



# FORMULA STUDENT EAST COMPETITION HANDBOOK 2024

VER. 1.2

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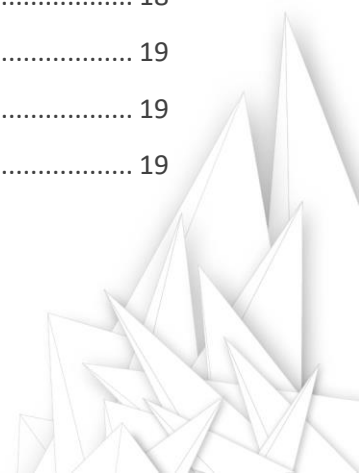




## TABLE OF CONTENTS

EA 1	GENERAL REGULATIONS.....	8
EA 1.1	Inquires and feedback.....	8
EA 1.2	FSEast rules.....	8
EA 1.3	Official communication .....	8
EA 1.4	Protest procedure .....	8
EA 1.5	Competition procedure .....	8
EA 1.6	Competition date and location.....	8
EA 1.7	Competition time .....	9
EA 1.8	Personal transport.....	9
EA 1.9	[EV only] Working in the pits.....	10
EA 1.10	[EV only] TS Accumulator rules .....	10
EA 1.11	[EV only] TSAC evening storage.....	10
EA 1.12	Campsite rules.....	10
EA 2	REGISTRATION.....	11
EA 2.1	Important dates.....	11
EA 2.2	Registration process .....	11
EA 2.3	Multiclass registration.....	12
EA 2.4	Registration Quiz .....	13
EA 2.5	Registration slots.....	14
EA 2.6	Invited teams.....	15
EA 2.7	Registration periods .....	16
EA 2.8	Registration fee .....	17
EA 2.9	Refund policy.....	18
EA 2.10	Registration after document submission deadlines.....	19
EA 2.11	Car number.....	19
EA 2.12	Faculty advisor.....	19

#FORMULASTUDENTEAST





EA 3	DATES & DOCUMENTS .....	20
EA 3.1	Deadlines .....	20
EA 3.2	Shared documents with other European FS events .....	21
EA 3.3	Late submission .....	21
EA 3.4	De-registration .....	22
EA 3.5	TMD & HIC .....	23
EA 3.6	ESOQ & ASRQ .....	23
EA 3.7	VSV & DVSV .....	23
EA 3.8	[EV only] Evening Storage Documentation (ESD) .....	23
EA 3.9	[CV only] Fuel Type Order (FTO) .....	23
EA 3.10	[DV only] Autonomous Design Report (ADR) .....	23
EA 3.11	Cost Report Documents (CRD) .....	23
EA 4	TECHNICAL REGULATIONS.....	24
EA 4.1	Driver equipment .....	24
EA 4.2	Fire extinguishers .....	24
EA 4.3	Data Logger.....	24
EA 4.4	[DV only] Remote Emergency System (RES).....	24
EA 4.5	[EV only] Accumulator Inspection .....	24
EA 4.6	Technical inspection sticker .....	24
EA 4.7	Scrutineering order .....	24
EA 4.8	Tires used during competition .....	25
EA 5	STATIC EVENTS .....	26
EA 5.1	Business Plan Presentation Event .....	26
EA 5.2	Cost and Manufacturing Event.....	27
EA 5.3	Engineering Design Event.....	28
EA 5.4	Static Finals.....	29
EA 6	DYNAMIC EVENTS.....	30
EA 6.1	Dynamic events general .....	30





EA 6.2	Available fuel types .....	30
EA 6.3	Flags.....	30
EA 6.4	[DV only] Start-up procedure for autonomous running.....	30
EA 6.5	[CV and EV only] Skidpad Event .....	30
EA 6.6	[DV only] Skidpad Event .....	31
EA 6.7	[CV and EV only] Acceleration Event.....	31
EA 6.8	[DV only] Acceleration Event.....	32
EA 6.9	[CV and EV only] Autocross Event .....	32
EA 6.10	[DV only] Autocross Event.....	32
EA 6.11	Endurance Event.....	33
EA 6.12	Efficiency Event .....	34
EA 6.13	Trackdrive Event.....	34





## CHANGELOG

Rule	Version	Change
	0.1	Initial release
EA 1.6.1	0.2	Added preliminary competition date
EA 2	0.2	Added registration information
EA 2.2	0.3	Added hyperlink for registration
EA 3.1	0.3	Added document submission deadlines
EA 3.3.10	0.3	New rule
EA 3.11	0.3	Clarified CRD format
EA 6.2.1	0.3	Added available fuel types
EA 1.6.1	0.4	Modified preliminary competition date
EA 1.6.2	0.4	Finalized competition location
EA 1.11.1	0.4	Added option to use trailer for TSAC storage
EA 3.8.1	0.4	Simplified ESD submission: universal template is available
EA 3.11.1	0.4	Further specified CRD format
EA 4.7	0.4	New rule about scrutineering order
EA 6.12.1	0.4	Specified energy density difference for different fuels
EA 6.13.2	0.4	New clarification rule about maximum fuel consumption
EA 1.6.1	1.0	Finalized competition date
EA 1.9.2	1.0	New rule about usage of power tools
EA 1.11.2	1.0	New rule about evening storage procedure
EA 1.11.3	1.0	New rule about evening storage procedure penalty
EA 2.8	1.0	The address of the association has changed
EA 3.1.1	1.0	Updated BPPEC deadline
EA 4.7.2	1.0	Added order of technical inspections
EA 4.8.1	1.0	New rule regarding tires used at competition
EA 5.3.6	1.0	New rule about number of Engineering Design Event judges
EA 6.1.4	1.0	New rule about dynamic passes
EA 3.1.1	1.1	Corrected BPPEC deadline
EA 1.11.3	1.2	Rephrased rule about evening storage procedure penalty
EA 6.10.4	1.2	Corrected naming in formula (no change in scoring)

