



# FSA Competition Handbook 2023

Revision 1.1.0

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## AT 1 Administrative Regulations

### AT 1.1 Formula Student Austria

Formula Student Austria (FSA) is part of the Formula SAE Competition Series and is open to entries with both conventional and electric powertrains.

This document contains the event-specific rules and procedures for the Formula Student Austria Competition.

If you have any questions regarding the Rules 2023:

- If you are registered for FSG, please use the FSG issue tracker <https://www.formulastudent.de/fsg/rules/faq/> - there are FSA officials monitoring this as well
- If you have any questions regarding the FSA rules or are not registered at FSG, feel free to contact the rules committee under [rules@fsaustria.at](mailto:rules@fsaustria.at)

#### AT 1.1.1 Inquiries regarding FSA rules

Inquiries must be raised via [rules@fsaustria.at](mailto:rules@fsaustria.at) (regarding FSA rules) or [info@fsaustria.at](mailto:info@fsaustria.at) (regarding the FSA event and anything related).

Only information from [rules@fsaustria.at](mailto:rules@fsaustria.at) or [info@fsaustria.at](mailto:info@fsaustria.at) is to be considered as an official response from FS Austria.

### AT 1.2 Formula Student Austria 2023 Rules

The Formula Student Austria (FSA) competition will comply with the ruleset known as “Rules 2023” which is published on the FSG homepage. Changes and additions specific to FSA are located within this document and supersede the respective sections of the published “Rules 2023” document.

The Formula Student Austria Competition Handbook is to be considered part of the rules.

In case of any contradiction between this document and “Rules 2023”, the FSA rules are to be considered valid.

Additionally, any team in the combustion class can either run a standard combustion vehicle according to the standard rules or run a hybrid combustion vehicle according to the FS CV Hybrid rules.

### AT 1.3 Competition Language

The competition language is English.

### AT 1.4 Competition Date and Location

Formula Student Austria 2023 takes place from Sunday, 2023-07-23 to Thursday, 2023-07-27 at the Red Bull Ring in Spielberg/Austria.

### AT 1.5 Competition Time

The Formula Student Austria official time:

From	Till	Time
2022-10-30	2023-03-25	CET
2023-03-26	2023-10-28	CEST

All dates are in the YYYY-MM-DD (ISO 8601) format.

### AT 1.6 Vehicle Classes and Scoring System

The event will be run with two classes – CV/CV Hybrid and EV – with all static and dynamic events being run together but scored separately. There will be no driverless (FSD) class and no Driverless cup, see also [AT 1.11](#). Vehicles which are built according to the FS CV Hybrid rules will be scored together with non-hybrid combustion vehicles.

### AT 1.7 Distribution of Points

<b>Static Event</b>	
Business Plan Presentation	75
Cost and Manufacturing	100
Engineering Design	150
<b>Dynamic Events</b>	
Skid Pad	75
Acceleration	75
Autocross	100
Endurance	325
Efficiency	100
<b>Overall</b>	<b>1000</b>

### AT 1.8 Personal Transport

Use of small vehicles on-site is allowed but teams are reminded to use them responsibly, especially regarding pedestrian safety and loud noise.

### AT 1.9 Unofficial timing and telemetry equipment

No unofficial timing and telemetry equipment (e.g. IR Transmitters, radio extenders, etc.) is allowed inside the dynamic area. Exempt from this rule is the driver change/preparation area, where team members with dynamic passes are allowed to remain during the course of the dynamic events if the equipment does not interfere with the conduct of the event.

### AT 1.10 COVID-19 Specific Regulations

To comply with applicable laws and regulations and to mitigate health risks, there may be significant changes to the event format. These may include but are not limited to: limitation of team size (min: 10), changes to static event formats, the requirement to attend online sessions, and mandatory health precautions on-premises (e.g. checking of vaccination status, mask-wearing, CoV-testing). All relevant information regarding Covid-19 will be published in a separate document at fsaustria.at.

### AT 1.11 No Driverless Cup

There will be no Driverless Cup at FSA 2023.

