

FS EASTER

EVENT GUIDE

VERSION 1.0

RELEASE DATE: 15TH JUNE 2021

EMERGENCY INFORMATION

Medical service is available at the Ambulance Team. Get in contact with one of the organisers, if you need.

CONTACT SOMEONE WITH A TWO-WAY RADIO

Most of the officials and security have a two-way radio. Ask them to call the medical team.

CALL AN AMBULANCE YOURSELF

Call an ambulance yourself if someone is severely injured and requires urgent help. The emergency number for every landline and mobile phone is 112. (Also see information about emergency calls below.)

DURING DYNAMICS

When the dynamic area is open, a special rescue team is on site. To contact them, ask someone with a two-way radio (official, security).

HOSPITAL

NEARBY HOSPITAL

Pest Megyei Flór Ferenc Kórház

Address: 2143 Kistarcsa, Semmelweis Tér 1.

Phone: 0628 507 600

Homepage: www.florhosp.hu

EMERGENCY NUMBERS

If an emergency occurs outside the times of the competition, call 112.

This number works with all landlines, as well as mobile phones or coin-operated telephones as international GSM-standard.

It is always free of charge, but should be used only in case of emergencies.

OFFICIALS

In case of an emergency, please call one of them, no matter what time it is.

Event Manager: Gergely Légrádi +36 20 460 2723 0-24h

Event Control: Szabolcs Kiss +36 30 466 3353 7-20h

Regular emergency number: 112 0-24h

BEHAVIOUR IN CASE OF REGULAR FIRES (FUEL, OIL, PAPER, WOOD, ETC.)

- Call for help (firefighters/ambulance) by either finding an official with a radio or calling 112.
- Assist injured people to leave the area, provide first aid if you can.
- Try to extinguish the fire, if this is possible without risking your own safety. If an electric consumer is on fire, first cut the power to it.
- Leave the area and instruct others to do so as well.
- Wait for the firefighters/ambulance to arrive.
- Handling of the situation by the firefighters, medical treatment provided by ambulance.
- Fire extinguisher will be available at the site, if needed, do not hesitate to use them!

BEHAVIOUR IN CASE OF ACCUMULATOR FIRES

- Immediately leave the area in a radius of 5 meters and instruct others to do so as well. Assist injured people to leave the area. An overheated accumulator is extremely dangerous, so do not put yourself in danger by trying to put it out.
- Provide first aid to the injured, if you can. See below section on what to do in case of electric shock – in any case, do NOT give the victim water or food.
- Call for help by finding an official with a radio or by calling 112 yourself. Wait for the firefighters and ambulance to arrive, who will handle the situation.
- Stay out of the way of fumes coming from the accumulator or the car; mind the wind direction.

BEHAVIOR IN CASE OF ELECTRIC SHOCK

- Call for medical help by finding an official with a radio or by calling 112 yourself, preferably in parallel to the steps below.
- Push one of the emergency shutdown buttons and wait until the TSAL is switched off. Note that this can take up to 5 seconds, wait patiently.
- Try to speak with the victim and ask him/her about his/her health.
- Insulate yourself if you must move a victim away from a live contact – wear dry gloves or cover your hands with multiple layers of cloth and cover potential contact paths with the car with the HV isolation blanket.
Watch your footing to make sure that you do not slip or fall when trying to move the victim.
- Do not move the victim if there is a possibility of neck or spinal injuries, unless he/she is in immediate danger.
- Do NOT give water or food to the victim.
- Give artificial respiration if the victim is not breathing.
- Give CPR if the victim's heart has stopped (only if you are trained in CPR) or use an Automated External Defibrillator.
- Cover burns with a sterile dressing. On the surface, electrical burns may not look serious, but the burn can be severe deeper in the tissue.
- Keep the victim comfortable, warm and at rest, and monitor his/her breathing until the ambulance arrives.

The victim might undergo ventricular fibrillation several minutes after experiencing a shock.

MAP OF THE EVENT SITE

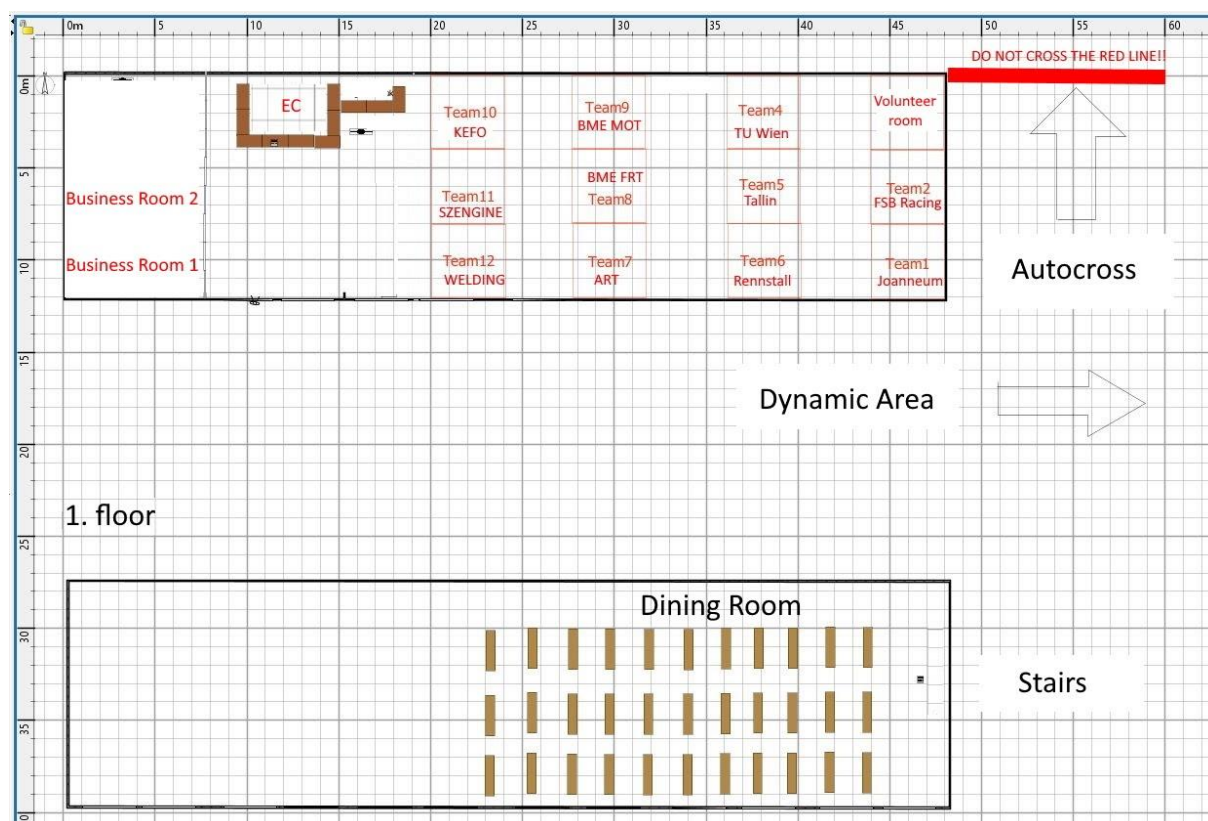
Maps of the Event can be found on the below link:

https://www.scribblemaps.com/maps/view/FS_Easter/FS_EasterMAP

SMOKING is STRICTLY PROHIBITED AT EVENT AREA!

