

**FORMULA**  
STUDENT **EAST**  
FROM 28<sup>TH</sup> JULY

WHO IS  
READY?

EVENT  
HANDBOOK

# EMERGENCY INFORMATION



## MINOR INJURY

### MEDICAL CENTRE

Please accompany the injured person to the medical centre. Emergency aid is provided there. The medical centre is occupied every day round the clock.



## SEVERE INJURY

### CONTACT SOMEONE WITH A TWO-WAY RADIO

Every official and security has a two-way radio. Ask them to call the medical centre or an ambulance on radio channel 5.

### 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

### MAIN HOSPITAL

Petz Aladár Megyei Oktató Kórház  
Address: 9024 Győr Vasvári Pál street 2-4.  
Phone: +36 96 418-244  
Fax: +36 96 507 907  
E-mail: [info@petz.gyor.hu](mailto:info@petz.gyor.hu)  
Homepage: [www.petz.gyor.hu](http://www.petz.gyor.hu)  
(Also see directions on page 4)

112

## EMERGENCY NUMBERS

If an emergency occurs outside the times of the competition, call 112. This number works with all land lines, 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:	Tamás Csütörtöki	+36 30 370 0733	0-24h
Event Support:	Daniel Várnagy	+36 30 487 9651	0-24h
Regular emergency number:	112		0-24h

Event Control:	Zsolt Bojkovszky	+36 30 361 7678	8-20h
Ticket Center:	Judit Várnagy	+36 30 503 7161	8-20h



## BEHAVIOUR IN CASE OF REGULAR FIRES

(FUEL, OIL, PAPER, WOOD, ETC.)

- Call for help (fire fighters / ambulance) by either finding an official with a radio or calling 112.
- Assist injured persons 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 fire fighters/ambulance to arrive.
- Handling of the situation by the fire fighters, medical treatment provided by ambulance.



## 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 persons 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.
- Activate the alarm horn found in the charging area in successive short blasts.
- 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.

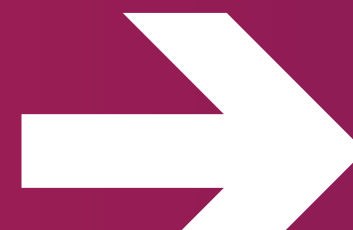


## BEHAVIOR IN CASE OF ELECTRIC SHOCK

- 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 with patience.
- 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 arrive. The victim might undergo ventricular fibrillation several minutes after experiencing a shock.



ROUTE TO HOSPITAL  
ON NEXT PAGE





FORMULA STUDENT EAST

EVENT SITE  
FORMULA STUDENT EAST

47.732584, 17.771167

47.733179  
17.808455

Greetings from the  
East village!

## DRIVING DIRECTION TO HOSPITAL

After leaving the event site turn right to road nr. 1. This road leads your to the city centre.  
Keep following the road, and turn left at Tihanyi Árpád street. Keep ahead until your reach Vasvári Pál street.  
The hospital is just on your right.

PETZ ALADÁR  
HOSPITAL



Address: 9024 Győr Vasvári Pál street 2-4.  
Phone: +36 96 418-244

47.671386, 17.649848



**28<sup>TH</sup> JULY 2016** | THURSDAY | ALL DAY  
**29<sup>TH</sup> JULY 2016** | FRIDAY | ALL DAY

- |  |                  |   |                   |   |                |   |              |
|--|------------------|---|-------------------|---|----------------|---|--------------|
|  | RESTRICTED AREAS |  | TRACK EXITS       |  | VIP TERRACE    |  | FUEL STATION |
|  | BUILDINGS        |  | OUTPOSTS          |  | BUSINESS BOXES |  | RAIN TEST    |
|  | GRASS FIELD      |  | TICKET CENTER     |  | WELDING AREA   |  | ENGINE TEST  |
|  | STRAW BALE       |  | EVENT CONTROLL    |  | TOILETS        |  | TEST TRACK   |
|  | FENCE            |  | DYNAMIC TOWER     |  | CHARGING TENT  |  | ACCELERATION |
|  | TRACK            |  | CATERING TENT     |  | TYRE CHANGE    |  | TILT TEST    |
|  | CONES            |  | OFFICIAL CATERING |  | STAFF BOX      |  | NOISE TEST   |