#### AT 1.11.1 No Autonomous System required

No Autonomous System is required for any part of the competition. Autonomous System components may be removed from the car or left in the car at the team's discretion. Rules 2023/T14.7 do apply and will be enforced in scrutineering.

Rules 2023/A1.2.6 to A1.2.8 are void

Rules 2023/A4.1.1: no team will participate in any DC

Rules 2023/A4.4 is void

Rules 2023/A5.6.3 all points marked [DC only] may be included in the VSV, but do not have to be

Rules 2023/A6.3.2 is void

Rules 2023/T14 is void with the exception defined in [AT 1.11.2](#)

Rules 2023/T15 is void

Rules 2023/CV1.2.2 is void

Rules 2023/IN6 is void, however T14.7 will be inspected if autonomous system components are mounted.

Rules 2023/IN11.2 is void

Rules 2023/S2.4.4 the Autonomous System is not considered a “system” (read: it is not required but may remain in the car)

Rules 2023/S3 Autonomous System will not be considered in the Engineering Design Event but Autonomous System components may remain in the car

Rules 2023/S3.7 is void, see [AT 5.1](#)

Rules 2023/D2.2.8 is void

Rules 2023/D2.3.1 There will be no practice track for vehicles in autonomous mode

Rules 2023/D2.4 to D2.7 are void

Rules 2023/D4 see [AT 7.1](#)

Rules 2023/D5 see [AT 7.2](#)

Rules 2023/D6.4 and D6.5 are void

Rules 2023/D8 are void

### **AT 1.11.2 Vehicles with an Autonomous System**

If an Autonomous System is present, the following applies

- the ASMS must be switched off at all times
- the ASB must be deactivated/discharged
- Rules 2023/T14.7 apply

## **AT 2 Registration & Eligibility**

### **AT 2.1 Registration Date**

The registration quiz for FSA 2023 starts on Friday, 2023-01-27 at 1900 CET.

Keep in mind to register on [fsaustria.at](https://fsaustria.at) at least one day before the quiz starts.

Refer to the FSA website for details.

#### **AT 2.1.1 Registration fee**

The registration fee for Formula Student Austria is to be announced in the future. This includes:

Item	Net	incl.VAT
Handling Fee	EUR 600	EUR 720
Registration Fee (incl. 20 Team Members)	EUR 1750	EUR 2100
Camping Fee (x10)	EUR 909,09	EUR 1000

Payment is accepted only by bank transfer. Bank details will be sent to every successfully registered team by e-mail. Every team has to send a confirmation of the money transfer by e-mail. Payment is due within 7 days of successful registration. Failure to do so will result in the loss of your slot and your team being placed on the waiting list.

*Note: Faculty Advisors also count as team members and have to be registered as such.*

#### **AT 2.1.2 Cancellation and Refunds**

In case a team withdraws or is deregistered from the competition, the “Camping Fee” share (and applicable taxes) of the registration fee will be rewarded.

If Formula Student Austria is canceled, all fees except for the handling fee (and applicable taxes) will be refunded.

#### **AT 2.1.3 Additional Team Members**

Additional team members can be registered for EUR 35 incl. VAT (non-refundable) each until the TMD ([AT 3.1](#)). After the TMD the fee increases to EUR 70 incl VAT.

Payment is possible in cash at the on-site registration; please be sure to have the exact amount ready.

## **AT 2.2 Registration Capacity and Waiting List**

Registrations will be given out in the order of the quiz results; afterward in the order of submission. FSA will limit the number of entries to 58 (32 EV / 26 IC). After this limit is reached, additional entries will be placed on the waiting list and will eventually become a registered entry if another registered team redraws or is removed. Slots may be moved between classes at a later time (i.e. if a waiting list “runs out”)

### **AT 2.2.1 Slots**

A certain number of slots at FSA 2023 are reserved. If a team fits more than one reserved slot it will take up the one listed higher up in this document.

Reserved slots will automatically be assigned to the respective teams. To allow for this, the team needs to be registered on the FSA website by the time the quiz starts. After this time the reservation expires.

