered, promised, given or authorised, directly or indirectly: (i) to improperly influence anyone, or (ii) to reward anyone for the performance of any function or activity in order to secure or gain any commercial, contractual, regulatory or personal advantage. A bribe can take many forms, for example: (i) a direct or indirect promise or offer of something of value; (ii) the offer or receipt of a kickback, fee, reward or other form of benefit; (iii) the giving of aid or donations; (iv) the use of voting rights designed to exert improper influence.

5.5 In particular, Suppliers are prohibited from directly or indirectly paying anything of value to a government or other public official in order to:

- Obtain or retain business or improperly influence the act or decision of any government official, political party, candidate for political office, or official of a public international organization;
- Gain an improper advantage; or
- Illegally influence the action of any individual, customer, company, or company representative.

5.6 Suppliers are required to keep accurate and transparent records that reflect actual transactions and payments.

### **Gifts and Entertainment**

5.7 Gifts and entertainment are not needed in order to conduct business with the FIA and are highly discouraged.

5.8 The following situations are always inappropriate and are expressly prohibited in relation to FIA employees, representatives, agents, appointees, consultants, volunteers, officers, commission members, sporting officials, etc., and third parties acting on behalf of the FIA:

- Offering any gift, entertainment, preferred treatment and/or any other advantage while involved in a current purchasing or contracting decision process (e.g. invitation to tender, call for interest,

request for quotation, request for interest, request for proposals and any other form of calls for expression of interest);

- Any gift of currency, including "gift cards" ;
- Any gift (e.g. branded items, stationery, calendars, pens, etc), that is not compliant with the Applicable Law and/or local customs;
- Offering hospitality or any other form of entertainment that is not compliant with the Applicable Law and/or local customs;
- Offering an opportunity to purchase products, services, or benefit from a financial interest, under terms which are not available to other employees, suppliers, sub-contractors, agents and related entities.

5.9 The giving or receipt of gifts by Suppliers in the fulfilment of their duties for the FIA is not prohibited if all of the following requirements are met: (i) the gift complies with the Applicable Law, including the local standards and customs of the recipient's and the givers' country; (ii) the gift is not made with the intention of obtaining or retaining business or a business advantage, or of rewarding the provision or retention of business or a business advantage, or in explicit or implicit exchange for favours or benefits; (iii) the gift is given openly, not secretly; (iv) the gift cannot be viewed as excessive under local standards and customs (e.g. stationery, calendar, wine, sweets, etc.), and is only provided as a courtesy, token of esteem or gratitude for the service rendered, or a mark of friendship, when the circumstances so justify for example at an event or a specific period of the year (e.g. Christmas); and (v) the gift does not include cash or a cash equivalent (such as gift certificates, checks or vouchers). The value of a gift should not exceed, in any event, an amount of CHF 100.

5.10 The FIA appreciates that the practice of giving business gifts varies between countries and regions and what may be normal and acceptable in one region may not be in another. The test to be applied is whether in all the circumstances the gift is reasonable and justifiable. The intention behind the gift should always be considered.

5.11 The hospitality shown to Suppliers and the persons accompanying them shall not exceed the standards prevailing in the host country or in the event that they attend. The intention behind the hospitality should always be considered.

5.12 In case of doubt or queries concerning the above requirements, in particular the value of a gift or nature of the hospitality, the FIA Ethics Committee and/or the FIA Compliance Officer should be consulted before acceptance.

## **6 CONFLICTS OF INTEREST**

6.1 Suppliers may not perform their duties in situations involving a perceived, apparent, potential and/or actual conflict of interest, and they must endeavour to avoid creating any such situations.

6.2 A conflict of interest arises when personal interests or activities influence, or appear to influence, the ability to act in the best interests of the FIA. Some situations that could cause a conflict of interest include:

- Having a significant financial investment in any company that competes, does business, or seeks to do business with the FIA. A significant financial interest includes voting control, or an

ownership of more than 1% of the outstanding capital of a business, or an investment that represents more than 5% of the investor's total assets;

- Providing similar services for direct competitors of the FIA, with access to confidential or competitive information;
- When family members or partners work for the FIA or another FIA supplier.

6.3 Suppliers must disclose any perceived, apparent, potential and/or actual conflicts of interest to the FIA Ethics Committee and/or the FIA Compliance Officer. In case of doubt concerning any conflicts of interest, disclosure or at least consultation should be favoured.