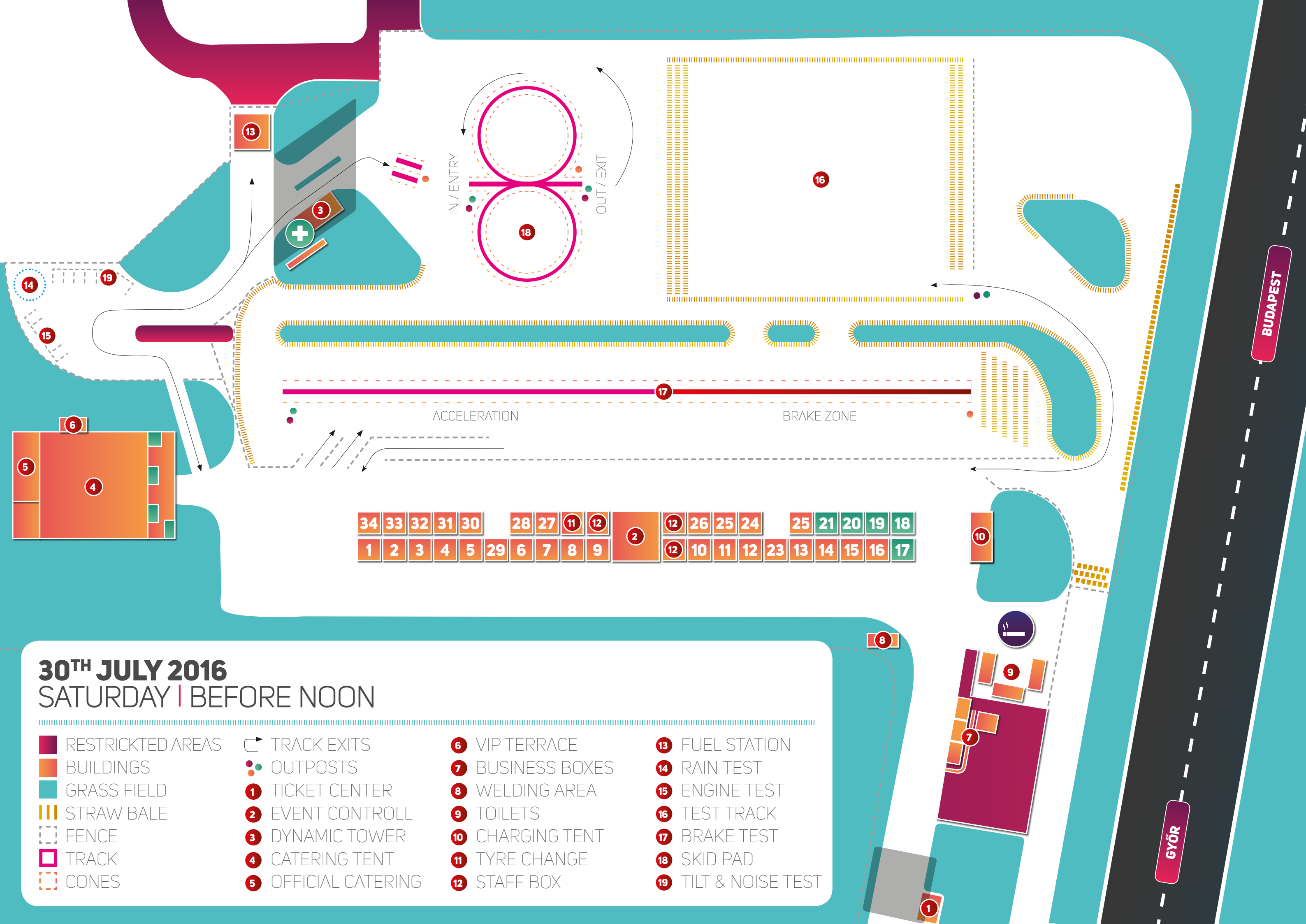
# 30<sup>TH</sup> JULY 2016 SATURDAY | BEFORE NOON