### **AT 2.2.2 2021 Top Finishers**

Three (3) slots in each class are reserved for the top finishers of FSA 2022:

#### **Combustion**

- U Stuttgart
- Széchenyi István U
- U Politécnica de València

#### **Electric**

- U Stuttgart
- TU Hamburg-Harburg
- DHBW Stuttgart

### **AT 2.2.3 Austrian Teams**

Five (5) slots are reserved for Austrian entries

- TU Graz (TU Graz Racing Team)
- TU Vienna (TUW Racing)
- UAS Graz (Joanneum Racing)
- UAS Vienna (OS.car Racing Team)
- Uni Innsbruck (Campus Tirol Motorsport)

### **AT 2.2.4 Wildcard & Hybrid slots**

Up to three (3) slots, independent of class, will be available as “Wildcard” slots, and up to 5 (five) slots will be available in the CV class as “Hybrid” slots. Wildcard and Hybrid slots will be assigned by FSA based on the “Wildcard & Hybrid Application” which has to be completed before the registration starts. See the FSA website for details.

## AT 3 Dates & Documents

**Note:** Some of these details might be subject to change to react to changes and requirements by other events in the FSAE series. Check [fsaustria.at/fsa-2023/rules](https://fsaustria.at/fsa-2023/rules) regularly for updates

### AT 3.1 Required Documents (Change of Rules 2023/A5.1.1)

ASF, ASRQ and SESA are not required for FSA 2023

Accordingly, the following rule does not apply: A5.7. The SES will be checked and must be approved by the officials prior to the competition.

### AT 3.2 Submission Dates Summary

Document	IC	EV	Date	Document Template
Fuel Type	•		at Registration	FSA website team profile
SES/SE3D	•	•	2023-03-17 13:00	FSG / Rules 2023
IAD	•	•	2023-03-17 13:00	FSG
HSD	•		2023-03-31 13:00	[Hybrid CV only] Hybrid CV Rules
ESF		•	2023-03-31 13:00	FSG online submission
BP ES & Pitch Video	•	•	2023-05-19 13:00	see <a href="#">AT 6.4</a> & <a href="#">AT 6.5</a>
Event Program Team Page	•	•	2023-05-26 13:00	FSA
EDR	•	•	2023-06-02 13:00	Rules 2023
DSS	•	•	2023-06-02 13:00	FSA
Team Member Designation	•	•	2023-06-02 13:00	FSA website team profile
Vehicle Status Video	•	•	2023-06-23 13:00	Rules 2023
Cost Report Documents	•	•	2023-07-18 13:00	FSG online submission

Documents not listed in this table are not required.

### AT 3.3 Cost Report Documents

The BOM & CBOM is to be created using the FSG CR tool. The whole CR is then to be exported using the corresponding “PDF Export” function in the CR tool.

The exported PDF should be zipped together with the Cost Report Explanation file (CREF) and Supporting Material (SM) (e.g. drawings)

There are no rules regarding the style of the CREF other than it should be a comprehensive explanation of the assumptions and calculations that were used to derive the part/process costs used in the CBOM.

The file format of the CREF shall be PDF.

The ZIP archive containing all documents must be uploaded no later than the deadline listed in [AT 3.1](#).

All uploaded documents shall contain the car number in the filename (e.g. <car\_number>\_CBOM.pdf)

The submission should look like this:

```
[ZIP archive]
├─ [C/D/BOM] PDF exported from FSG
├─ [CREF] Cost Report Explanation File, PDF
└─ [SM] Supporting Material, PDF
```

#### AT 3.3.1 CBOM

The CBOM must be created for the “system”: Suspension.



### **AT 3.3.2 DBOM**

The DBOM must be created for the “system”: Chassis and Body.

### **AT 3.4 Business Plan Documents**

All Business Plan Documents are “Group B” Documents according to Rules2023/A5

### **AT 3.5 ESF & EAIR**

The ESF (and EAIR if needed) has to be completed using the FSG online ESF tool. The upload of the ESF will not be possible at the FSA platform. Accordingly, any ESF checks, feedback and upload dates for possible upload penalties and de-registration will be handled via the FSG platform only.