TEAM LIST & PIT ORDER

The team pits are located right in the original pits of the Hungaroring in the following order:



Team 1: Rennstall Esslingen
Team 2: Joanneum Racing Graz
Team 3: Formula Student Team Tallin
Team 4: TU Wien Racing
Team 5: FSB Racing Team - Zagreb
Team 6: Arrabona Racing Team
Team 7: BME Formula Racing Team
Team 8: BME Motorsport
Team 9: KEFO Motorsport
Team 10: Formula Racing Miskolc

EVENT SCHEDULE

You can find the Event Schedule

https://fseast.eu/wp-content/uploads/2021/06/FS_EASTER_21_FinalSchedule.pdf

CAMP

17th June - Thursday (Based on teams purpose)
18:00-20:00 - Moving in to the FS Easter Camp

18th June - Friday
09:30 -20:00 - Moving in to the FS Easter Camp

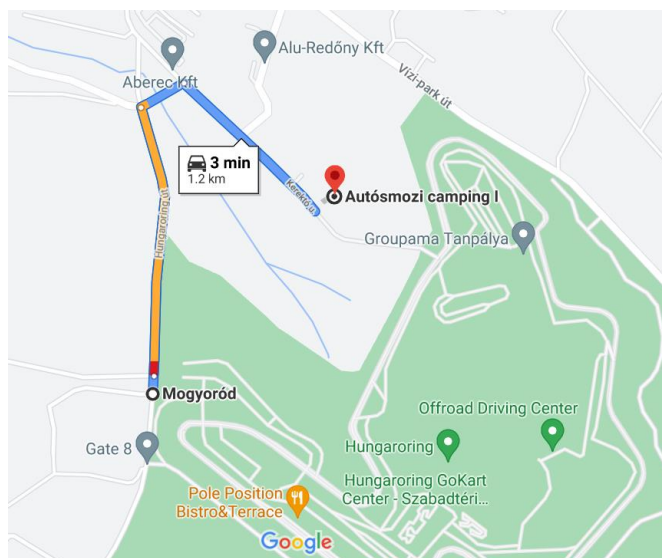
19th June - Saturday
09:30 -20:00 - Moving in to the FS Easter Camp

21st June - Monday
until 10:00 - Moving out of the FS Easter Camp

Camping site will be available for the participants.

Camping address:

Mogyoród, Autós MOZI camping I, Kerektó u. 4, 2146



ENTRANCE:



Arrival on Thursday from 18:00 pm,
Contact Gergely Légrádi, 06 20 520 35 71

Arrival on other Days: from 09:00
Contact: Róbert Pusztavámi, 06 30 226 16 12

COMMUNICATION:

In order to reduce personal contact, please download Telegram application to your mobile phone and join to the channel. We would like to ask every team to allocate at least one team member to the channel to be with all of the info up - to date.:

General topics: t.me/fseasterpublic

Teams have to put the organiser of the Event, Association of Automotive Engineers logo on their car. Could be downloaded from: fseast.eu/fseaster



STATIC EVENTS SCHEDULE

Static Schedule					
Team	EV/CV	Country	Design Event	Cost Event	Business Event
			Time	Time	Time
FS Team Tallinn	EV	EE	11:30 - 12:30	10:30 - 11:30	13:30 - 14:15
KEFO Motorsport	CV	HU	10:30 - 11:30	09:30 - 10:30	11:45 - 12:30
Formula Racing Miskolc	CV	HU	09:30 - 10:30	11:30 - 12:30	09:30 - 10:15
Joanneum Racing Graz	CV	AT	11:30 - 12:30	10:30 - 11:30	09:30 - 10:15
BME Formula Racing Team	EV	HU	10:30 - 11:30	09:30 - 10:30	11:45 - 12:30
FSB Racing Team - Zagreb	EV	HR	09:30 - 10:30	11:30 - 12:30	13:30 - 14:15
BME Motorsport	CV	HU	14:30 - 15:30	13:30 - 14:30	10:15 - 11:00
Rennstall Esslingen	CV	DE	15:30 - 16:30	13:30 - 14:30	11:00 - 11:45
TU Wien	EV	AT	13:30 - 14:30	14:30 - 15:30	10:15 - 11:00
Arrabona Racing Team	CV	HU	13:30 - 14:30	14:30 - 15:30	11:00 - 11:45

Please bring a printed version of all your cost documentation to the event,

There will be an opportunity to ask the judges about the scores after the judging at 16:00-18:00 CET.

DYNAMIC EVENTS SCHEDULE:

FRIDAY

09:00-09:15 - Event Open
 11:30-12:30 - Scrutineering
 12:30-13:30 - Lunch Break
 13:30-14:00 - Online Team Briefing + Security training
 14:00-17:30 - Test track open
 14:00-17:30 - Dynamic Scrutineering

SATURDAY

09:15-09:30 - Online Team Briefing - Security Training
 09:30-12:30 - Scrutineering
 10:30-12:30 - Brake Test, Test Track, Skidpad
 12:30-13:30 - Lunch Break
 13:30-18:00 - Scrutineering
 13:30-14:00 - Test Track, Skidpad
 14:00-15:00 - Dynamic Area Reconstruction
 15:00-15:15 - Track Walk
 15:15-18:00 - Autocross, Acceleration

SUNDAY

09:15-09:30 - Online Team Briefing - Security Training
 09:30-12:30 - Re-Scrutineering
 09:30-11:00 - Autocross
 11:30-12:30 - Endurance
 12:30-13:30 - Lunch Break
 13:30-16:00 - Endurance
 13:30-16:00 - Re-Scrutineering
 16:00-18:00 - Dynamic Area Deconstruction

ORGANISATIONAL ASPECTS

ARRIVAL TO THE EVENT SITE

Schedule: Friday, 18th June (from 9:00)
Location: [Hungaroring Grand Prix Track](#)

ARRIVAL AND REGISTRATION FOR THE EVENT

Schedule: Friday, 18th June (from 9:00)
Location: Event Control

You can come by bicycle, by your own car, or by [public transport](#) as well.