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## ABBREVIATIONS

<b>FSEast</b>	Formula Student East 2024 organized by the Association of Automotive Engineers
<b>FS Rules</b>	Formula Student Rules 2024 published by Formula Student Germany
<b>ADR</b>	Autonomous Design Report
<b>BPPEC</b>	Business Plan Presentation Electronic Copy
<b>ESC</b>	Evening Storage Container
<b>ESD</b>	Evening Storage Documentation
<b>DV</b>	Driverless Vehicle
<b>DVSV</b>	Driverless Vehicle Status Video
<b>FTO</b>	Fuel Type Order
<b>HIC</b>	Health Insurance Certificate



## FSEAST DOMAINS

<b>fseast.eu</b>	FSEast official website
<b>quiz.fseat.eu</b>	FSEast quiz website
<b>login.fseast.eu</b>	FSEast team and participant management, documentation upload

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## EA 1 GENERAL REGULATIONS

### EA 1.1 INQUIRES AND FEEDBACK

EA 1.1.1 Inquiries and feedback must be raised via [rules@fseast.eu](mailto:rules@fseast.eu) (regarding FSEast rules) or [hello@fseast.eu](mailto:hello@fseast.eu) (regarding general event information).

### EA 1.2 FSEAST RULES

EA 1.2.1 FSEast will follow FS Rules. This document describes changes and additions to FS Rules. In case of any contradiction between this document and FS Rules, FSEast rules supersede FS Rules.

### EA 1.3 OFFICIAL COMMUNICATION

EA 1.3.1 All announcements made by the officials in person, via speakers on the venue or via the official Telegram channel shall be considered part of these rules.

### EA 1.4 PROTEST PROCEDURE

EA 1.4.1 To initiate a protest as per FS Rules A 3.7 teams must submit a formal protest to [rules@fseast.eu](mailto:rules@fseast.eu) within the announced protest deadline.

EA 1.4.2 If no explicit protest deadline is announced, the deadline is 24h after the respective incident.

EA 1.4.3 Officials reserve the right to postpone protest review if the review process would likely jeopardize the start time of the award ceremony. Final results will be withheld until all protests are closed.

### EA 1.5 COMPETITION PROCEDURE

EA 1.5.1 In addition to CV (including HY) and EV FSEast is available in DV class.

EA 1.5.2 The achievable points in each class are listed in Table 2.

EA 1.5.3 FS Rules A 1.2.6 and A 1.2.7 are void.

### EA 1.6 COMPETITION DATE AND LOCATION

EA 1.6.1 The competition will be held from 2024-07-28 to 2024-08-03.

EA 1.6.2 The competition will be held at ZalaZONE Proving Ground, Zalaegerszeg, Hungary.







## EA 1.7 COMPETITION TIME

EA 1.7.1 The competition date/time format is “YYYY-MM-DD hh:mm” in 24 hours format.

EA 1.7.2 FSEast official time follows Central European (Summer) Time based on the table below:

From	Till	Time zone
2023-10-29 00:00	2024-03-31 02:00	CET
2024-03-31 03:00	2024-10-27 03:00	CEST

Table 1: Official competition time

## EA 1.8 PERSONAL TRANSPORT

EA 1.8.1 Use of any small vehicles on the competition site, either self-propelled or not, is prohibited.

	CV & EV	DV
<b>Static Events:</b>		
Business Plan Presentation	75 points	75 points
Cost and Manufacturing	100 points	100 points
Engineering Design	150 points	250 points
<b>Dynamic Events:</b>		
Skidpad	75 points	100 points
Acceleration	75 points	100 points
Autocross	100 points	125 points
Endurance	325 points	-
Efficiency	100 points	-
Trackdrive	-	250 points
<b>Overall</b>	<b>1000 points</b>	<b>1000 points</b>

Table 2: Maximum points awarded



## EA 1.9 [EV ONLY] WORKING IN THE PITS

- EA 1.9.1 TS cannot be activated in the pits without prior approval of an electrical scrutineer. The approval must be asked for by the ESO who will oversee the work done during TS activation. He/She must be able to clearly explain the goal and necessity of the activation, and the details of the planned work from start to finish.
- EA 1.9.2 Power tools (angle grinders, drills, etc.) can only be used in the dedicated welding area.

## EA 1.10 [EV ONLY] TS ACCUMULATOR RULES

- EA 1.10.1 Whenever the TSAC is installed in the car in the pits, the car shall be on the ground with all wheels mounted and must be easily removable from the pits. Exemption is granted in cases when the team performs approved work on the TS in the pits as per EA 1.9.1.
- EA 1.10.2 Whenever the TSAC is stored in the pits outside of the car, it must be stored on the TSAC Hand Cart, with the Hand Cart stationed by the unobstructed pit exit, with the handle facing outside.
- EA 1.10.3 TS Accumulators must be left to rest for 60 minutes after charging. A resting area will be available near the charging area for this purpose. The AMS must be live and monitored by at least one team member during the resting period.

## EA 1.11 [EV ONLY] TSAC EVENING STORAGE

- EA 1.11.1 Storing the TSAC in the pits during the evening is prohibited. Teams must choose one of the two following options:

**Option A)** The TSAC will be stored in open-air in front of the team's pit. The team must bring their own weatherproof container (ESC) to protect the TSAC (on or off the TSAC Hand Cart). The requirements of this container will be available in a separate document on the FSEast website. ESD must be submitted if the team chooses this option.

**Option B)** Teams can store their TSAC in a 20-foot weatherproof container provided by the officials along with up to 7 other teams. A rental fee applies if the team chooses this option. This fee will be published later and must be paid at Event Control in cash on the first day of the event.

**Option C)** Teams can store their TSAC in their own street-legal trailer used for transporting the race car or racing equipment on public roads.

- EA 1.11.2 All trailers, ESCs and rented containers will be sealed by a scrutineer or official during the evenings or before a team leaves the event site.
- EA 1.11.3 If a team stores or retrieves their accumulator without a scrutineer or official's registration, they incur a 40-point penalty. Not storing it leads to disqualification.

## EA 1.12 CAMPSITE RULES

- EA 1.12.1 Playing excessively loud music between midnight and 05:45 is prohibited.