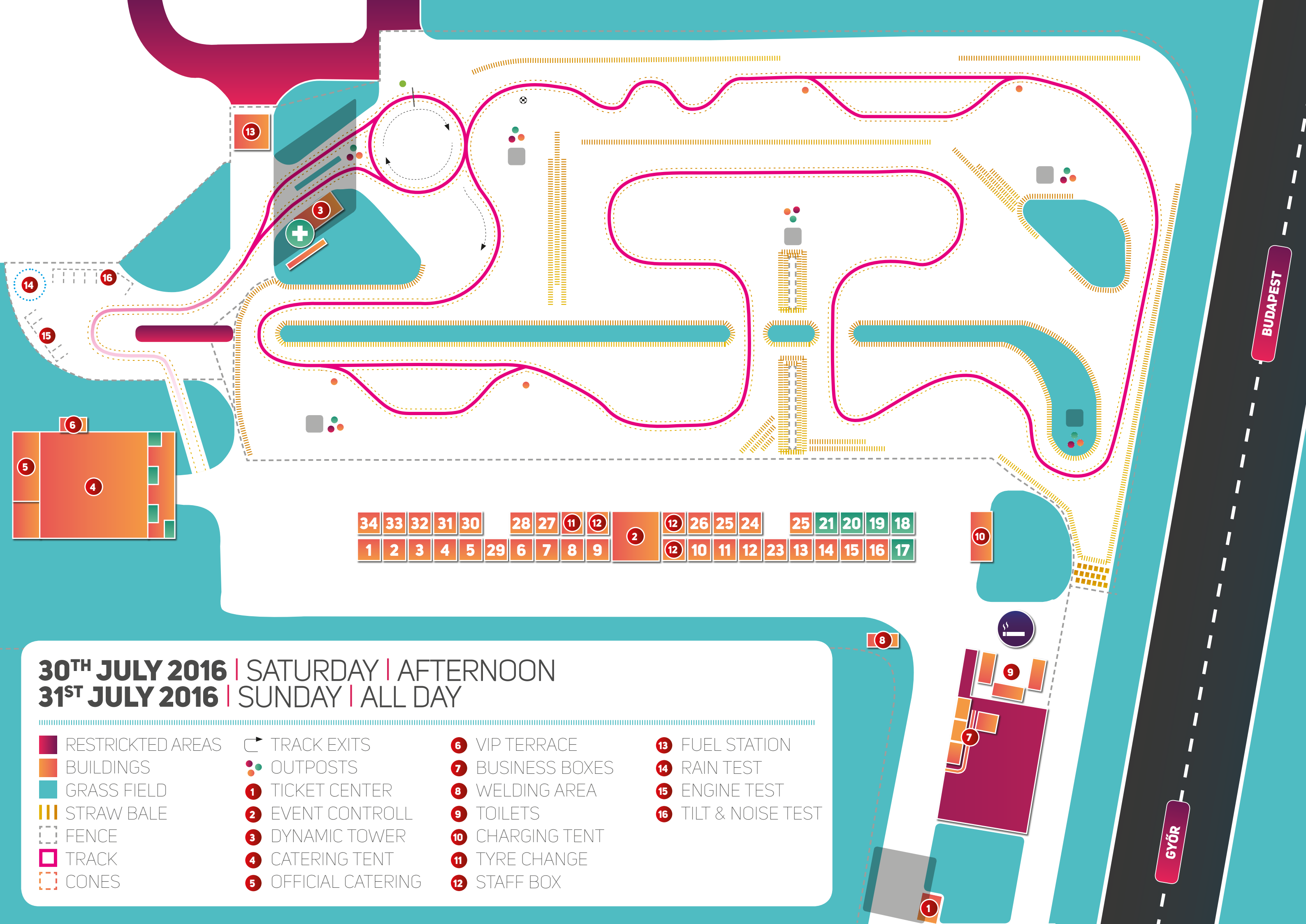
- RESTRICTED AREAS
- BUILDINGS
- GRASS FIELD
- STRAW BALE
- FENCE
- TRACK
- CONES