FS EASTER ENTRANCE:

Just find the grey gate and you will get your wristbands!



Our colleagues record your arrival, and give you any possible info about the next steps - registration, parking, unpacking the trucks, moving into the camping site etc.

ONLY the Team Captain is allowed to register his/her team. He/she can be accompanied by only ONE team member!

Standard Terms and covid rules document will be sent to the teams prior to the competition via email, and should be printed out for all team members, needs to be signed by the team captain and the members and should be brought to the event.

By signing the Standard Terms the teams state that they accept the rules of the event, that only team members will work on the car, also understanding and following the safety guidelines of the event. After that Team Captains are handed over the starter packages, dynamic pass wristbands and all passes for the registered team members.

The event guide will be provided in online form.

Campsite check-in is handled at the camping entrance, after a successful registration all team members receive the wristbands that grant access to the FS Easter Camp.

If the registration procedure is over then the team is ready to enter the premises of the event.

SAFETY REGULATIONS REGARDING ENTRANCE

Please pay high attention and **DO NOT block any emergency exits of the event.** Please follow our officials' instructions at all times. **DO NOT park your truck to the gates until the officials order you to do so.**

DRIVER REGISTRATION

Schedule: Friday, 18th June (from 9:00)

Location: Event Control

Each team could register up to 4 drivers. The drivers have to be registered in the Event Control where they have to show their valid driver's license. Each registered driver will get a numbered wristband.

ESO REGISTRATION

Schedule: Friday, 18th June (from 9:00)

Location: Event Control

Electric teams also have to register dedicated members with thorough knowledge about the vehicle's electrical systems: at least one Electrical Safety Officer person (ESO), and at most 4 more team members who can enter the charging area (altogether maximum 5 people). The ESOs also have to sign the registration document.

FIRE EXTINGUISHER

There will be available fire extinguishers at the site, but we would like to ask every team to bring a fire extinguisher with you.

PARKING AND VEHICLE PASSES FOR THE EVENT

Every entering vehicle has to ask for a Car Pass at the Registration upon arrival.

1. PARKING AT THE EVENT SITE

You are able to leave your passenger cars, vans and trucks in the designated 'Car Park' area.

2. PARKING AT THE CAMPSITE

Car Passes are allowed to park in the FS Easter Camp.

NOTE: The exit routes have to be unobstructed all the time, that is why we need to rule the venue's traffic. Please follow our guides in any case - unloading your vehicles, leaving the venue, moving by car/truck at the venue.

The pits can be unpacked DURING and AFTER endurance. Teams who finish the competition earlier can ask our colleagues for help for early unpacking.

All parking areas should be left until 18:00 Sunday at Hungaroring.

Inside the event area the maximum speed is 30 km/h!

EVENT CONTROL

Schedule: from 18th June 08:30 - 20th June 18:00

Location: Event area, Pits

Event Control is the central contact point for teams and all issues concerning the event.

Event Control provides:

Information point for all competitors (concerning schedule, general questions etc.)

Contact interface to the officials

Registration of the drivers

Registration of ESOs and charging area staff

Team briefing wristband handout

Data logger handout point

Lost and found

Feedback

OFFICIALS (SELECTION)

At the venue, we will answer your questions directly. To contact us before and after the event, please write us an e-mail to hello@fseaster.eu. The fastest and easiest way to communicate with us is on-site.

BOARD MEMBERS

Gergely Légrádi
Board | Project Owner

Péter Lindner
Board | Technical Examination Leader

János Szalay
Board | Electrical Scrutineering Leader

Ádám Vallyon
Board | Mechanical scrutineering Leader

András Horváth
Board | Dynamic Area Leader

Gergely Matin
Board | Static Events Leader

Szabolcs Kiss
Board | Event Control Leader

Dávid Kiss
Board | President of Association of Automotive Engineers

Tamás BERKECZ
EC | Score Counting Leader

Timea NAGY
EC | Event Coordinator

To contact them, visit to the Event Control.

ANNOUNCEMENTS

The event will proceed according to the official time schedule as far as possible. Listen to the announcements and look out for the placards at the event control for changes in the schedule.

PIT AND INFIELD TIMES

The pits are open on all event days according to times determined in the Event Schedule.

It is not allowed to stay or work in the pits any other periods.

Teams who remove their vehicle (EV and IC) or tractive system accumulator from the competition site after the competition has begun will be disqualified from the competition. **Violation of any of the above rules will result in a disqualification for the whole event.**

Pit equipment

In every pit there is regular 230 V AC, 16 A power sockets. During the night the pits are guarded. You can see the pit arrangement on the team list and on the team flags on the pit entrances.

SURVEILLANCE

After closing time, there will be a security company for surveillance of site, pits and cars. During the day, the teams are responsible for the security of their car and the equipment in their pit. Do not leave any valuables open in your pit at any time. Security is unable to monitor everything all the time. Also keep in mind to close your pit shades at venue closing.

RULES AND GUIDELINES

Everyone (participants, volunteers, & visitors) at Formula Student Easter would like to enjoy an accident free event. The following guidelines have been established to advise teams of potential unsafe practices in the paddock and pit area.

ALCOHOL

PLEASE NOTE: Alcohol at the event site is strictly forbidden!

Along with the fun, we want a safe competition. There will be alcohol testing (breathalyzers) during the event. 0 % is the allowable alcohol content during this event for everyone.

If ANY team member (driver or not), is tested with an alcohol level higher than 0.0 %, he or she will be immediately disqualified for the rest of the event. The second person of the same team caught with an alcohol level higher than 0.0 % will result in the entire team being disqualified immediately.

For the Formula Student Easter Camp other rules apply for alcohol consumption.

FIRES AND SMOKING

No open fires are allowed in the pit area and in the engine test area. This includes BBQ grills, oxy-acetylene torches, heaters, cigarettes, etc. **Smoking is strictly prohibited in the dynamic area, in all buildings, and in the pit area.** Smoking is permitted only in the dedicated area of the event site and outside the ticket center.

JACKING

When jacking your car up off the ground a safe, stable, load rated support device must be used. **The use of crates, piles of wood, or strong team members is NOT ALLOWED.**

WORKING ON THE CAR

Angle grinders can ONLY be used in the dedicated welding area.