## EA 2 REGISTRATION

### EA 2.1 IMPORTANT DATES

Major dates:	From:	To:
Team Registration	2024-01-12 08:00	2024-01-25 10:59
Registration Quiz	2024-01-26 11:00	2024-01-26 16:59
Quiz Protest Period	2024-01-26 17:00	2024-01-26 23:59
Registration Periods:	From:	To:
Registration Period 1	2024-01-26 11:00	2024-01-28 23:59
Registration Period 2	2024-01-29 00:00	2024-01-30 23:59
Registration Period 3	2024-01-31 00:00	2024-05-29 19:59

Table 3: Important dates for registration.

### EA 2.2 REGISTRATION PROCESS

1. The team captain must register himself/herself.
2. The team captain must register the team (not the individual team members).
3. Review the confirmation email sent after completing team registration.

Registration is possible on [login.fseast.eu](http://login.fseast.eu).

The team ID retrieved from the Formula Student Germany website is required for team registration. Hence, teams must be registered on the Formula Student Germany website.

Individual team members must register after successfully completing the registration quiz. They should join the team created by the team captain. Every team member must complete this process until the TMD deadline.



## EA 2.3 MULTICLASS REGISTRATION

- EA 2.3.1 It is possible for each team to compete in DV class in addition to CV or EV class with the same vehicle.
- EA 2.3.2 Multiclass teams are treated as separate entities for different classes in dynamic events, scoring and results.
- EA 2.3.3 Multiclass teams will participate once in the initial judging of each static event. It is possible that they will participate in two static finals for each discipline where they qualify to the final in both classes.
- EA 2.3.4 Multiclass teams must register one team, and mark on the registration page that they intend to compete as CV+DV or EV+DV.
- EA 2.3.5 Multiclass teams must complete the quiz in both classes. They must qualify in each class separately.
- EA 2.3.6 Multiclass teams must pay the registration fee for both classes.
- EA 2.3.7 Teams that do not pass the DV technical inspection may not participate in DV dynamic events.
- EA 2.3.8 If a multiclass team fails only on the DV technical inspection, and the scrutineers assess that the AS can be safely disabled, the team may participate in non-DV dynamic events.
- EA 2.3.9 Configuration change on the car after technical inspection is prohibited.
- EA 2.3.10 Multiclass teams acknowledge that the schedule may not be convenient.

## EA 2.4 REGISTRATION QUIZ

EA 2.4.1 Qualification to the competition will take place in form of a quiz. The quiz will be available on the FSEast quiz website.

EA 2.4.2 The team captain and only the team captain must be logged in to take the quiz. Teams who are registered in one class only must leave the *Driverless?* checkbox **unchecked**, even if they are registered in the DV class.

The login process for multiclass team are as follows:

1. Log in with the *Driverless?* checkbox **unchecked**. This will take you to the CV/EV quiz.
2. From **another device**, log in with the same user, with the *Driverless?* checkbox **checked**. This will take you to the DV quiz.
3. Wait for the quiz to start.
4. Launch the quiz and submit your answers on both devices.

EA 2.4.3 The quiz starts at 2024-01-26 11:00.

EA 2.4.4 Each class has its own set of quiz questions. The questions can be class specific, or they can overlap with questions from other classes. The quiz will consist of single-choice and multiple-choice questions. All questions will be revealed at the same time. The quiz must be submitted once only after all questions have been answered.

EA 2.4.5 Teams will be ranked based on the time they took to submit the quiz. Each wrong answer adds 120 seconds to the time. Multiple-choice questions are considered correct if all correct answers and only correct answers are selected.



## EA 2.5 REGISTRATION SLOTS

EA 2.5.1 Teams registering to FSEast are divided into regions based on their home country. There are a limited number of registration slots dedicated to each region in each class.

**Region A:** Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, United Kingdom, Vatican City State

**Region B:** Countries with their capital located in Standard Time Zones -1 to -12, excluding countries in region A and C.

**Region C:** Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, North Macedonia, Georgia, Greece, Hungary, Kazakhstan, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine.

**Region D:** Countries with their capital located in Standard Time Zones 0 to +12, excluding countries in region A and C.

EA 2.5.2 The number of registration slots available for each class and region are listed in Table 4.

Region	CV	EV	DV
Region A	2	8	5
Region B	2	4	2
Region C	3	8	4
Region D	2	4	1
List ABCD	9	18	12
<b>Total</b>	<b>18</b>	<b>42</b>	<b>24</b>

Table 4: Registration slots available.

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## EA 2.6 INVITED TEAMS

EA 2.6.1 Based on their results at FS East 2023 or FS Easter 2023 some teams are invited to FS East 2024. These teams do not need to participate in the registration quiz.

- The three highest ranked teams of each class of FS East 2023.
- The highest ranked Hungarian team of each class of FS East 2023.
- The highest ranked team of FS Easter 2023.
- The winner of the Sportsmanship Award of FS East 2023. This team is exempt from paying the registration fee.

EA 2.6.2 The list of dedicated slots as per EA 2.6.1 are the following:

### List ABCD – CV:

1. Race UP Combustion – TOP 3
2. UniBo Motorsport – TOP 3
3. Zips Racing – TOP 3
4. Arrabona Racing Team – TOP HUN

### List ABCD – EV:

1. TU Graz Racing Team – TOP 3
2. Rennstall Esslingen – TOP 3
3. e-ignition Hamburg e.V. – TOP 3
4. BME Formula Racing Team – TOP HUN
5. Joanneum Racing Graz – TOP Easter
6. TU Wien Racing – Sportsmanship Award – no registration fee

### List ABCD – DV:

1. Starkstrom Augsburg Driverless – TOP 3
2. e-ignition Hamburg e.V. – TOP 3
3. Elbflorace Formula Student Team TU Dresden e.V. – TOP 3
4. BME Formula Racing Team – TOP HUN

EA 2.6.3 Pre-registration is open for teams listed above until 2024-01-25 10:59. To confirm the pre-registered status the team must send an email to [hello@fseast.eu](mailto:hello@fseast.eu) with the subject "TEAM NAME - Pre-registration confirmation" until the deadline. Unless exempt from paying the registration fee, the pre-registration will be accepted if the registration fee is paid until 2024-01-25 23:59.





## EA 2.7 REGISTRATION PERIODS

EA 2.7.1 Registration for the event following the quiz is divided into 3 periods.