### **AT 3.6 Health Insurance Certificate (change of Rules 2023/A4.2.1)**

Requirement waived. See <https://fsaustria.at/fsa-2023/hic-dl/> for details

### **AT 3.7 FSG Online submissions**

For certain documents, the use of online tools provided by FSG (Formula Student Germany) is required. To use these tools, a team has to be registered for the current FSG event. For teams not attending both FSA and FSG, registration for the end of the FSG waiting list is sufficient and no payment to FSG is required.

### **AT 3.8 SES, SE3D & IAD**

The SES, SE3D and IAD documents must only be submitted using the FSG platform. The upload of these documents will not be possible at the FSA website. Accordingly, any document checks and feedback will be handled via the FSG platform only. For the purpose of possible upload penalties or de-registration for these documents, only the upload date(s) at the FSG platform will be considered.

## **AT 4 Technical Requirements**

### **AT 4.1 Ready-to-Drive Sound (Change of Rules 2023/EV4.12.3)**

Sound-type requirement waived

### **AT 4.2 Accumulator Temperature Monitoring Device (change of Rules 2023/EV5.8.5, IN3.1.2)**

The logging device will not be installed at FSA

### **AT 4.3 Technical Inspection Sticker**

The sticker will be 150x100 mm (WxH). A suitable spot shall be reserved on the upward-facing bodywork between the front bulkhead and the front roll hoop.

### **AT 4.4 [EV only] Data Logger**

EV class Vehicles are required to install an FSA-provided data logger. The device is identical to the one provided by FSG – Specifications can be found in the FSG 2023 Competition Handbook.

#### **AT 4.4.1**

The data logger may remain in the car after the competition if FSG 2023 is attended by the team. Rules 2023/IN 12.1.10 will not be applicable in this case.

## AT 5 Engineering Design

### AT 5.1 Engineering Design Scoring (change of Rules 2023/S3.7)

#### AT 5.1.1 Engineering Design Scoring

The maximum score for the Engineering Design Event is 150 points.

#### AT 5.1.2 Engineering Design Scoring Criteria

Rules 2026\Table6 is void. The Judging Criteria for FS Austria are

- |  |                           |   |
|--|---------------------------|---|
| <ul style="list-style-type: none"><li>• Design Report</li><li>• Design Approach</li><li>• Knowledge/Understanding</li><li>• Execution/Build</li><li>• Use of Resources</li><li>• Creativity/Innovation</li><li>• Presentation</li><li>• Documentation &amp; Management</li></ul> | in the engineering fields | <ul style="list-style-type: none"><li>• Suspension</li><li>• Frame &amp; Body</li><li>• Aero</li><li>• Drivetrain (EV/IC)</li><li>• Electronic Systems</li><li>• Ergonomics</li></ul> |
|--|---------------------------|---|

for 10 (intermediate) points each. The final design score will be calculated from the intermediate score through normalization and scaling.

### AT 5.2 Engineering Design Event Procedure

The Engineering Design Event at FS Austria will take 40min, with sharp start and end times according to the separately published schedule.

The best teams of the EV and IC classes will get the chance to participate in the Design Finals.

## AT 6 Business Plan Presentation

### AT 6.1 Applicable Rules (Change of Rules 2023/S1)

Rules 2023/S1 is void and replaced by AT6

### AT 6.2 Business Plan Presentation Objective

#### AT 6.2.1

The objective of the BPP is to evaluate the team's ability to develop and deliver a comprehensive business model, which demonstrates their product – a prototype race car – could become a rewarding business opportunity that creates a monetary profit.

#### AT 6.2.2

The judges should be treated as if they were potential investors or partners for the presented business model.

#### AT 6.2.3

The race car doesn't have to be the core of the business idea; however, the business plan presentation must relate to the specific prototype race car entered in the competition. The quality of the actual prototype will not be considered as part of the BPP judging.

## **AT 6.3 Business Plan Presentation Procedure**

### **AT 6.3.1**

The Business Plan Presentation will be held in a three-stage process.