- TRACK EXITS
- OUTPOSTS
- 1 TICKET CENTER
- 2 EVENT CONTROLL
- 3 DYNAMIC TOWER
- 4 CATERING TENT
- 5 OFFICIAL CATERING

- 6 VIP TERRACE
- 7 BUSINESS BOXES
- 8 WELDING AREA
- 9 TOILETS
- 10 CHARGING TENT
- 11 TYRE CHANGE
- 12 STAFF BOX

- 13 FUEL STATION
- 14 RAIN TEST
- 15 ENGINE TEST
- 16 TEST TRACK
- 17 BRAKE TEST
- 18 SKID PAD
- 19 TILT & NOISE TEST





**30<sup>TH</sup> JULY 2016 | SATURDAY | AFTERNOON**  
**31<sup>ST</sup> JULY 2016 | SUNDAY | ALL DAY**

- |                  |                     |                  |                      |
|------------------|---------------------|------------------|----------------------|
| RESTRICTED AREAS | TRACK EXITS         | 6 VIP TERRACE    | 13 FUEL STATION      |
| BUILDINGS        | OUTPOSTS            | 7 BUSINESS BOXES | 14 RAIN TEST         |
| GRASS FIELD      | 1 TICKET CENTER     | 8 WELDING AREA   | 15 ENGINE TEST       |
| STRAW BALE       | 2 EVENT CONTROLL    | 9 TOILETS        | 16 TILT & NOISE TEST |
| FENCE            | 3 DYNAMIC TOWER     | 10 CHARGING TENT |                      |
| TRACK            | 4 CATERING TENT     | 11 TYRE CHANGE   |                      |
| CONES            | 5 OFFICIAL CATERING | 12 STAFF BOX     |                      |



# EVENT SCHEDULE



## 28TH OF JULY - THURSDAY

### EVENT SCHEDULE

- 07:30 - 19:00 **TICKET CENTER & EVENT SITE IS OPEN**  
07:30 - 20:00 **EVENT CONTROL & DRIVER REGISTRATION**  
08:30 - 18:00 **SCRUTINEERING** - DYNAMIC AREA  
+ TECHNICAL INSPECTION  
09:00 - 18:00 **SCRUTINEERING** - DYNAMIC AREA  
+ TILT, BRAKE & NOISE TEST  
16:00 - 16:30 **PANORAMIC PHOTOGRAPH**  
+ DYNAMIC AREA  
18:00 - 19:00 **TEAM WELCOME PRESENTATION** - CATERING TENT  
+ GREETINGS FROM THE OFFICIALS  
+ BASIC INFORMATIONS REGARDING THE EVENT  
19:00 - **FS VILLAGE FUN AREA OPENS**

### OTHER PROGRAMS

- 18:00 - 19:00 **TEAM WELCOME**  
+ WELCOMING OF THE TEAMS AND BASIC INFORMATION  
19:00 - **CONCERTS IN THE VILLAGE**  
+ TEAM BANDS ARE WELCOME

## 29TH OF JULY - FRIDAY

### EVENT SCHEDULE

- 07:30 - 19:00 **TICKET CENTER & EVENT SITE IS OPEN**  
08:00 - 08:30 **TEAM BRIEFING** - CATERING TENT  
08:30 - 18:00 **SCRUTINEERING** - DYNAMIC AREA  
+ TECHNICAL INSPECTION  
09:00 - 18:00 **SCRUTINEERING** - DYNAMIC AREA  
+ TILT, BRAKE & NOISE TEST  
09:00 - 18:00 **TEST TRACK OPEN** - DYNAMIC AREA  
09:00 - 18:00 **STATIC EVENTS** - EVENT AREA  
+ ENGINEERING DESIGN EVENT, COST AND SUSTAINABILITY EVENT, BUSINESS PRESENTATION  
11:00 - 13:00 **VIP & PRESS BRUNCH** - MEETING AT TICKET CENTER  
19:00 - **FS VILLAGE FUN AREA OPENS**