In case of using angle grinders, safety glasses are required.

When using metal cutting equipment that produces metal chips, eye protection is required for the operator as well as any team member assisting. During the use of loud power tools like drills or angle grinders, ear protection is required.

Any operation producing litter or debris, e.g. cutting of carbon fibers, should not be performed in the pits. Please take care about your environment by not littering.

Working on the tractive system (EV)

An ESO and at least one more team member who can interfere in case of emergency must attend every activity which involves the tractive system.

Opening any tractive system enclosure is only permitted if it is de-energized and disconnected from any high voltage source. If the enclosure is within the vehicle, the accumulator container needs to be removed from the vehicle.

Activation of the tractive system of the car in the pits is prohibited, only possible at upon request and supervision by an Electrical Official.

The tractive system may only be activated in the dynamic area for testing purposes under following conditions:

- Separate the car with a barrier tape, provided by FS Easter on request.
- The car must be jacked up and the driven wheels demounted.

- One team member must be prepared to push an emergency button at any time.
- Team members who take part in the measurement activities must wear compliant safety gloves and use appropriate measurement devices and tools.
- The tractive system must only be active when it is necessary.
- Only members of your team and Scrutineers are allowed to stay behind the barrier tape.

After any activity on the tractive system during which seals were broken, an E-Scrutineering is mandatory.

ELECTRIC VEHICLE FIRES

The organisers are aware of a number of incidents where prototype electric vehicles caught fire and were completely destroyed. In some cases fire extinguishers were used to control the fire, but they didn't have any effect. For this reason the organisers reserve the right to take any action in order to stop or control the fire. This can even include pouring lots and lots of water on the accumulator, which can have the effect of cooling the cells sufficiently to stop and control thermal runaway. If a team wishes to choose a preferred method for the case their electric vehicle catches fire, they can do so by discussing it directly with the chief of electrical scrutineering (Péter Lindner) during the event. It is technically more difficult to handle electric vehicle fires in the pits, therefore the team must keep the possibility that the car can be easily pushed out of the pit. The HV accumulator must be observed for minimum one hour after it was charged.

Any fire or accident must be immediately reported to the organisers.

RUNNING ENGINES OR MOTORS

You are allowed to run engines (IC) or put the car into ready-to-drive mode (EV) ONLY in the designated engine test area, after passing scrutineering.

!! FS ENGINES MAY NOT BE RUN IN THE FS EASTER CAMP!!

DATA LOGGERS

The data loggers will be handed out at the Event control during opening hours, **in change for a 100 € deposit.**

You have to install the data logger in the car prior to E-scrutineering, according to the data logger instructions available on the [FS East website](#). You can find any necessary information in the [Data Logger Specification](#). You can ask our E-scrutineers for help with the installation.

The proper functioning of the data logger will be tested during the second part of E-scrutineering.

An E-scrutineer will read out your data logger data via a USB connection on Saturday evening and on Sunday if your car makes it past the driver change during the endurance.

The officials will check if the power consumption was higher than 80 kW, if the accumulator was higher than 600 V or lower than what your cell configuration allows in the ESF. According to FSG rules, a violation of any of the limits during any of the dynamic disciplines will result in a disqualification for the whole discipline. For example if too high power consumption was recorded at a single acceleration run, that means a DQ for all four acceleration runs.

After the data was read out after the endurance, the data logger has to be removed from the car and returned to the event control, where you get back your deposit. Please note that the data logger must be in an easily accessible location so that it is possible to insert, remove or replace it within 15 min in ready to race condition and must not be placed within the accumulator container.

We encourage all teams to record own efficiency data for the unlikely event of an data logger failure during the endurance event. Any attempt to manipulate the intended function of the data logger may lead to a disqualification from the entire event.

If you have any questions regarding the data logger, please ask for the data logger responsible at the Scrutineering area, or contact directly to Péter Lindner.

WELDING

Formula Student Easter provides an approved welder. **Welding is allowed in the pits, we would like to strongly ask for the teams to bring with you floor - protecting equipment. Get in contact with the EC if needed.**

TYRE CHANGE

Tyre change service will be provided in [Mogyoród village](#).

Get in contact with the Event Control in case of needed.

VEHICLE MODIFICATIONS

If you make any major modifications to your car, cars must return to scrutineering for re-approval.

FLAGGING

All drivers must know the competition-flagging signals.

Flags and communications



BLACK FLAG

-The driver must pull into the driver change area for discussion with the officials concerning an incident. A time penalty may be assessed.



BLACK FLAG WITH ORANGE DOT

-Mechanical black flag. The driver must pull into the driver change area for a mechanical inspection of the vehicle, something has been observed that requires a closer inspection.



BLUE FLAG

-The driver must pull into the designated passing zone to be passed by a faster competitor. The driver must obey the track marshals signals at the end of the passing zone.



CHECKERED FLAG

-The session has been completed. The driver must exit the course at the first opportunity.



GREEN FLAG

- (a) The session has started, the driver may enter the course under direction of the track marshals. In case of stalling, the vehicle can be restarted, but the driver has to await another green flag as the opening in traffic may have closed.
- (b) The driver is clear to re-enter the track after using the slow lane to let a faster vehicle pass.
- (c) The driver may pick up speed again after a yellow flag was displayed.



RED FLAG

-The driver must come to an immediate safe and controlled stop on the course and must follow track marshals directions.



YELLOW FLAG - WAVING

-Danger, the driver must slow down, something has happened beyond the flag station, no overtaking unless directed by the track marshals.



YELLOW FLAG - STATIONARY

-Warning, there can be danger beyond the next flag station. The driver has to pay more attention to the following flags.



RED AND YELLOW STRIPED FLAG

-The track is slippery or something is on the racing surface that should not be there. The driver must be prepared for evasive maneuvers to avoid the situation.



WHITE FLAG

-There is a much slower car before the driver. The driver has to be prepared for slowing down until the next overtaking zone

BEHAVIOUR

Alcohol and drugs have no place at this event.

TESTING

Driving practice is only allowed within the designated test area and at the designated times. There will be 1 test track provided for the CV and EV teams, will be open during Autocross and Endurance Event and also on Friday - Saturday.

HOW TO WHEEL THE CAR

Whenever a car is moved, please take care of the following:

There must be a driver wearing a full safety suit seated in the cockpit.

The car must be moved with a push bar (which must have a fire extinguisher attached).

Cars with wings are required to have two team members walking on either side of the vehicle whenever the vehicle is being pushed.