### **AT 6.3.2**

Stage 1 and Stage 2 will be held virtually prior to the competition. The Executive Summary (AT 6.4) and the Racing Elevator Pitch (AT 6.5) must be submitted beforehand according to the dates in [AT 3.1](#)

### **AT 6.3.3**

Stage 1 and Stage 2 will be handled as a drop-out stage. You need to convince the judges of your idea, in order to progress to the next stage. Teams that fail to do so, will not be eligible for points from or participation in the next stages.

### **AT 6.3.4**

Stage 3 will take place during the competition, as part of the static events. Teams can choose if they want to compete in person at the event site, virtually, or in any hybrid combination.

### **AT 6.3.5**

Teams unable to attend within the assigned time period in Stage 2 or Stage 3 will receive zero points. The teams are responsible for the performance of their equipment and connectivity.

## **AT 6.4 Executive Summary**

To convince the potential investors or partners that the team's presentation is worthy of their time, it is required that an executive summary is submitted before the competition. The executive summary should contain a one page description of the team's business plan. The team's car number and university name have to be mentioned on this page.

## **AT 6.5 Stage 1: The "Racing Elevator Pitch":**

### **AT 6.5.1**

The teams must submit a prerecorded 30-second video by providing a link to a video sharing service such as youtube or vimeo. The link must be included in the Executive Summary (AT 6.4). The video must be playable in a recent chromium-based browser without additional software or logins.

### **AT 6.5.2**

Teams are not limited in the way they present these 30 seconds. Visual aids of any kind are allowed, but not required

### **AT 6.5.3**

The target is to catch the attention of the judges so that they want to know more about your business idea

### **AT 6.5.4**

Two weeks after submitting the video and the Executive Summary, teams will be informed if they have made it to Stage 2.

## **AT 6.6 Stage 2: The "Business Pitch":**

### **AT 6.6.1**

Content of the "Business Pitch" is a compact version of the Business Plan Presentation with a specific focus on business figures. The teams have to present a realistic financial concept of a profitable project.

*Note: The business pitch is not a short version of the 10min presentation, the teams have to focus solely on the business figures.*

#### **AT 6.6.2**

The Business Pitch is limited to 3 minutes. The judges will stop any presentation exceeding 3 minutes. Immediately following the Business Pitch there will be a 5 minutes question and answer session

#### **AT 6.6.3**

The goal is to convince the judges that the team's idea is worth an investment.

#### **AT 6.6.4**

Teams are not limited in the way they present these 3 minutes, but it must be presented by one or more team members, however not more than three.

#### **AT 6.6.5**

FSA will provide the links to the respective software and communicate the slots in time.

#### **AT 6.6.6**

48h after presenting the Business Pitch, teams will be informed if they have made it to Stage 3.

#### **AT 6.6.7**

All teams who made it to Stage 3 will be assigned a specific Deep Dive Topic, which has to be part of the 10 Minute Business Plan Presentation.

#### **AT 6.6.8**

All team members must present their student and team member credentials if requested by event officials.

### **AT 6.7 Stage 3: The 10 Minute Business Plan Presentation**

#### **AT 6.7.1**

The 10 Minute Business Plan Presentation will be part of the static events on site of the competition covering all areas of the business idea

#### **AT 6.7.2**

Presentations are limited to a maximum of ten minutes. The judges will stop any presentation exceeding ten minutes

#### **AT 6.7.3**

The presentation will not be interrupted by questions. Immediately following the presentation there will be a Q&A session.

#### **AT 6.7.4**

A maximum of two team members may present the business plan physically at the event.

For presenting and/or the Q&A session, only three members are allowed to dial in virtually. All team members that join the presentation virtually must present their student and team member credentials prior to Stage 3, if requested by event officials.

#### **AT 6.7.5**

All team members involved in the BPP must be introduced to the judges at the beginning of the presentation. Only team members who have been introduced may answer the judges' questions even if they were not actually presenting.

#### **AT 6.7.6**

The Business Plan Presentation Finals will be live-streamed.

## AT 6.8 Feedback

### AT 6.8.1

After the finishing of all three stages feedback will be available to the teams upon request on the event site, in person, or virtually. If you drop out before stage three the respective teams will be informed about feedback possibilities.