### OTHER PROGRAMS

- 11:00 - 13:00 **VIP & PRESS BRUNCH** - MEETING AT TICKET CENTER  
19:00 - **CONCERTS IN THE VILLAGE**  
+ TEAM BANDS ARE WELCOME

## 30TH OF JULY - SATURDAY

### EVENT SCHEDULE

- 07:30 - 20:00 **TICKET CENTER & EVENT SITE IS OPEN**  
08:30 - 13:00 **SKID PAD** - DYNAMIC AREA  
08:30 - 13:00 **ACCELERATION** - DYNAMIC AREA  
08:30 - 13:00 **TEST TRACK OPENS**  
08:30 - 13:00 **SCRUTINEERING**  
+ TILT, BRAKE & NOISE TEST  
14:00 - 14:30 **COURSE WALK** - DYNAMIC AREA  
15:00 - 20:00 **AUTOCROSS** - DYNAMIC AREA  
18:00 - **BUSINESS PRESENTATION FINAL** - CATERING TENT  
20:00 - 21:00 **ENGINEERING DESIGN FINAL** - DYNAMIC AREA  
19:00 - **FS VILLAGE FUN AREA OPENS**

### OTHER PROGRAMS

- 19:00 - **CONCERTS IN THE VILLAGE**  
+ TEAM BANDS ARE WELCOME

## 31ST OF JULY - SUNDAY

### EVENT SCHEDULE

- 07:30 - 19:30 **TICKET CENTER & EVENT SITE IS OPEN**  
08:00 - 08:30 **TEAM BRIEFING**  
08:30 - 09:00 **COURSEWALK** - DYNAMIC AREA  
09:30 - 18:30 **ENDURANCE & PARC FERMÉ** - DYNAMIC AREA  
1 hour lunch break with 30 minute time for Brake tests of possible rescrutineered teams  
19:30 - **VENUE CLOSING**  
21:00 - 22:30 **AWARDS CEREMONY** - AT FS VILLAGE  
22:30 - 04:00 **FAREWELL-PARTY** - AT FS VILLAGE

### OTHER PROGRAMS

- 21:00 - 22:30 **AWARDS CEREMONY** - AT FS VILLAGE  
22:30 - 04:00 **FAREWELL-PARTY** - AT FS VILLAGE

# EVENT DETAILS

## ORGANISATIONAL ASPECTS

### ARRIVAL TO THE EVENT SITE

**Schedule:** Wednesday, 27th July from 12:00  
**Location:** Győr-Gönyű harbor

The first moment for the teams of Formula Student East is arriving to the venue. The event site is open from Wednesday noon. Each arriving team will get their own number here in order of their arrival. This number defines the queue for registration and occupying the pits. The team captains can pre-register their teams for the event. After you got your number and your starter package (passes and armbands), then our colleagues will help you guide you to your pit for unpacking. You may have to wait if the pit lane is busy. You will also get your truck and car pass stickers here, which you have to stick on your car immediately.

### REGISTRATION FOR THE EVENT

**Schedule:** Wednesday, 27th July from 12:00 to 18:00  
Thursday, 28th July, 8:00  
**Location:** Ticket center

During the event registration procedure the team captains has to sign documents with standard terms. The team captain represents his/her own team with his/her signature. By accepting these documents 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.

Electric teams also have to register dedicated members with thorough knowledge about the vehicle's electrical systems: at least one Electrical Safety Responsible person (ESR), and at most 5 more team members who can enter the charging area (altogether maximum 6 persons). The ESRs also have to sign the registration document.