The detachable key of the primary master switch (IC) or tractive system master switch (EV) must be taken off completely.

(For EV teams only) In case the car has not passed all parts of E-Scrutineering, the HVD must be disconnected while the car is moved around on the event site, or while taking part in static events.

SPECIAL NOTE FOR DRIVERS

All drivers should do a check of critical fasteners and components on their vehicles to assure complete control during the driving events. Fasteners come loose, parts break due to fatigue, and occasionally someone forgets to torque a nut – this may have serious consequences for your safety!

REMEMBER: USE THE KILL SWITCH in case of an engine or brake malfunction!

HAVE FUN – DRIVE SAFELY – USE COMMON SENSE!

DYNAMIC EVENTS

GENERAL INFORMATION

The dynamics at FS Easter are compliant with the Rules 2019 Part D and additional FS East Rules. The following pages describe the additional procedures and key aspects. Other information will be provided at the morning briefings on site.

TEAM AND DRIVER BRIEFINGS

There are team briefings every morning of the competition online. The briefing contains general event information and detailed information about the dynamic events of the day. Missing the briefing (or late arrival) means no entrance to the dynamic events.

ACCESS TO THE DYNAMIC AREA

Maximum four team members may enter the dynamic area or the engine test area, including the driver and/or the ESO.

WEATHER

This is one of the factors which cannot be influenced by the event organisation. So please be aware that the timetable will not be changed due to bad weather conditions.

Under normal conditions, the track is declared dry. If it is necessary to declare damp or wet conditions, there will be signs and announcements at the dynamic area. Please read the rules for more information.

SEALS

Scrutineers will mark or seal various approved parts (e.g. tires, rims, insulation monitoring device, accumulator containers, data logger...). The car can be disqualified from any dynamic event by using unmarked parts. Parts with broken seals are equivalent to being unmarked. Broken seals can only be replaced by a scrutineer.

CAR SET-UP ALTERATIONS

Teams do not have to use the same car set-up for all the dynamic events and are encouraged to make adjustments (e.g. tyre pressure and suspension settings) to give the vehicle characteristics best

suited to each specific event. However, the car must comply with the rules, and all the seals from technical inspection must be intact.

TYRE CHANGE

FS Easter provides a tyre changing service, based on purpose. If you have a puncture and you need professionals, please ask for help at the Event Control and the Officials will help you to contact a local tyre shop.

FUEL AND OIL

Open fuel containers are not permitted at the event. All fuel containers must be DOT approved. Waste oil is to be taken to the fuel station for disposal. Refuelling is only allowed at the fuel station, but not in the pits.

ENGINE TEST AREA

Location: see site plan

This is a designated area for test running the engines or motors. Entering this area is only allowed with the Dynamic wristbands. Your car must have passed scrutineering and you must follow these rules:

The car must be in one of the designated engine test area slots.

The car must be adequately supported, with the wheels at least 10.2 cm (4") off the ground.

While the engine is on, a driver must be seated in the cockpit, wearing a full safety suit and with the belts fastened.

There must be a fire extinguisher immediately available.

The gearbox must be in neutral or the driven wheels must be demounted.

No one is allowed under the car while the engine is running.

Re-fueling is only allowed in the designated fuel area, not in the engine test area.

FUEL STATION (CV)

Location: see site plan

The fuel station will provide standard RON 100 fuel.

No vehicle will be provided with fuel until it has passed scrutineering.

Draining fuel and lubricants from the car is only permitted at the fuel station.

Follow these safety guidelines while in the fuelling area:

All engines must be turned off; cars are to be pushed to and from fuelling.

The driver must not sit in the car during the fuelling process.

No mobile phones are allowed in the fuelling area.

The tank is to be filled to the fuel level line before the tilt test and the endurance event.

Re-fuelling must be possible without the removal of any body parts of the car (except the cap of the fuel tank).

TECHNICAL & SAFETY INSPECTION

Location: Pits

GENERAL INFORMATION

During charging, accumulators must be removed from the car and placed on the accumulator container hand cart.

Only chargers marked after successful E-Scrutineering must be used. Three phase 32 A sockets will be available in the Pits.

An ESO must be present at all times during charging and whenever an accumulator container is open. Safety glasses and safety gloves must be used whenever an accumulator container is open and the maintenance plugs not removed. If the accumulator container is opened, it is cannot be left unattended without covered with HV blankets and marked with the ESO's name and telephone number.

The charging and the scrutineering area is located in the same place in the pits. When you are in the Pits be very careful, do not disturb others and take extra care to keep your tools and things in proper order. If someone's behaviour is unacceptable, he or she can be banned from the area, and the team also may be penalized.

In case of fire, if someone presses the emergency horn, or if the Officials ask for it, leave the area immediately on the shortest way through the corridors.

Scrutineering will take place in the Pits, scrutineers arrive to the Teams based upon request, can be made at the Event Control. During the Scrutineering, teams may make small repairs on the car, but the time spent in one attempt can't exceed 15 minutes total. If no other team is waiting for scrutineering, then the team can continue the work until a new team arrives.

The times in the event schedule are strict. We do not start scrutineering after the area closes, but the ongoing inspections will be finished.

It is the team's responsibility to make sure the acceptance of each test is properly documented.

SCRUTINEERING STEPS

Cars have to pass a technical and safety inspection before being allowed to practice or take part in the dynamic disciplines.

The car has to be presented at each step of the inspection in the following order.

EV CARS:	CV CARS:
1. E-scrutineering part 1*	1. Mechanical scrutineering
2. Mechanical scrutineering	2. ETC & BSPD test
3. Accumulator scrutineering*	3. Driver Egress and Safety Test
4. EV2 Scrutineering	4. Weight measurement
5. Autonomous Scrutineering (DV only)	5. Noise test
6. Driver Egress and Safety Test	6. Brake test
7. Rain test	
8. Brake test	

Passing any of the above steps is marked on the scrutineering spec sheet which must be preserved by the team.

SCRUTINEERING ORDER

The Scrutineering Order is not predetermined, scrutineering spots work on a first come first serve basis at the pits.

E-SCRUTINEERING PART 1 (EV)

Location: Pits, Team pits

Scrutineers will check that your car fulfils the EV rules without activating the tractive system. When your car is ready for E-scrutineering, let the organisers know at the Event control, and a scrutineering team will come to your pit as soon as they are available.

You must have the following items available:

- The vehicle with operable LV system (either with or without the tractive system battery)
- Documentation (either printed or electronic format)
- Firewall sample
- Every self-developed PCB which are interfacing with the tractive system (spare PCBs)
- At least 2 but maximum 4 team members (one of them has to be ESO)

MECHANICAL SCRUTINEERING

Location: Pits, Team pits

Scrutineers will check if your car meets the rules.