### Registration period 1:

**Stage 1:** Teams are registered on their own dedicated list based on their region (e.g., an EV team from Region A will get one of the 8 dedicated slots).

**Stage 2:** If there are no more dedicated slots remaining, the joint list (List ABCD CV/EV/DV) will be filled.

**Stage 3:** When the joint list gets full, the remaining teams will be placed on the waiting list.

**Registration period 2:** Should there be any remaining regional dedicated slots, these empty slots will be filled with teams on the waiting list.

**Registration period 3:** Any remaining slots will be filled with teams from other classes' waiting lists at the discretion of the officials. (e.g., unused CV slots may be replaced with EV and DV slots)





## EA 2.8 REGISTRATION FEE

EA 2.8.1 Qualified teams must pay the registration fee listed below, which does not include lodging.

- CV: 2100 EUR + VAT (+27%)
- EV: 2250 EUR + VAT (+27%)
- DV: 2500 EUR + VAT (+27%)

EA 2.8.2 At all times throughout the registration periods the first 5 CV teams, the first 9 EV teams and the first 6 DV teams on the waiting list must pay a part of the registration fee, as listed below.

- CV: 600 EUR + VAT (+27%)
- EV: 700 EUR + VAT (+27%)
- DV: 900 EUR + VAT (+27%)

When a team from the waiting list qualifies for a slot, they must pay the remaining amount of the registration fee.

- CV: further 1500 EUR + VAT (+27%)
- EV: further 1550 EUR + VAT (+27%)
- DV: further 1600 EUR + VAT (+27%)

EA 2.8.3 Teams must transfer the registration fee within 2 workdays after the quiz results have been finalized, or they have been notified by FS East officials. A payment receipt provided by the account holder's bank should be submitted to [hello@fseast.eu](mailto:hello@fseast.eu) as a confirmation.

EA 2.8.4 Teams who miss the payment deadline will be moved to the end of the waiting list.

EA 2.8.5 VAT-free payment is only acceptable from the following teams. Teams who don't fulfill any of the criteria must transfer the 27% VAT as well.

- Teams with a valid EU VAT number. Must be filled in correctly in the team profile.
- Teams who are located outside of the European Union, thus do not have an EU VAT number, but do have a VAT number and its validity can be proven by sending us a certification electronically. We will issue the invoice with a net amount of registration fee. Contact your finance department about a certification and send it to us via email with your request for a proforma invoice (if you need a proforma). If your country has a public website which contains authenticated data of organizations/companies and it includes VAT numbers as well, a website link can be sufficient as a certification.

EA 2.8.6 Teams without a VAT number and teams located in Hungary must transfer the 27% VAT as well.



EA 2.8.7 Digital invoices are issued upon successful payments. Teams can request a proforma at [hello@fseast.eu](mailto:hello@fseast.eu).

EA 2.8.8 There is no limit to the number of team members.

### **Banking information**

Account Holder: Association of Automotive Engineers

Address: 1037 Budapest, Montevideo utca 3/B., HUNGARY

Account Number: 10400511-50526983-78711011

IBAN: HU15 1040 0511 5052 6983 7871 1011

BIC (SWIFT) Code: OKHBHUHB

Bank name: K&H Bank Zrt.

Bank address: H-1095, 9th Lechner Ödön fasor, Budapest, HUNGARY

Reference: FS East registration fee, [Team Name]

## **EA 2.9 REFUND POLICY**

EA 2.9.1 FS East 2024 may be cancelled – not exclusively – for the following reasons:

- Government restrictions are applied for events above 1500 participants – FS East reserves the right to limit the maximum number of participants per team.
- At least 70% of qualified teams are not able to travel to the competition due to border crossing restrictions.
- At least 70% of qualified teams overall have withdrawn for any reason.

EA 2.9.2 If FS East 2024 gets cancelled, a portion of the registration fee will be refunded based on the date of cancellation.

- Cancelled before 2024-03-31: 90% refund
- Cancelled between 2024-04-01 and 2024-05-31: 60% refund
- Cancelled after 2024-06-01: 0% refund

EA 2.9.3 No refund is granted if a qualified team withdraws from the competition for any reason.

EA 2.9.4 The partial registration fee for teams on the waiting list (see EA 2.8.2) may get refunded, if the team does not participate at the event, and they do not make use of any services provided by FS East officials (e.g., document review).



**EA 2.10 REGISTRATION AFTER DOCUMENT SUBMISSION DEADLINES**

EA 2.10.1 Teams must submit all overdue documents within 24 hours after the officials have confirmed that the registration fee has been received.

EA 2.10.2 Standard late submission penalties apply after the 24 hours period has passed.

**EA 2.11 CAR NUMBER**

EA 2.11.1 Teams can indicate their desired car number during registration. The following system will be applied to distinguish classes and drivetrains:

- 100 – 199: CV class
- 200 – 299: EV class
- 300 – 399: CV based DV class
- 400 – 499: EV based DV class
- 500 – 599: CV+DV multiclass
- 600 – 699: EV+DV multiclass
- 900 – 999: Alumni Cup

**EA 2.12 FACULTY ADVISOR**

EA 2.12.1 Faculty advisors are not mandatory for FS East 2024. Teams may be accompanied by any number of faculty advisors. All faculty advisors must be registered as such.



## EA 3 DATES & DOCUMENTS

### EA 3.1 DEADLINES

EA 3.1.1 The following documents must be submitted to FSEast by their respective deadline. Documents not listed in this table are not required.

Document	CV	EV	DV	Deadline
ASF			●	2024-03-29 13:00
ESF		●	○ <sup>1</sup>	2024-03-29 13:00
HSF	○ <sup>2</sup>		○ <sup>3</sup>	2024-03-29 13:00
SES & SE3D	●	●	●	2024-03-15 13:00
IAD	●	●	●	2024-03-15 13:00
TMD & HIC	●	●	●	2024-07-02 23:59
EDR	●	●	●	2024-06-21 23:59
ADR			●	2024-06-21 23:59
DSS	●	●	●	2024-06-21 23:59
CRD	●	●	●	2024-06-28 23:59
BPPV	●	●	●	2024-07-19 23:59
VSV	●	●		2024-06-16 23:59
DVSV			●	2024-06-16 23:59
ESD		●	○ <sup>1</sup>	2024-06-02 23:59
FTO	●		○ <sup>4</sup>	2024-05-01 23:59
BPPEC	●	●	●	2024-07-28 20:00

Table 5: Required documents

<sup>1</sup>Mandatory for teams with DV cars with EV powertrain.