6.4 Failure to disclose any such conflicts of interest in a timely manner, or provide complete information upon the FIA's request, constitutes a breach of these Standards.

## **7 FAIR COMPETITION AND ANTITRUST**

7.1 Suppliers must comply with the Applicable Law regarding fair competition and antitrust. This covers the situations of abuse of dominant position, concerted practices and illegal cartels.

## **8 TRADE COMPLIANCE**

8.1 Suppliers must comply with all import and export controls, commercial restrictions, sanctions regimes (in particular Swiss, EU and US sanctions), and any other trade compliance norms under the Applicable Law.

## **9 MONEY LAUNDERING AND INSIDER TRADING**

9.1 Suppliers must comply with anti-monetary laundering norms under the Applicable Law and endeavour to take all appropriate measures to avoid that their activities be used as a vehicle of money laundering.

9.2 Suppliers must refrain from being involved in, or favouring business with, offshore entities. Suppliers shall inform the FIA in case any business conducted for the FIA involves jurisdictions identified as Offshore Financial Centers by the International Monetary Fund.

9.3 Suppliers must comply with all norms against insider trading under the Applicable Law and endeavour to take all appropriate measures to avoid that their knowledge of, or access to, sensitive information be used for favouring insider trading.

## **10 ACCURACY OF BUSINESS RECORDS**

10.1 All Suppliers' financial books and records must conform to generally accepted accounting principles and the Applicable Law. Suppliers' records must be accurate in all material respects, they must be legible, transparent, and reflect actual transactions and payments. Furthermore, Suppliers undertake not to hide, fail to record or make false entries in their financial books.

## **11 CONFIDENTIAL INFORMATION**

11.1 Suppliers must treat as confidential or secret any information, which is not public, communicated to them in the exercise of their duties. Any information or opinion shall be divulged only in accordance with the principles, directives and objectives of the FIA.

## **12 DATA PRIVACY**

12.1 Suppliers must comply with the EU General Data Protection Regulation 2016/679 when handling personal data (“Personal Data”) provided by the FIA.

12.2 Suppliers receiving Personal Data from the FIA will adopt, maintain and follow written and comprehensive security practices that are sufficient to safeguard FIA’s Personal Data from any (a) unauthorized disclosure, access, use or modification; (b) misappropriation, theft, destruction, or loss; or (c) inability to account for such Personal Data; and treat all Personal Data as strictly confidential.

12.3 Suppliers will only process the Personal Data, in a Member State of the European Union or in a State party to the agreement on the European Economic Area (“EEA”) or in Switzerland. A transfer of the Personal Data to a third country other than the aforementioned requires prior informed consent given by the FIA.

12.4 Suppliers shall not, by any means, communicate the Personal Data to or put the Personal Data at the disposal of third parties without the FIA’s prior written consent thereto unless it is required to do so by mandatory law. Suppliers shall notify the FIA if Personal Data is to be provided to a third party as a result of mandatory law unless the law prevents such notification taking place.

12.5 Suppliers shall notify the FIA Ethics Committee and/or the FIA Compliance Officer of any breach in the processing of the Personal Data and shall comply with any reasonable request for information to allow the FIA to respond to and to take suitable further steps in respect of the incident.

## **13 CONDUCT TOWARDS GOVERNMENTS AND PRIVATE ORGANISATIONS**

13.1 Suppliers shall endeavour to maintain harmonious relations with national authorities, in accordance with the principle of universality and of political neutrality of the FIA.

13.2 Suppliers are free to play a role in the public life of the nations to which they belong. Within this framework, they may not abusively take advantage of their position within the FIA, engage in any activity or follow any ideology inconsistent with the principles defined in the FIA Statutes and Regulations and set out in these Standards.

## **14 MOBILE DEVICES, ELECTRONIC MEDIA, INTERNET AND E-MAIL USE**

14.1 In those circumstances where Suppliers have access to the FIA's electronic environment (e-mail, voicemail, IT network, databases or other), Suppliers must:

- Protect the FIA's confidential information and electronic media;
- Secure mobile devices;
- Encrypt or password the protected data;
- Comply with all applicable data protection laws and regulations;
- Use these tools for performance of the agreement only; and
- Use these tools in accordance with good practices.

**APPENDIX V**

**QUESTIONNAIRE COMPLIANCE – DUE DILIGENCE**