### AT 6.9 Presentation equipment

The presentation equipment provided will be either a large-screen TV or a data projector. Available connections will be VGA and/or HDMI, depending on the equipment. If audio playback is required then the team has to provide the equipment (speakers). The presentation rooms will be made available for inspection and testing before the BPP event starts.

## AT 6.10 Business Plan Presentation Scoring

### AT 6.10.1

The scoring of the stages is subsequent. For example, if a team fails to participate in Stage 1, there is no possibility for that team to score points at a later stage. Teams that fail to attend their presentation at any stage within their assigned time period will receive zero points for this stage as well as all following stages.

### AT 6.10.2

The maximum score for the BPP event is 75 points.

### AT 6.10.3

The BPP will be evaluated according to the following categories:

Stage	Category	Points
Stage 1	Business Idea	5
	Content	5
	Demonstration and Delivery	5
	Do investors want to know more	5
Stage 2	Business Figures	5
	Content	5
	Demonstration and Delivery	5
	Are investors convinced of profitability	5
Stage 3	Novelty	5
	Content	10
	Finances	5
	Deep Dive Topic	10
	Demonstration and Delivery	5
	Structure	10
	Questions	10
	General Impression	5
	<b>Total</b>	<b>100</b>

### AT 6.10.4

The scoring for the non-finalist is calculated as follows:

$$\text{PRESENTATION SCORE} = 71 \cdot \frac{P_{\text{your}}}{P_{\text{min-F}}}$$

Where:

“P<sub>your</sub>” is the score awarded to your team by the business judges in the initial judging

“P<sub>min-F</sub>” is the lowest score awarded to any team participating in the finals in the initial judging

### AT 6.10.5

The scoring of the BPP finalists will vary from 75 to the highest non-finalist score and is scored immediately after the BPP finals by all judges.

## AT 7 Dynamic Events

### AT 7.1 Skid Pad

Rules 2023/D4.3 & D4.5 are void

#### AT 7.1.1 Skidpad Number of runs (Change of Rules 2023/D4.2.1)

Each team has four runs, driven by two drivers with two runs each.

#### AT 7.1.2 Skidpad Priority (Change of Rules 2023/D4.2.3)

Only the teams on their first run with their first driver will be given priority

#### AT 7.1.3 Skidpad Scoring (Change of Rules 2023/D4.4.3)

$$SKIDPAD\ SCORE = 71.5 \left( \frac{\left( \frac{T_{max}}{T_{team}} \right)^2 - 1}{0.5625} \right)$$

### AT 7.2 Acceleration Event

Rules 2023/D5.3 & D5.5 are void

#### AT 7.2.1 Acceleration Number of runs (Change of Rules 2023/D5.2.1)

Each team has four runs, driven by two drivers with two runs each.

#### AT 7.2.2 Acceleration Staging (Change of Rules 2023/D5.2.3)

The vehicle will be staged so that it breaks the timing beam after 0.30m of travel.

#### AT 7.2.3 Acceleration Priority (Change of Rules 2023/D5.2.4)

Only the teams on their first run with their first driver will be given priority

#### AT 7.2.4 Acceleration Scoring (Change of Rules 2023/D5.4.2)

$$ACCELERATION\ SCORE = 71.5 \left( \frac{\frac{T_{max}}{T_{team}} - 1}{0.5} \right)$$

### AT 7.3 Definition of a valid run

A valid run is registered by completing the required event distance, starting by breaking the first timing beam and ending by breaking the (final) timing beam (the required number of times).

*Note: DOO and OC penalties apply during the whole time the car travels under its own power - as per D9.1.4.*

*DNF per Rule D9.1.15 can only be registered during a run*

## **AT 7.4 Endurance Running Order (supplement to Rules2023/D7.3)**

### **AT 7.4.1 Running order goal - Supplement to D7.3.1**

The running order creation can deviate from a speed-based approach to accommodate organizational needs. Officials may allow or require cars to run out of order if needed to finish the endurance event within the given time limits.

### **AT 7.4.2 Ready-by Time**

Each team will be assigned a “ready-by” time in the published running order document. This is the earliest time the team may be required to run (i.e. enter the track).