<sup>2</sup>Mandatory for teams with Hybrid CV cars.

<sup>3</sup>Mandatory for teams with DV cars with CV-HY powertrain.

<sup>4</sup>Mandatory for teams with DV cars with CV powertrain.

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## EA 3.2 SHARED DOCUMENTS WITH OTHER EUROPEAN FS EVENTS

EA 3.2.1 ASF, ESF, SES & SE3D and IAD must be submitted through the FSG website. Teams who will participate at FSEast, but not FSG, also need to register their team on the FSG website. Registration for the end of the FSG waiting list is sufficient and no payment to FSG is required.

## EA 3.3 LATE SUBMISSION

EA 3.3.1 FS Rules A 5.3.3 and A 5.4.1 are void. See rules below for details.

EA 3.3.2 Penalty points are applied for each started 24 hours period after the submission deadline. See Table 6 for the daily penalty points for each document.

EA 3.3.3 Penalties applied due to late submission of EDR, ADR, DSS, CRD, BPPV and BPPEC will be deducted from the team's final score of the respective static event(s). The minimum achievable final score in each static event is 0.

EA 3.3.4 If a tie occurs in TOP3 positions due to EA 3.3.3, the team with the least penalty points will be ranked in the higher place. Teams in tie out of TOP3 positions will be ranked in the same place.

EA 3.3.5 The maximum possible sum of all penalty points applied due to late submission of the ASF, ESF, HSF, SES & SE3D, IAD, VSV, DVSV and FTO is the total achievable points in all dynamic events. Penalty points applied for the late submission of these documents are deducted from the team's overall score, up to the team's achieved final points for all dynamic events.

EA 3.3.6 The maximum penalty points applied for late submission of the ESD is 50 points, which are deducted from the team's overall score.

EA 3.3.7 Penalties applied for the late submission of TMD and HIC are deducted from the overall score of the team.

EA 3.3.8 Submission penalties are applied separately in all classes the team competes where the respective document is required.

EA 3.3.9 [CV only] Teams who opt out of using the hybrid system will not receive any penalty points for the HSF. This choice will be recorded in the scrutineering sheet and is irrevocable.

EA 3.3.10 The last possible submission time for EDR, ADR, DSS and CRD is 2024-07-12 23:59. After this time the document will not be rejected, and corrections will not be accepted anymore. Any flaws of the document will be penalized with a minimum of 5 points and a maximum of the team's total score of the respective static event. Penalty points will be deducted from the team's final score of the respective static event.



## EA 3.4 DE-REGISTRATION

- EA 3.4.1 FS Rules A 5.4.2 is void. See rules below for details.
- EA 3.4.2 Teams who fail to submit a VSV, DVSV, ESF, ASF, IAD or SES & SE3D until 24 hours after the respective deadline will be de-registered from the competition.
- EA 3.4.3 If the corrected version of VSV, DVSV, ESF, ASF, IAD or SES & SE3D does not completely contain all requested corrections, the team will be de-registered from the competition.
- EA 3.4.4 FS Rules A 5.5 applies to the process of re-registration, except that the “24 hours after notification” deadline is raised to 168 hours in case of VSV and DVSV. The deadline remains the same for all other documents.

Document	Daily penalty points
ASF	10
ESF	10
HSF	10
SES & SE3D	10
IAD	10
TMD & HIC	5
EDR	5
ADR	5
DSS	5
CRD	5
PV	5
VSV	10
DVSV	10
ESD	5
FTO	5
BPPEC	5

Table 6: Late submission penalties

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## **EA 3.5 TMD & HIC**

- EA 3.5.1 The team captain must provide a list of participating team members with their personal information on the FSEast team management website. Completion of this process is considered as TMD submission.
- EA 3.5.2 A proof of valid health insurance in Hungary at the time of the competition (HIC) must be submitted for each participating team member.

## **EA 3.6 ESOQ & ASRQ**

- EA 3.6.1 FS Rules A 4.3.8 and A 4.4.7 are void. Neither ESOQ nor ASRQ are required.
- EA 3.6.2 ESOs and ASRs must produce a signed liability statement upon onsite registration.

## **EA 3.7 VSV & DVSV**

- EA 3.7.1 DVSV is defined as a VSV which complies with FS Rules A 5.6.2 with [DC only] remarks considered.
- EA 3.7.2 VSV and DVSV must be uploaded to YouTube as a public or non-listed conventional (not Shorts) video. The submitted file must only include the link of the video.

## **EA 3.8 [EV ONLY] EVENING STORAGE DOCUMENTATION (ESD)**

- EA 3.8.1 Teams must submit the ESD using the ESD Template available on the competition website.

## **EA 3.9 [CV ONLY] FUEL TYPE ORDER (FTO)**

- EA 3.9.1 Teams must indicate their fuel choice on the FSEast team management website. Completing this process is considered as FTO submission.

## **EA 3.10 [DV ONLY] AUTONOMOUS DESIGN REPORT (ADR)**

- EA 3.10.1 The ADR should contain a description of the autonomous system with a review and derivation of the team's design objectives. Any information to scope, explain or highlight design features, concepts, methods or objectives to express the value and performance of the autonomous system to the judges shall be included at the team's discretion.
- EA 3.10.2 The ADR must not exceed five A4 pages of content (text, which may include pictures and graphs).
- EA 3.10.3 Any portions of the ADR that exceed five A4 pages of content will not be evaluated.
- EA 3.10.4 The ADR must be written as a scientific paper.

## **EA 3.11 COST REPORT DOCUMENTS (CRD)**

- EA 3.11.1 The CRD must be submitted as a single .zip file. The file must include the BOM (including DBOM and CBOM), the Cost Explanation File and the Supporting Material. All zipped files must be in PDF format. The BOM must be exported from the FSG BOM tool using the Formula Student East template.