Cars are inspected in the order of registration quiz results. When your car is ready for mechanical scrutineering, let the organisers know at the Event control, and a scrutineering team will come to your pit as soon as they are available.

You must have the following items available:

- The car in finished condition
- Camera mounts installed on the car, if they are to be used at the event
- Printed copy of the Structural Equivalency Spreadsheet
- Printed copy of the Impact Attenuator Data Report
- A test piece from the impact attenuator
- Teams with monocoque: Laminate test specimen
- All the tyres you plan to use at the event
- 2 fire extinguishers
- Quick jack and push bar
- All driver suits and other safety gear: arm restraints, helmets, suits, gloves, eye protection, balaclavas, socks and shoes

If your car fails scrutineering, you do not lose your scrutineering spot. However, if the scrutineers are on the opinion that the car is not in „finished condition“, the inspection process will be halted.

The inspection form will be retained by the scrutineers. If you have items that need to be rectified, the form will be returned to the team, you will not get your sticker, and you will have to present your car for scrutineering again. The scrutineers reserve the right to spot check any car at any time during the event.

ETC & BSPD TEST (CV)

Location: Engine test area

The followings will be checked:

Compliance of the ETC system (if present)
Compliance of the BSPD system

You must have the following items with you:

A pilot
Anything else you will need to present the working of the ETC & BSPD
At least 2 but maximum 4 team members

After the successful scrutineering process, the ETC & BSPD it will be sealed and the team will be rewarded with the ETC & BSPD scrutineering sticker.

ACCUMULATOR SCRUTINEERING (EV)

Location: Pits, Team pits

During the accumulator scrutineering teams have to bring their batteries in the pits. You will have to open the accumulator container, and the scrutineers will check the inside of the accumulator.

The followings will be checked:

The accumulator is built as in represented in the ESF
There are no obvious mistakes or inadvertencies
The AMS connections, the location of the thermal measurements, and the accuracy of the voltage measurements.

You must have the following items with you:

The HV Accumulator
Protective gear and isolated tools to work on the accumulator
Laptop or something to connect to the AMS
Anything else you will need to present the working of the AMS
At least 2 but maximum 4 team members (one of them has to be ESO)

After the successful scrutineering process the accumulator will be sealed and the team will be rewarded with the accumulator scrutineering sticker.

E-SCRUTINEERING PART 2 (EV)

Location: Pits, Team pits

During the second part of electrical scrutineering, it will be checked that your car fulfils the EV rules with the tractive system active.

Among other aspects, the correct working of the BSPD will be tested, so please have the BSPD test tool ready. The Ready-To-Drive-Sound test will be performed here as well. The data logger will also be tested in the in this step.

After your car passes E-scrutineering, critical parts of the tractive system will be sealed. The scrutineers reserve the right to spot check any car at any time during the event, **even after endurance.**

The followings will be checked:

The working of the BSPD

The working of the Safety Circuit

Data logger connection

You must have the following items with you:

Documentation (either printed or electronic format)

BSPD test device

The vehicle (in fully assembled, ready-to-race condition including mounted data logger (see DV 1.3))

At least 2 but maximum 4 team members (one of them has to be ESO)

DRIVER EGRESS AND SAFETY TEST

Location: Pits, Team pits

During scrutineering maximum four team members can be in the pit.

The driver egress test has to be done for all drivers before they are allowed to use the car in the dynamic area,

but it can take place any time during the event. Ask for the egress test assistants at the Event control.

Driver egress and checking of safety gears will be held at separated section.

Please begin scrutineering with the tallest driver in the car, belted, and prepared for roll bar height and egress check.

Your other drivers might be checked as well upon request of the scrutineers.

You must have the following items available:

The car in finished condition
 Camera mounts installed on the car, if they are to be used at the event
 Quick jack and push bar
 All driver suits and other safety gear: arm restraints, helmets, suits, gloves, eye protection, balaclavas, socks and shoes

TILT TABLE TESTING

Tilt Table testing will not be held at FS Easter, only visual check.

RAIN TESTING (EV)

Location: Dynamic Area

Teams have to pass a special rain test during scrutineering, according to the rules before and after the rain test an IMD test will be performed. During the rain test, the tractive system has to be active and the driven wheels removed. It is not allowed to have a driver seated in the car during the rain test.

NOISE TESTING (CV)

Location: Dynamic Area

The vehicle will be checked for compliance with the sound level restrictions.
 Teams must bring a laptop to show the engine speed monitored from the ECU on the laptop.
 FS East will apply the rule “CV3.2 Maximum Sound Level” of the FS Rules 2019.
 If the vehicle is unable to pass in two attempts, the car must be repaired and then brought back for retesting.

The noise level can be measured at any time during the dynamic events. Penalties may be given if the sound level exceeds the mandated maximum. Vehicles may be forced to return to this station for re-certification should the officials deem it necessary. Re-certification may be required if work is performed on the vehicle’s exhaust system or if the vehicle is involved in an incident which results in vehicle damage.

BRAKE TESTING

Location: Dynamic area

Brake Testing checks that the vehicle can be brought to a controlled stop.

Each driver must know the proper procedure of the brake test.

With the car at the start line of the station a green flag (or similar signal) should be used to signal the start of each run.

The driver must accelerate on a short straight (typically getting into 2nd gear) until reaching the braking area, which is a box defined by pylons.

For electric vehicles, the tractive system has to be switched off by the driver before entering in this box.

The car fails the test if the TSAL is still blinking 5 seconds after shutting down the tractive system.

Once inside the box, the driver must apply the brakes with enough force to demonstrate **Full lock-up needed for all four wheels at the same time, and the engine cannot shut down during brake test. While braking, the centerline of the vehicle should be parallel with the centerline of the braking area zone.**

If the vehicle passes the test, the person in charge signs the approval form and provides the team with the last tech sticker.

The vehicle is now free to proceed to the practice track or to the dynamic events.

If the vehicle is unable to pass the brake test in two attempts, the car must be repaired and then brought back for retesting.

Re-certification may be required if work is performed on the vehicle's brake system or if the vehicle is involved in an incident which results in vehicle damage.

TESTING

Location: see the map of the venue

Driving practice is only allowed within the designated test area and at the designated times.

There will be two test tracks provided for the CV and EV teams.