ONLY the Team Captain is allowed to register his team. He can be accompanied by only ONE team member and by the ESRs! The Team Captain has to sign the registration document and will then receive an Event Handbook, a truck pass, and all passes for his registered team members. Please get ready for this procedure in advance for a more fluent registration. If the registration procedure is over then all team members are ready to enter Formula Student East.

### SAFETY REGULATIONS REGARDING ENTRANCE

Please pay high attention and DO NOT block any emergency exits of the event. Please follow our marshals' instructions at all times. DO NOT park your truck to the gates until the marshals order you to do so. Please first park your truck in the car park and ask for our marshals help about getting in.

### DRIVER REGISTRATION

**Schedule:** Thursday, 28th July from 8:00  
**Location:** Event control

Each team has to register at least 4 drivers. The drivers has 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.

### FIRE EXTINGUISHER HANDOUT

**Schedule:** Thursday, 28th July from 8:00  
**Location:** Event control

For safety reasons you have to pick up a fire extinguisher and a regular manual sticker for it at the Event Control. The deposit for the fire extinguisher is 25 euro, which you will get back after finishing the event. The fire extinguishers has to be returned to the Event Control by 19:00, 31st July. This is also the time when you get back your deposit for the extinguisher.

### PARKING AND VEHICLE PASSES FOR THE EVENT

You can park your cars in our regular car park, at the front of the Event gates. The parking spaces are limited, the spots are filled in first arrival queue. Every team who is parking their cars in the dedicated team parking zones has to have a valid car pass sticker on its front window. These stickers are handed out at team registration and also can be requested later at ticket center.

You can only enter the event site with a valid car pass on your car. The car pass has 4 fields: team name, driver's name, cell phone number, car plate number. Each cell has to be filled out on the spot and stuck on the windscreen.

Trucks only can be parked temporarily at the event car park for the time of unpacking. Later the trucks can be parked for the event days at the campsite. Please look up campsite parking section for details.

**NOTE:** The exit routes on have to be unobstructed all the time, that is why we only allow 3-4 trucks inside for unloading at the same time. Please follow our guides on unloading your vehicles.  
The pits can be unpacked AFTER endurance. Teams who finish the competition earlier can ask our colleagues for help or early unpacking.  
The event parking area has to be left until 19:30 on Sunday (31st of July).  
Inside the event area walking speed is the limit for cars too, 5 km/h maximum!



# Greetings from



## THAT LAST BEER..

If you have to go, then you have to go

## RARE OR MEDIUM?

Have a barbeque at the Grill & Fun area  
or get some voltage in the wires

## YOU LIKE IT DIRTY?

You won't have to! Have hot shower if needed

## NEED HELP?

The Village reception is here to help you

## PARK THE IRONS

Leave your cars & trucks  
next to the Village for the night

## THE SHOW MUST GO ON!

Take a seat and enjoy the concerts and do some chit-chat

## GRAB SOME BEVERAGES!

Grab some booze and chill with the mates

## LET'S ROLL!

We bring you the night on the stage

## POWER UP!

Charge your devices and get ready for tomorrow

## WE ARE HERE TOO!

Most of our officials will also sleep in the Village

## BUILD UP YOUR OWN VILLAGE!

Arrange your own neighbourhood as you like

# East village!

## ACCOMMODATION - FS EAST VILLAGE

### BASIC INFORMATION

Those teams who booked their accommodation and intended to stay at the FS East village 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 Villagers.

Most of the officials are also staying in the Village for the nights, so in any cases find an official white shirt or an event support member - light blue shirt officer - to help you solve these issues. In emergency cases the event site emergency scenarios are the normatives. In any urgent cases you can call the emergency numbers - page 2.

FS East village is not only a night accommodation, but also a social area, where you can power up, get some rest or have some drinks with your new neighbours. On the campsite catering area you can buy different drinks and grilled goods for reasonable prices. Please note that alcoholic drinks are forbidden on the event site - so just drink as much as you can "sleep out", to be perfectly fit for the next day. Also note that at the event entrance we may test you. You can read further notes about alcohol consumption on page 23.