## EA 4 TECHNICAL REGULATIONS

### EA 4.1 DRIVER EQUIPMENT

EA 4.1.1 The underwear (long pants and long sleeve t-shirt) and socks must be certified to one of the following standards and labeled as such: SFI Spec 3.3, FIA Standard 8856-2000 or FIA Standard 8856-2018.

### EA 4.2 FIRE EXTINGUISHERS

EA 4.2.1 [EV only] One of the fire extinguishers required by FS Rules T13.4 may be replaced by a fire extinguisher designated to contain lithium battery fires. This fire extinguisher must accompany the TSAC wherever it is moved (excluding the dynamic area), either in the vehicle or on the Hand Cart.

EA 4.2.2 Fighting a TSAC fire is permitted only until imminent danger to human life is abated.

### EA 4.3 DATA LOGGER

EA 4.3.1 Data Logger specifications will be available on the FSEast website. These specifications may differ from the ones listed in FS Rules EV 4.6 and supersede them in case of conflict.

EA 4.3.2 [CV only] CV vehicles will not be equipped with a Data Logger.

### EA 4.4 [DV ONLY] REMOTE EMERGENCY SYSTEM (RES)

EA 4.4.1 The RES that has to be used for the competition is a GF2000i-codec/T53R98 combination from GrossFunk GmbH.

EA 4.4.2 No CAN logging is required. Proper configuration and CAN communication with RES is the team's responsibility. No rerun is granted for RES failure.

### EA 4.5 [EV ONLY] ACCUMULATOR INSPECTION

EA 4.5.1 No official temperature logging device will be installed at FSEast.

### EA 4.6 TECHNICAL INSPECTION STICKER

EA 4.6.1 A 100x180 mm (WxH) spot shall be reserved on the upward-facing bodywork between the front bulkhead and the front roll hoop.

### EA 4.7 SCRUTINEERING ORDER

EA 4.7.1 The order for the initial scrutineering will be determined by the organizers. The following factors will be taken into account:

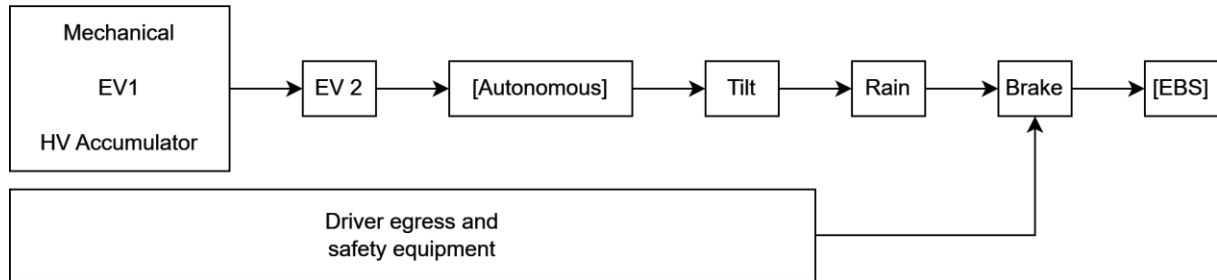
- Class, static schedule
- VSV submitted before the deadline
- Quiz results
- Eligibility for priority scrutineering (e.g. FSEaster)





EA 4.7.2 Technical inspections must be completed in the order shown in Figure 1.

### EV powertrain



### CV powertrain

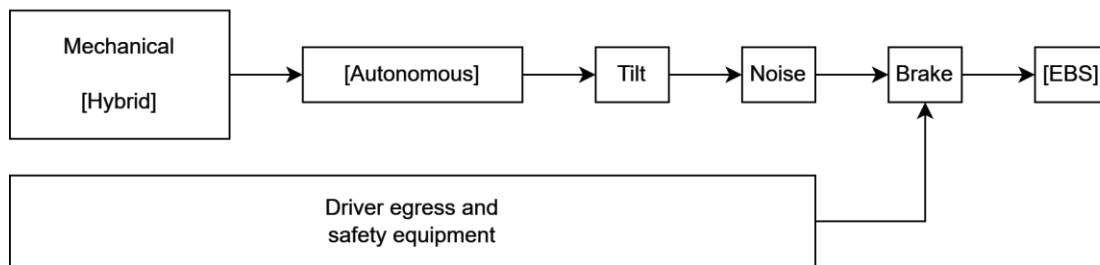


Figure 1: Scrutineering steps.

## EA 4.8 TIRES USED DURING COMPETITION

EA 4.8.1 All wheels and tires teams intend to use during competition must be presented to scrutineers at mechanical scrutineering.

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## EA 5 STATIC EVENTS

### EA 5.1 BUSINESS PLAN PRESENTATION EVENT

- EA 5.1.1 Teams cannot submit the same business plan that they presented in a previous FSEast Event, regardless of class. (E.g., 2023’s DV business plan cannot be an EV business plan in 2024.)
- EA 5.1.2 Teams must submit the final version of their presentation (BPPEC) no later than the given deadline. Teams cannot change their presentation (except minor changes, like correcting typos) for the initial judging after their electronic copy is submitted.
- EA 5.1.3 BPPV must be uploaded to YouTube as a public or non-listed conventional (not Shorts) video. The submitted file must only include the link of the video.
- EA 5.1.4 The BPPV should be considered as the first impression of the business idea and has to contain the relevant investment figures **and the business idea itself**.
- EA 5.1.5 The BPP will be evaluated on the categories specified below.

Category	Points
Pitch Video	5
Content	25
Finances	20
Deep Dive Topic	10
Demonstration	5
Structure	5
Delivery	10
Q&A	15
General Impression	5
<b>Total</b>	<b>100</b>

Table 7: BPP evaluation categories

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- EA 5.1.6 If one or more team members read the presentation, the maximum achievable score in the Delivery category for the team is 5 points.
- EA 5.1.7 The information that the team shares in the Q&A session will only receive points in the Q&A category, not in other categories.
- EA 5.1.8 If the business proposition (what kind of partnership the team is looking for) is not clear, the maximum achievable score in the Finances category is 5 points.
- EA 5.1.9 Teams have the opportunity to use supporting materials (e.g., handouts, mockups, etc.). If a team chooses to use such materials, these materials will be evaluated only to the extent it is used/presented during the presentation and/or the Q&A. All supporting materials must be collected after the Q&A.
- EA 5.1.10 Finalist teams will receive an additional Deep Dive Topic on the finalists' briefing that they should incorporate into their presentation on the Finals.
- EA 5.1.11 If there are 0 finalists in a class, the 70 in FS Rules S 1.4.6 is replaced by 75.

