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CHANGELOG

Rule	Version	Change
DE 1.6.1	1.1	Added section on confiscated goods
DE4.2	1.1	Added section on Engineering Design Event
DE4.3	1.1	Added section on Autonomous Design Event
DE5	1.1	Added section on Dynamic Events
DE6	1.1	Added section on Vehicle Requirements and Restrictions

ABBREVIATIONS

AAIR	ASF Add Item Request	ESO	Electrical System Officer
ADR	Autonomous Design Report	ESOQ	Electrical System Officer Qualification
ASF	Autonomous System Form	ETC	Electronic Throttle Control
ASRQ	ASR Qualification	EV	Electric Vehicle
BPES	Business Plan Executive Summary	FSG	Formula Student Germany
CBOM	Costed Bill of Material	FTO	Fuel Type Order
CCP	Charging Connector and Power	HIC	Health Insurance Certificate
CEST	Central European Summer Time	IAD	Impact Attenuator Data
CET	Central European Time	SE3D	Structural Equivalency 3D Model
CRD	Cost Report Documents	SES	Structural Equivalency Spreadsheet
CV	Internal Combustion Engine Vehicle	SESA	SES Approval
DSS	Design Spec Sheet	TMD	Team Member Designation
DV	Driverless Vehicle	TSAL	Tractive System Active Light
EAIR	ESF Add Item Request	TSMS	Tractive System Master Switch
EDR	Engineering Design Report	VSV	Vehicle Status Video
ESF	Electrical System Form		

DE FORMULA STUDENT GERMANY COMPETITION HANDBOOK 2017

DE 1 GENERAL INFORMATION

DE 1.1 One Site - Three Competitions

DE 1.1.1 Three competitions will be organized by Formula Student Germany (FSG). These are for the Internal Combustion Engine Vehicle (CV) class, the Driverless Vehicle (DV) class and for the Electric Vehicle (EV) class. All three competitions will take place during the same week at the same location.

DE 1.2 Competition Dates and Place

DE 1.2.1 FSG 2017 will be held from the 8th until the 13th of August 2017 in Hockenheim, Germany.

DE 1.3 Competition Website

DE 1.3.1 The URL of the FSG website is <https://www.formulastudent.de>.

DE 1.4 Date and Time Format

DE 1.4.1 The competition date/time format is "YYYY-MM-DD hh:mm" according to ISO 8601¹.

DE 1.4.2 The competition time zone is Central European Time (CET)² or Central European Summer Time (CEST) from last Sunday of March to last Sunday of October, Europe/Berlin.

DE 1.4.3 The time of the competition website is the official time for all deadlines and decisions:
<https://www.formulastudent.de/time>.

DE 1.5 Vehicle Shipping

DE 1.5.1 Teams are advised to consult their shipping company or freight forwarder to ensure that their shipment fully complies with all relevant, customs, import/export and aviation shipping requirements.

DE 1.5.2 Customs and other paperwork like ATA Carnet³, inspecting shipments, reporting and documenting damage to the shipment is the sole responsibility of the team.

¹https://en.wikipedia.org/wiki/ISO_8601

²https://en.wikipedia.org/wiki/Central_European_Time

³https://en.wikipedia.org/wiki/ATA_Carnet

DE 1.5.3 Detailed vehicle shipping procedures are published on the competition website.

DE 1.6 Confiscated Goods, Lost & Found

DE 1.6.1 Confiscated goods or lost & found items must be picked up until Sunday 8pm.

DE 2 REGISTRATION

DE 2.1 Team Registration

DE 2.1.1 The team registration will take place in the form of a quiz. There will be one quiz for all three classes. The topic for the quiz is: Formula Student Rules 2017 (excluding the specific rules for CV, EV and DV) and basic engineering knowledge.

DE 2.1.2 The URL of the registration website is <https://reg.formulastudent.de>.

DE 2.1.3 Teams must create a team account on the competition website and assign a team captain and two deputies. The deadline for this is 24 h before the registration quiz is opened. These three team members may complete the quiz, register the team for the competition and assign team members as participants simultaneously.

DE 2.1.4 Once the quiz has been successfully completed, the team captain or one of his deputies must register the team for the competition by agreeing to the rules and by selecting a free vehicle number. Requests for changing the vehicle number are only possible within the first week after the registration.

	EV	CV	DV(EV)	DV(CV)
vehicle numbers	001-199	201-399	401-499	501-599

DE 2.1.5 The quiz will be closed after five hours so that the registration slots can be assigned (see DE 2.2).