The final results and the award ceremony will also take place in the FS East village on the last day. Right after the award ceremony we invite you to celebrate the 4 days.

### AREAS AND ACTIVITIES OF THE VILLAGE

#### FOOD & DRINKS

Catering opens on the campsite after the event day, so you'll be able to have dinner and snacks in the evening. After a few bites you can have a few sleep. In the catering area we serve different kinds of drinks including alcoholic and non-alcoholic beverages. You can pay with Hungarian forint or with Euro.

#### POWER SUPPLY

You can not charge or use power supply in the tents, but you're able to power up at the Energy Island, which is right in the centre of the Village. You can leave your tech stuff for the night in the Secure Box for night power. We will give you a Secure Ticket with which you can get your stuff back in the morning.

We recommend to use the Energy Island only for your mobile devices - such as cell phone or notebook. This area is also suitable for discussions and preparing for the next day.

If you may need more power to supply heavier devices with more power consumption, then you can use power outlets from the Grill & Fun area. In case your team is coming with an aggregator, please let us know, and ask for our assistance to place it for the most appropriate place on the site. Our colleagues will help you find the best spot for it - to be ready for use without disturbing anyone.

#### VALUABLES

You're also able to leave your valuable belongings in the Secure Box. We can not take responsibility for your stuff that you leave in the tents, so bring your diamond and gold treasures to the Secure Box. Our colleagues will keep them under seven locks. You can take them out with the Secure Ticket and with your ID card.

#### SECURITY

Only participants and officials are allowed to enter the premises of the Village that our security guards check all times. They're also going to secure the place at night. You're able to turn to them if you face an issue regarding your safety.

#### PARKING

The car park is located right next to the campsite. The huge trucks can be parked here as well. You will get a sticker for your cars to assure that we're able to reach you on your cell if anything happens.

#### FUNTIME

The campsite is the place for chilling and having fun – that's why entertaining programs are also in the plan. Alcoholic drinks are allowed on the premises of the Village, however it can't affect your participation at the event site on the next day. Alcoholic beverages are still BANNED from the event site and we're taking it very seriously for your own safety!

There will be music concerts for you in the evenings, but this not a festival. We want to keep you fresh, so every loud program will end around 11pm. If you may wish to continue the fun, make sure it won't disturb anybody else who want to prepare for the next day - with sleep or with preparation.

#### BATHROOMS

We're going to provide separate bathroom containers for male and female participants on the campsite with showers.

### CHECKING IN AND BEHAVIOUR

#### CHECKING-IN TO THE CAMPSITE

Checking-in to the campsite is handled at team registration at the ticket center of the event venue from 12.00 pm on 27th July, Wednesday and all four days of the event between 7.30 am and 19.00 pm. In case you arrive before or after the opening hours of the ticket center, you'll be able to check-in at the reception of the campsite.

All team members who booked their accommodation at the campsite must show up and sign the check-in form in order to receive their wristbands that provides entrance to the campsite. Please note that we can only give out one wristband per person which is going to be put on you by our staff right after you receive it.

Teams or additional members who couldn't complete the payment in advance by bank transfer are able to pay by cash at check-in. Please prepare to pay the whole amount of the accommodation fee for the team in one installment. We're only able to give out wristbands to the members of the teams who've already completed the payment.

#### ADMISSION

Team members living at the FS East Village are required to wear the yellow "I'm a camper!" wristbands for the whole time of their residence. You are only able to enter the premises of the campsite if you're wearing the wristband, which is checked all times by our staff at the entrance and they may inspect them at the entire venue. Visitors without a wristband are required to leave the campsite.

#### REQUESTING A NEW WRISTBAND

In case your wristband is lost or damaged you're able to request a new one at the reception of the campsite and the ticket center of the event site as well by showing up your event pass or giving us your full name. Please note that we can only give out one wristband per person which is going to be put on you by our staff right after you receive it.