The ground is made of asphalt. Teams may use the test area to set up and test their cars. The testing time per team depends on the waiting queue and will be 3 to 5 minutes per run. For additional testing, teams have to go to the end of the queue. NOTE: If no other teams are waiting for testing, it's allowed to use the test track continuously.

ACTION CAMERAS ON THE CAR

As the rule D 2.2.1. states, "During driving, the mechanical integrity of the vehicle must be maintained."

Teams may register their action cameras at the event control. Losing a registered action camera will not lead to disqualification from a specific event, if the team agrees to share all recorded data with the organisers at the Event Control each day until the Event Control's closing time.

DYNAMIC DISCIPLINES

All of the dynamic disciplines are carried out in the dynamic area. For more details, please check the site plan in section.

SKID PAD

There will be a two-lane queue for this event. Lane one is for the first driver of the team, lane two for the second driver.

The queue closes 15-30 minutes before the end of the event, depending on the number of cars waiting.

At the closing time of the Skidpad Event, only that vehicle is allowed to start their run, which is standing at the start line of the Skidpad Event.

Each driver can choose to drive one or two runs in a row. The second run may be performed immediately after the first run without re-entering the queue.

ACCELERATION

Acceleration will take place on the Grand Prix Track of Hungaroring, only on Saturday from 15:00 - 18:00.

Similar to the Skid Pad event, the waiting queue for the Acceleration event is a two-lane queue: lane one is for the first driver of the team, lane two for the second driver. The queue closes 15-30 minutes before the end of the event, depending on the number of cars waiting.

After passing the finish line of the Acceleration, there is a big slow down area. To return to the starting line, turn right and follow the instructions by the marshals. On your way back, please maintain a slow car speed (maximum 30 kph!) for your safety and that of the marshals.

Each driver can choose to drive one or two runs in a row. The second run may be performed immediately after the first run without stepping back to the end of the queue.

At the closing time of the Acceleration Event, only that vehicle is allowed to start their run, which is standing at the start line of the Acceleration Event.

AUTOCROSS

Coursewalk: non-motorised vehicles are allowed to use in a safe manner.

Cones are used for the track boundary and for the slalom turns. The track direction is counter - clockwise. Each run comprises one lap with a flying start. Each driver can choose to drive one or two runs in a row. The second run may be performed immediately after the first run without re-entering the queue. If the runs are performed separately, the driver must exit the course after the first run and drive through the driver change area slowly back to the start for the second run. The queue closes 15-30 minutes before the end of the event, depending on the number of cars waiting. Only one car is allowed to run parallel on the AutoX track to fasten the AutoX Event. If a yellow flag interrupts the run of the car, the run can be re-run.

ENDURANCE

Coursewalk: non-motorised vehicles are allowed to use in a safe manner.

The endurance track will be set up for Sunday. The track direction is counter - clockwise. The colour of the cones is similar to the Autocross event. The additional overtaking lanes are marked with blue cones.

The starting order for Endurance results from the Autocross event. The starting order will be displayed at the Event Control.

As FS Easter wants to provide as much opportunities for testing for the teams, Endurance Order is quite flexible, first comes first serves. In case of argument, team with faster autocross time gets the priority. Timekeeping is watching for these incidents.

IMPORTANT: DUE TO THE track layout, only 1 car is allowed to drive on the track at the same time.

Organisers have the rights to enable a second car on the track at the same time.

If you get a blue flag while driving, please drive into the next overtaking lane. 3 overtaking zones will be provided. Please start slowing down when you are in the overtaking lane, NOT before. For the faster car, it is important not to follow the car in front too closely, otherwise serious accidents may be caused if the cars touch each other. Wait for the green flag to re-enter the track. Rear-ending a slower car will definitely lead to a disqualification of the faster car!

STATIC EVENTS

ENGINEERING DESIGN EVENT

Location: Team's pits (Initial judging)

During the competition, a discussion with the judges will take place, next to the team's vehicle.

Here are some tips to help you score higher in the engineering design event:

- Be on time.
- Make sure your car is in race-ready condition and your team members are well prepared.
- Bring all engineering documentation with you. Read and understand the rules.

The exact time of your team's design judging can be found in the Static Events Schedule.

JUDGING SEQUENCE

At Formula Student Easter, design judging will involve 1 part:

Initial judging of all teams.

You should start with a 3-5 minute overview presentation of the car. It is up to you how you use this presentation time: introducing the team, the car or the design goals etc. This presentation time will be followed by around 35 minutes discussion with the judges. You are done after 45-50 minutes.

To score high in the design event, we would suggest you to bring all necessary papers and sample parts with you, which underline your engineering work. If you have done any tests, bring the results with you. Judges only believe what they see, not what you tell them. Read the Carol Smith "Everything You Wanted to Know about Design Judging" paper available on the Formula SAE website.

The judges will be around the site on Sunday. Feel free to ask them about your car and your project. They will be more than happy to answer all your questions.

COST AND MANUFACTURING EVENT

Location: Team's pits (Initial judging)

During the competition, a discussion with the judges will take place, next to the team's vehicle. The discussion is split into two parts: The Bill of Material (BOM) Discussion and the Cost Understanding.

The Bill of Material Discussion

A printed copy of the report must be submitted of the Cost Report Documents in person at the registration. The report will follow the guidelines set forth in the published rules. From this analysis the judges will determine if all parts and processes were included. The Cost Report is judged on the accuracy, quality of the cost report.

The judges will add penalties if errors are detected, or if items are omitted.

The Cost Understanding

A discussion to evaluate the general cost and manufacturing knowledge of the team.

General information

Schedule of the Cost, Manufacturing and Sustainability Event for Judging (max. 55 minutes):

5 min for introductory presentation of the car and/or team,

20 min for discussion and questions about CRD,

20 min for the discussion of the Cost Understanding,

5 min for consultation of the judges,

5 min for feedback to the teams

The final scores are posted until the next day afternoon for the public. Once posted, the scores may be protested for only one hour, after which time, all scores become final.

BUSINESS PLAN PRESENTATION EVENT

Location: Business Rooms @ Hungaroring Technical Building, next to Event Control (Initial judging),

The key point of the Business Plan Presentation Event is that the teams and judges go into a roleplay. The presenting team members introduce themselves as employees of a company and not formula student teams.

The judges are treated as potential executives or managers of a corporation interested in either manufacturing the team's design or investing in the team as a company, and the approach is to obtain a deal from them. Teams have to keep in mind that the executives, managers represent different areas of a corporate organization, including engineering, production, marketing and finance, etc., thus may not all be engineers.