DE 2.1.6 Reserved slots (see DE 2.2.2 and DE 2.2.3) will be assigned to the teams based on past achievements, countries and their registration time. All remaining and unused reserved slots will be assigned to all other teams, with regard to their registration time.

DE 2.1.7 All assigned teams will be placed on the pending list on the competition website. In order to move to the participating list, they have 72 h to pay the registration fee (see DE 2.3). Once all slots have been filled, all additional teams will be placed on a waiting list (see DE 2.4). Once this process is completed, the registration for those who missed the quiz will open.

DE 2.1.8 The scrutineering order at the competition will be based on the registration time.

DE 2.2 Registration Slots

DE 2.2.1 FSG 2017 is limited in total to 65 CV slots, 35 EV slots and 15 DV slots.

DE 2.2.2 Reserved slots for the CV class will be assigned to the teams in the given order:

- Ten top teams from the FSG 2016
- Eight top teams from latest World Ranking List (<https://fs-world.org>)

- Three teams from Australia, China, Japan and New Zealand
- Three teams from Canada and the United States of America
- Three teams from Europe (see DE2.2.5), besides Germany
- Three teams from the rest of the world

DE2.2.3 Reserved slots for the EV class will be assigned to the teams in the given order:

- Six top teams from the FSG 2016
- Three teams from outside Europe (see DE2.2.5)

DE2.2.4 All remaining and unused reserved slots will become available for all other teams after the registration has been closed on the registration website (see DE2.1.5).

DE2.2.5 Europe is defined to consist of the following countries:

Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Vatican City.

DE2.3 Registration Fee

DE2.3.1 The registration fee is 750 € and includes a 20-person team. More team members can be registered for 20 € per participant until the TMD deadline (see DE3.2). Team members may register after this deadline for a fee of 50 € per participant. There is no limit in team size and no deadline for late bookings.

DE2.3.2 The registration fee must be paid online within 72 h by a verified PayPal account after the team has been moved to the pending list in order to move to the participating list. Otherwise the team will be deregistered.

DE2.3.3 Registration fees are not refundable for any reason.

DE2.4 Waiting List & Withdrawals

DE2.4.1 Teams on the waiting list may move to the participating list up to two weeks before the start of the competition. This is possible if registered team withdraw from the competition. Once a slot on the participating list has become available again, the next team on the waiting list will move to the pending list and has 72 h to pay the registration fee in order to move to the participating list.

DE2.4.2 Teams on the waiting list are required to submit all documents and forms by the same deadlines as teams on the participating list.

DE2.4.3 Teams on the waiting and participating lists who find that they will not be able to attend the competition are requested to officially withdraw by notifying the officials.

DE 2.5 Team Member Designation (TMD)

- DE 2.5.1 Participating team members must be assigned prior to the competition by the team captain or his deputies.
- DE 2.5.2 If there are any team members who are studying at a different university, they must choose the team's university during their registration process as a team member.
- DE 2.5.3 Team members may only be selected as participants by the team captain, if they have entered the following personal information in their user profiles:
- Personal address
 - Clothing size
 - Emergency contact person and phone (e.g. parents)
 - Valid Health Insurance Certificate (HIC) for Germany (e.g. travel insurance)
 - Current target degree of study
- DE 2.5.4 All participants who passed the HIC-check, will find personalized standard terms in their account overview. This document must be printed out, signed by the participant and brought to the on-site registration by the team captain.

DE 2.6 Visa for Participants

- DE 2.6.1 All participants which passed the HIC-check, will find a personalized letter of invitation with a digital signature in their account overview.
- DE 2.6.2 An invitation letter with a hand signature can be ordered on the competition website. Once a fee of 90 € has been paid, the letter will be sent out within two weeks.

DE 3 IMPORTANT DATES**DE 3.1 Team Registration**

- DE 3.1.1 Team registration (see DE 2.1) for all teams starts on 2017-01-16 13:00 CET and ends two weeks later.

DE 3.2 Deadlines

- DE 3.2.1 All required documents and information must be uploaded to the competition website by the team captain and/or his/her deputies by the following deadlines:

Date	Deadline	Class
2017-03-17 13:00 CET	ASF Add Item Request (AAIR)	DV
2017-03-17 13:00 CET	Electronic Throttle Control (ETC)	CV
2017-03-17 13:00 CET	ESF Add Item Request (EAIR)	EV
2017-03-17 13:00 CET	Impact Attenuator Data (IAD)	ALL
2017-03-17 13:00 CET	Structural Equivalency 3D Model (SE3D)	ALL
2017-03-17 13:00 CET	Structural Equivalency Spreadsheet (SES)	ALL
2017-04-14 13:00 CEST	Autonomous System Form (ASF)	DV
2017-04-14 13:00 CEST	Electrical System Form (ESF)	EV
2017-04-14 13:00 CEST	SES Approval (SESA)	ALL
2017-06-02 13:00 CEST	Autonomous Design Report (ADR)	DV
2017-06-02 13:00 CEST	Business Plan Executive Summary (BPES)	ALL
2017-06-02 13:00 CEST	Design Spec Sheet (DSS)	ALL
2017-06-02 13:00 CEST	Engineering Design Report (EDR)	ALL
2017-06-16 13:00 CEST	ASR Qualification (ASRQ)	DV
2017-06-16 13:00 CEST	Charging Connector and Power (CCP)	EV
2017-06-16 13:00 CEST	Electrical System Officer Qualification (ESOQ)	EV
2017-06-16 13:00 CEST	Fuel Type Order (FTO)	CV
2017-06-16 13:00 CEST	Team Member Designation (TMD)	ALL
2017-06-30 13:00 CEST	Vehicle Status Video (VSV)	ALL
2017-07-21 13:00 CEST	Cost Report Documents (CRD)	ALL

DE 4 STATIC EVENTS

DE4.1 Costed Bill of Material (CBOM)

DE4.1.1 For FSG 2017 a CBOM for the "Suspension System" must be submitted.

DE4.2 Engineering Design Event

DE4.2.1 [EV ONLY] Specific change of S 3.5: Only sealed accumulator containers which passed the accumulator inspection may be presented or mounted in the vehicle. They must not be opened.

DE4.2.2 [EV ONLY] Only fully discharged and electrically shortened spare accumulator cells or spare stacks may be presented.

DE4.3 [DV ONLY] Autonomous Design Event

DE4.3.1 The Autonomous Design Presentation (see S 4.4) must not exceed 15 minutes.

DE4.3.2 The subsequent individual discussion is scheduled with 25 minutes.

DE4.3.3 The Autonomous Design Race Review (see S 4.5) is scheduled with 20 minutes. The team should visualize its implemented algorithms with the data gained during the trackdrive by providing a simulation or a detailed chart. All decisions of the algorithms should be clearly visible in order to discuss movements and decisions of the vehicle.

DE4.3.4 There is no limit for presenters, but no visitors are allowed.

DE 5 DYNAMIC EVENTS**DE 5.1 [EV ONLY] Dynamic Area and Dynamic Vests (D 1.2)**

- DE 5.1.1 The charging area is a separated dynamic area including separate entrance restrictions.
- DE 5.1.2 Only three members, including at least one Electrical System Officer (ESO), per EV team may enter the charging area at the same time.
- DE 5.1.3 Inside the charging area, team members must not wear any conductive jewellery and must not wear any conductive objects of any kind which could touch the accumulator.

DE 5.2 Endurance Driver Change Procedure (D 7.4)

- DE 5.2.1 [EV ONLY] The Tractive System Master Switch (TSMS) must be switched off by the ESO and the Tractive System Active Light (TSAL) must have changed to green color, before anyone is allowed to touch the car or to start the drivers change.

DE 6 VEHICLE REQUIREMENTS AND RESTRICTIONS**DE 6.1 Technical Inspection Sticker (IN 1.4)**

- DE 6.1.1 The technical inspection sticker will be placed on the nose of the vehicle directly in front of the cockpit opening. The following space must be available:

CV	EV	DV (CV)	DV (EV)
120 mm x 50 mm	150 mm x 50 mm	150 mm x 50 mm	180 mm x 50 mm

DE 6.2 [EV ONLY] Cell Temperature Monitoring Device (EV 3.7.5)

- DE 6.2.1 The temperature measuring device DS1922T-F5 (iButton) will be provided by the officials and must be installed by the team. It is recommended to use an iButton holder (DS9093S) for mounting.

DE 6.3 [EV OR DV ONLY] Data Logger (EV 4.9 and DV 1.3)

- DE 6.3.1 A data logger according to "FSG2017 Data Logger Specification"⁴ will be used and provided by the officials.
- DE 6.3.2 [EV ONLY] This data logger will be used as the official energy meter according to EV 4.9.
- DE 6.3.3 [DV ONLY] This data logger will be used as the official data logger according to DV 1.3.
- DE 6.3.4 All requirements of the data sheets are seen as part of the competition handbook. E.g. the data logger must be properly fastened, be mounted at a place, where it is protected from water and the Ethernet interface must be made accessible.

⁴<https://www.formulastudent.de/fsg/rules/>