## EA 5.2 COST AND MANUFACTURING EVENT

- EA 5.2.1 A DBOM for the Suspension system must be submitted.
- EA 5.2.2 A CBOM for the Engine and Drivetrain system must be submitted.
- EA 5.2.3 The scoring of non-finalists is calculated as followed:

$$COST\_SCORE = \left( \frac{P_{team}}{P_{max}} \right) * (100 - n)$$

Where:

$P_{team}$  is the score awarded to the team.

$P_{max}$  is the highest score awarded to any team not participating in the finals.

$n$  is the number of finalists in the class (can be 0).

- EA 5.2.4 The scoring of finalists is calculated as followed:

$$COST\_SCORE = 100 - (n - 1)$$

Where:

$n$  is the place achieved in the Cost and Manufacturing Event final.





## EA 5.3 ENGINEERING DESIGN EVENT

- EA 5.3.1 FS Rules S 3.1.3 does not apply for CV and EV class.
- EA 5.3.2 The EDR must only consist of A4 pages.
- EA 5.3.3 Evidence of information mentioned in the ADR should be brought to the competition and be available, on request, for review by the judges.
- EA 5.3.4 FSEast specific DSS template will be available on the FSEast website. This template must be used for submission of the DSS.
- EA 5.3.5 The maximum scores listed in Table 8 apply for the Engineering Design Event.

Category	CV & EV Points	DV Points
Overall Vehicle Concept	30	40
Team & Project Management	20	20
Chassis & Ergonomics	20	20
Vehicle Dynamics & Suspension	20	20
IC Powertrain / Electric Powertrain	20	20
Electronics & Control System	20	20
Aerodynamics	20	20
Perception	-	30
Mapping and Motion Planning	-	25
Trajectory Tracking	-	20
Actuators	-	15
<b>Total</b>	<b>150</b>	<b>250</b>

Table 8: Maximum scores in Engineering Design Event

- EA 5.3.6 Each category will be judged by a maximum of two judges.





## EA 5.4 STATIC FINALS

- EA 5.4.1 Finalists will be notified in-person.
- EA 5.4.2 Finalists must attend a Finalists' briefing where officials will explain the procedure of the final. Finalists will be informed of the time and location of this briefing. The number of team members who may attend the briefing may be limited. Failure to attend the briefing will result in disqualification from the final.
- EA 5.4.3 The Engineering Design and Cost and Manufacturing finals are not public.
- EA 5.4.4 Maximum one team member per team may enter the judging area of the Engineering Design and Cost and Manufacturing finals for photography purposes. This team member must wear the *Media* identification which will be distributed during the finalists' briefing and must be returned to the officials after the final has ended.
- EA 5.4.5 The team's photographer must not speak to anyone in the judging area except officials (excluding judges). Violation of this rule will result in disqualification of the photographer's team from the final.
- EA 5.4.6 Nobody (except presenting team members) may enter the judging area (the area between the stage and the judges) of the Business Plan finals.



## EA 6 DYNAMIC EVENTS

### EA 6.1 DYNAMIC EVENTS GENERAL

- EA 6.1.1 [CV and EV only] In total, a minimum of four and a maximum of six drivers are allowed for each team.
- EA 6.1.2 [DV only] In total, a minimum of one and a maximum of two drivers are allowed for each team for the purpose of the Brake Test.
- EA 6.1.3 All team members in the dynamic area must wear long pants (trousers reaching to the foot) and closed shoes.
- EA 6.1.4 Instead of vests, dynamic passes are going to be rubber wristbands. In case of parallel technical inspections, an extra set of wristbands are available from scrutineers.

### EA 6.2 AVAILABLE FUEL TYPES

- EA 6.2.1 The available fuel types will be RON 100 petrol and MOL Racing Fuel DRX. Specification of available fuel types will be available on the competition website.
- EA 6.2.2 Measuring ethanol content during the competition is prohibited.

### EA 6.3 FLAGS

- EA 6.3.1 In addition, and partially replacing FS Rules D 2.1.9, the following flag signals must be obeyed.
- EA 6.3.2 STATIONARY YELLOW FLAG – Danger, the driver must slow down, something has happened beyond the marshal post, no overtaking unless directed by the track marshals.
- EA 6.3.3 WAVED YELLOW FLAG – EA 6.3.2 + the driver must be prepared for a sudden stop.
- EA 6.3.4 WAVED YELLOW FLAG + STOP SIGN – The driver must immediately stop and perform an egress. Reserved for burning vehicles.

### EA 6.4 [DV ONLY] START-UP PROCEDURE FOR AUTONOMOUS RUNNING

- EA 6.4.1 If the vehicle does not enter “ASReady” state within **3 minutes** after being staged, the team may be sent back to the preparation area by the officials. In this case any priority is lost.

### EA 6.5 [CV AND EV ONLY] SKIDPAD EVENT

- EA 6.5.1 Each team has four runs, driven by two drivers with two runs each.
- EA 6.5.2 Each driver has the option to make a second run immediately after their first run.
- EA 6.5.3 3.5 points are awarded to every team that finishes at least one run without DNF or DQ.
- EA 6.5.4 If a team’s run time including penalties is below  $T_{max}$ , additional points based on the following formula are given:



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

$T_{team}$  is the team's best run time including penalties.

$T_{max}$  is 1.25 times the time of the fastest vehicle including penalties.

**EA 6.6 [DV ONLY] SKIDPAD EVENT**

EA 6.6.1 25 points are awarded to every team that finishes at least one run without DNF or DQ.

EA 6.6.2 If a team's run time including penalties is below  $T_{max}$ , additional points based on the following formula are given:

$$DV\_SKIDPAD\_SCORE = 75 \left( \frac{\left( \frac{T_{max}}{T_{team}} \right)^2 - 1}{1.25} \right)$$

$T_{team}$  is the team's best run time including penalties.