The presentation must relate to the car entered into the FS Easter Event, although the state of the prototype itself must not be considered (this means even if the car is not working or finished, at this static event it does not matter).

Presentation written copy

Teams should submit their presentation (e.g. powerpoint slides) until 18.06.2021. 17:00 in the Event Control. Teams cannot modify their presentation after submission.

The Presentation

Competing teams have to keep a presentation to potential investors or partners for the presented business model.

The presentation should tie together all factors that would influence the marketability and manufacturability of their design and all risks conjuring this business idea.

The technical aspects of the vehicle design should be presented to reinforce or support performance claims but should be reduced to the minimum necessary for an investment decision. The competitors should show an understanding of the marketplace and the targeted customer. Furthermore, they should show how their design fits into its expected market and how it is completed to a business model. Competitors must convince the Judges that their prototype and the related concept represents a profitable enterprise for the manufacturer/investor and that is simply an attractive investment.

JUDGING

During the judging, each team gets the opportunity to present to the Judges. Therefore, the overall group of Judges is divided into smaller groups, who will listen and judge the team presentations. At the end of each presentation, the judges are requested to ask relevant questions and after a little break of scoring to give feedback.

Schedule for each presentation (max. 35 minutes)

Max. 5 minutes for set-up & preparation

10 min for Business Presentation

5 min for Q&A on the presentation

5 min Judge time (for debriefing and scoring decision)

5 min for Feedback to the teams

Max. 5 min de-installation

This schedule needs to be followed strictly to not disrupt the overall schedule for the whole day.

During the presentations only judges and the presenting team members can participate and special permission to official Press-staff. Special entry permission should be asked and decided by the Business Event Leader.

BUSINESS PLAN PRESENTATION SCORING

Non finalist

Presentation Event score = $(P_{YOUR}/P_{MAX}) \times (75-n)$

Where:

" P_{MAX} " is the highest score awarded to any team not participating in the finals

" P_{YOUR} " is the score awarded to your team

" n " is the number of finalists

Finalists

In this event, no finals for BPPE will be held. " n " th Place $75-(n-1)$ points

It is intended that the scores will range from near zero (0) to seventy-five (75) to provide good separation.

If a team does not attend the Business Finals despite its nomination, it will automatically receive the last place in the Finals. If a team misses their allocated time, the team will receive zero presentation points. The team that makes the best business presentation (regardless of the quality of the car) wins the event.

RESULTS

Results will be published online at the FS Easter website. (<https://fseast.eu/fseaster/>)

PROTESTING OF RESULTS

REVIEW PERIOD

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During the review period teams can discuss their static event results with the corresponding static event leader. The static event leaders can offer an insight into the score sheet of the respective team or provide feedback based on the score sheet. During this period objective, administrative mistakes can be protested (i.e. mistake in the summarization), but the subjective decision of the judges about the given points cannot be protested.

REQUIRED REVIEW

Any team that intends to protest a rule interpretation, score, judge's decision or any other aspect of the competition, must present the issue to the FS Easter rules committee, represented by Tamás Berkecz for discussion and possible resolution before the protest is filed. For locating him, please contact event control.

CAUSE FOR PROTEST

A team may protest any rule interpretation, score or official action (unless specifically excluded from protest) which they feel has caused some actual, non-trivial harm to their team, or has had a significant effect on their score.

Teams may not protest rule interpretations or actions that have not caused them any significant damage.

PROTEST PERIOD

Protests must be filed within one hour after the action being protested has occurred or the scores for the activity involving the protest subject are posted.

PROTEST FORMAT

Protests must be handed in in a written form and submitted by the team captain to FS Easter rules committee.

PROTEST BOND

The protesting team must post a 25 points bond to be deducted from their score if the protest is denied. The decision is final.

COVID -19 RULES

Covid – 19 rules and restrictions will be shared prior to the Event with the Team in a separate document.

FS EAST CAMP RULES

Those teams who booked their accommodation and intend to stay at the FS Easter Camp have to accept the following guidelines and rules. We created this list of rules to ensure all the necessary safety and comfort elements for the campers.

In emergency cases the event site emergency scenarios are the normatives (see page 2-3).

In any urgent cases you can call the emergency numbers.

As there will be other events in the FS Easter Camping, which are not connected to FS Easter, we would like to ask the teams for kind behaviour and do not disturb others!

Checking-in to the campsite

Checking-in to the campsite is handled at the Ticket Center of the camping site. After a successful registration campers get their wristbands and may proceed to the FS Easter Camp. Campsite registration is available between 18.00 PM and 8 PM on Thursday (June 17th), and between 09:00 and 18:00 on other days.

In case you arrive after the opening hours of campsite registration, call us in advance! (+36 20 460 2723)

All team members who booked their accommodation at the campsite must show up.

In case your wristband is lost or damaged you're able to request a new one both at the FS Easter Camp entrance and the Ticket Center of the event site by showing up your damaged one and/or event pass or giving us your full name.

RESERVABLE AREA

There are no restrictions.

Parking in the campsite

The campsite has a separated parking area. Please make sure to get a Car Pass in the Ticket Center of the event site, which assures that we're able to reach you on your cell if anything happens. There's a designated area for caravans and cars that are used for sleeping, these should be marked with a Camper Car Pass, that you can also claim at the Ticket Center or from the members of the Logistics Team onsite.

Please note, that you can't park your vehicles neither in the social area of the FS Easter Camp nor between the tents.

ATTENTION: Make sure that your caravan or car is not dropping or flowing. Prevent it!

Cooking, fires and smoking

Using open fire (e.g. charcoal, gas stove, firewood) for cooking is restricted to the Cooking - Fire area. Electric cooking devices can be operated at your own tents as well considering the limited power supply (1x16 A / team).

NOTE: If you have any cultural or religious objections regarding these rules, please contact us in advance.

Smoking is strictly prohibited in the sleeping area, in all tents, in the parking slots and in the toilet or shower containers.

FOOD & DRINKS

There will be food service in the Camping. You can pay with Hungarian Forint, Euro or credit card.

NOTE: Alcoholic drinks are forbidden at the event site - so just drink as much as you can "sleep out", to be perfectly fit for the next day.

BATHROOMS

The camping provides separate bathroom for male and female participants at the campsite with showers.

POWER SUPPLY

The electric network at the campsite provides 1x16 A for each team to consume. If you might need more power to supply your devices, please let us know prior to the event. You can also bring your own power supply - in that case you must prepare with one fire extinguisher for each of them.

SPONSORS



CHANGELOG

Version	Date	Modification	Page
1.0.0	15th June, 2021	Original document	-

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