### **AT 7.4.3 Out-of-order Running (OOO)**

Running out of order occurs when (1) all teams ranked before the team in the running order either ran or forfeit their run and (2) the teams’ Ready-By time has passed. Running OOO will be penalized according to D9.2.1

### **AT 7.4.4 Running at a later slot**

All teams running out of order are required to inform the officials of their intent to run at a later time before the last car in the running order has entered the track. Failure to do so will result in a DNA for the run. There is no guarantee that a later slot will actually be available within the given time constraints.

### **AT 7.4.5 OOO Running Order**

After the last car of the running order finishes endurance, all teams registered to run out of order are required to be in the endurance queue. Failure to do so will result in a DNA for the run. Teams will start according to the original running order

## **AT 7.5 Clarification of “Part” for Rules2023/IN12.1.6**

This rule will generally not be applied to “parts” such as minor amounts of tapes and adhesive film as well as insignificant parts broken off due to collisions with cones or the track. (e.g., small part of a front wing endplate)

## **AT 7.6 Endurance and Efficiency Scoring (Change of Rules2023/D7)**

25 points are awarded to every team that finishes endurance without DNF or DQ. The formula given in Rules 2023/D7.8.4 will be used to calculate the additional endurance points, however the number “225” will be substituted by “300”. The formula given in Rules 2023/D7.9.6 will be used to calculate the efficiency score, however the number “75” will be substituted for “100”

## **AT 7.7 Power and Voltage Violation Penalties (Change of Rules2023/D9.4.2)**

A violation will lead to penalties according to IN 12.1.4 group B. If data is not fully available for the endurance, this will result in a disqualification for the efficiency event.

# **AT 8 Cost and Manufacturing Event**

## **AT 8.1 Cost Report Rule Changes and Clarifications**

### **No Real Case (Change of Rules 2023/S2.2.5)**

There is no “real case” at the cost and manufacturing event at FS Austria

### **Hard Copy of Cost Report Documents (Change of Rules 2023/S2.3.6)**

Rules 2023 /S2.3.6 is void. Hard copies are not mandatory but can be brought and presented in any way at the team's discretion.

### **Detailed Bill of Material (Change of Rules 2023/S2.5.7)**

“Processes” are the necessary operations to produce the “part” out of the “material”, *create assemblies out of parts and assemble it to the vehicle.*

### **Costed Bill of Material (Change of Rules 2023/S2.6.3)**

The cost calculations must exclude research, development and capital expenditures for real estates (e.g. plant or development hours of the team). *Space requirements for machines may be included.*

### **Cost and Manufacturing Vehicle Condition (Change of Rules 2023/S2.9.1)**

Vehicles must be presented for cost and manufacturing judging in finished condition, fully assembled, complete and ready-to-race. *If dry tires are not mounted to the car, they must be presented during judging.*

## **AT 8.2 Cost and Manufacturing Scoring**

### **AT 8.2.1 Scoring Table (Change of Rules 2023/S2.10.1 and S2.10.2)**

The cost and manufacturing event will be evaluated on the categories specified in the table below. If items are missing from the BOM, points are deducted until zero points are scored for “Completeness of the BOM”.

Category	Points
Format and Accuracy of Documents	4
Knowledge of Documents and Vehicle	4
Completeness of the BOM	2
CBOM and DBOM discussion	40
Cost understanding	50
Total	100

### **AT 8.2.2 Number of Top Teams (Change of Rules 2023/S2.10.3)**

*An unlimited number of top teams* may be chosen to participate in the cost and manufacturing finals to determine the cost and manufacturing event winner. The cost and manufacturing finals will be held separately from the initial judging and teams will be informed about their participation during the event.

### **AT 8.2.3 Cost Finals Scoring**

Rules 2023/S 2.10.4 and Rules 2023/S2.10.5 are void

## **AT 9 Document History**

### **Version Changes**

Date	Version	comments/changes
2022-10-09	1.0.0	initial version
2022-12-07	1.1.0	Deadline changed for Event Program Team Page; Registration fees published AT 2.2.2 corrected, now includes top finishers of 2022