$T_{max}$  is 1.5 times the time of the fastest vehicle including penalties.

**EA 6.7 [CV AND EV ONLY] ACCELERATION EVENT**

EA 6.7.1 Each team has four runs, driven by two drivers with two runs each.

EA 6.7.2 Each driver has the option to make a second run immediately after their first run.

EA 6.7.3 3.5 points are awarded to every team that finishes at least one run without DNF or DQ.







EA 6.7.4 If a team's run time including penalties is below  $T_{max}$ , additional points based on the following formula are given:

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

$T_{team}$  is the team's best run time including penalties.

$T_{max}$  is 1.5 times the time of the fastest vehicle including penalties.

## EA 6.8 [DV ONLY] ACCELERATION EVENT

EA 6.8.1 25 points are awarded to every team that finishes at least one run without DNF or DQ.

EA 6.8.2 If a team's run time including penalties is below  $T_{max}$ , additional points based on the following formula are given:

$$DV\_ACCELERATION\_SCORE = 75 \left( \frac{T_{max}}{T_{team}} - 1 \right)$$

$T_{team}$  is the team's best run time including penalties.

$T_{max}$  is 2 times the time of the fastest vehicle including penalties.

## EA 6.9 [CV AND EV ONLY] AUTOCROSS EVENT

EA 6.9.1 5 points are awarded to every team that finishes at least one run without DNF or DQ.

EA 6.9.2 If a team's run time including penalties is below  $T_{max}$ , additional points based on the following formula are given:

$$AUTOCROSS\_SCORE = 95 \left( \frac{\frac{T_{max}}{T_{team}} - 1}{0.25} \right)$$

$T_{team}$  is the team's best run time including penalties.

$T_{max}$  is 1.25 times the time of the fastest vehicle including penalties.

## EA 6.10 [DV ONLY] AUTOCROSS EVENT

EA 6.10.1 FS Rules D 6.4 apply with the exception(s) detailed below.

EA 6.10.2 Each team has a minimum of two, a maximum of four runs consisting of one single lap. The exact number of runs available will be uniform among teams and will be announced before the start of the event.

EA 6.10.3 25 points are awarded to every team that finishes at least one run without DNF or DQ.





- EA 6.10.4 If a team's run time including penalties is below  $T_{max}$ , additional points based on the following formula are given:

$$DV\_AUTOCROSS\_SCORE = 100 \left( \frac{T_{max} - T_{team}}{T_{max} - T_{min}} \right)$$

$T_{team}$  is the team's best run time including penalties.

$T_{max}$  is the time for driving the lap with 6 m/s.

$T_{min}$  is the fastest  $T_{team}$  of all teams.

## EA 6.11 ENDURANCE EVENT

- EA 6.11.1 D 7.1.2 is void.
- EA 6.11.2 There might be multiple heats within morning and afternoon sessions to accommodate teams with double class registration (who have to participate in DV dynamic events on the same day). If possible, double class teams will be placed in the morning session of the running order.
- EA 6.11.3 The running order will be published on the competition website the night before the Endurance event.
- EA 6.11.4 Teams will be informed in advance about the latest time they must arrive to the dynamic area.
- EA 6.11.5 The exact time of arrival to the dynamic area will be recorded for each team. Out-of-order penalties as per FS Rules D 9.2.1 will be applied if a team is late.
- EA 6.11.6 If a vehicle's forward movement is physically blocked by an immovable obstacle for any reason, but otherwise the vehicle is capable of continuing the run, officials will power down the vehicle using shutdown buttons, push the vehicle to a safe location, and reset the shutdown buttons. The one lap period as per FS Rules D 7.7.3 starts when the officials confirm to the driver that he/she may restart the car.
- EA 6.11.7 25 points are awarded to every team that finish their run without DNF or DQ.



EA 6.11.8 If a team's corrected elapsed time is below  $T_{max}$ , additional points based on the following formula are given:

$$ENDURANCE\_SCORE = 300 \left( \frac{\frac{T_{max}}{T_{team}} - 1}{0.333} \right)$$

$T_{team}$  is the team's corrected elapsed time.

$T_{max}$  is 1.333 times of the corrected elapsed time of the fastest vehicle.

## EA 6.12 EFFICIENCY EVENT

EA 6.12.1 [CV only] The measured fuel mass of vehicles using MOL Racing Fuel DRX fuel is divided by 1.45 to be comparable to the vehicles using RON 100.

EA 6.12.2 [CV only] The same limits specified for 98 RON and E85 in FS Rules D7.9.2 apply for RON 100 and MOL Racing Fuel DRX respectively.

EA 6.12.3 Efficiency points are given based on the following formula:

$$EFFICIENCY\_SCORE = 100 \left( \frac{EF_{max} - EF_{team}}{EF_{max} - EF_{min}} \right)$$

$EF_{team}$  is the team's efficiency factor.

$EF_{min}$  is the lowest efficiency factor of all teams which were considered for efficiency.

$EF_{max}$  is defined as  $1.5 \cdot EF_{min}$ .

## EA 6.13 TRACKDRIVE EVENT

EA 6.13.1 FS Rules D 8.2 is void. There will be no Trackdrive running order. The starting order is based on the time the team arrives at the Trackdrive Event. Teams on their first run will receive priority.

EA 6.13.2 Each team has a minimum of one, a maximum of two runs consisting of ten laps each. The exact number of runs available will be uniform among teams and will be announced before the start of the event.

EA 6.13.3 25 points are awarded to every team that finishes at least one run without DNF or DQ.



- EA 6.13.4 If a team's best corrected elapsed time is below  $T_{max}$  and the run was not DNF or DQ, points based on the following formula are given:

$$TRACKDRIVE\_SCORE = 175 \left( \frac{T_{max}}{T_{team}} - 1 \right)$$

$T_{team}$  is the team's best time including penalties.

$T_{max}$  is 2 times the time of the fastest vehicle including penalties.

- EA 6.13.5 An additional 5 points are awarded for every completed lap for the run with the most laps completed, independent of the corrected elapsed time. This is also applied for teams that do not finish either of their Trackdrive runs.