#### CHECKING-OUT FROM THE CAMPSITE

Before you leave the team captain/accommodation manager must check-out the whole team at the reception of the campsite. We're going to give out the original copy of the final invoice at check-out as well. The campsite closes at 14.00 pm on Monday at the latest, so please leave the premises of the FS East Village on time.

#### AWARDS CEREMONY & FAREWELL PARTY

As the Awards Ceremony and Farewell Party take place at the FS East Village, participants who are not staying at the campsite are able to visit the campsite on 31st July from 19.30 p.m. All visitors must show up their team member or VIP pass at the reception to enter the campsite. On any other days of the event visitors are able to attend the programs of the FS East Village only by requesting a camping pass at the ticket center in advance. Please note that we can only give out one registered camping pass per person per night.

#### BEHAVIOUR IN THE VILLAGE

The detailed Village rules can be found on the event site several places hanging. You can also find the village rules on our webpage - <http://fseast.eu/villagerules>. The Village rules contains details about regular behaviour guidelines - what, where and how can you do in the village.



# CONTACT INFORMATION

## TICKET CENTRE

**Schedule:** From 8:00 to 18:00 all event days  
**Location:** Event site entrance

Teams and spectators, receive their passes for entering the venue at the ticket centre.

**ONLY** the event team captain may pick up the passes for distribution to the rest of the team members.  
No single passes will be handed out to team members. For the detailed procedure see chapter 2.4.1. If you are not a member of a team, you may purchase tickets at the ticket centre.

## PRICES:

**One day ticket:** 10 EUR / 3000 HUF

**Four day ticket:** 25 EUR / 7500 HUF

## EVENT CONTROL

**Schedule:** From 8:00 to 18:00 on Day 1-3  
From 8:30 to 19:30 on Day 4

**Location:** Event control – middle of pitlane

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 ESRs and charging area staff
- Fire extinguisher handout point
- Transponder handout point
- Energy meter handout point for electric teams
- Lost and found
- Feedback

# OFFICIALS (SELECTION)

At the venue, we will answer your questions directly. To contact us during and after the event, please write us via email at [hello@fseast.eu](mailto:hello@fseast.eu) (you can find the dedicated e-mail addresses on our website for specialized topics).  
The fastest and easiest way to communicate with us is to find us on-site - ask an official with a two-way radio to find the right person for you. Up to our on-site duties we will help you in a few minutes :)



**Alexander DUDÁS**  
Board | Technical Manager



**Gergely LÁGLER**  
Board | Technical Manager



**Tamás CSÜTÖRTÖKI**  
Board | Event Manager



**Csilla SZALAY**  
EC | Static Events Leader



**Imola DEBRECZENI**  
EC | Business Event Leader



**László TRESZKAI**  
EC | Electrical Scrutineering and E-safety Leader



**Máté BOGNÁR**  
EC | Dynamic Area Leader



**Roland TARCSAI**  
EC | Manufacturing, Cost and Sustainability Event Leader



**Tamás BERKECZ**  
EC | Score Counting Leader



**Tamás HENCZI**  
EC | Dynamic Area Deputy Leader



**Tamás LÉNÁRT**  
EC | Engineering Design Event Leader



**Zoltán BÁLINDT**  
EC | Mechanical Scrutineering and Safety Leader



**Álmos Dávid TÓTH**  
OT | Dynamic events



**Bálint HANULA**  
OT | E-scrutineering



**Bálint HEREIN**  
OT | Scrutineering & Safety



**Dániel CSAPÓ**  
OT | ESF Supervisor & E-scrutineering



**Dávid KISS**  
OT | Charging Area & E-scrutineering



**Imola NAGY**  
OT | Scoring, Business Event



**Jan KLINGER**  
OT | E-scrutineering



**János TÓTH**  
OT | Energy metering, Engineering Design Event & E-scrutineering



**Júlia SZILVÁSSY**  
OT | kmokkmom



**Péter JÓZSA**  
OT | Scrutineering & Safety



**Richárd KLÉRI**  
OT | Scrutineering, Engineering Design Event & Dynamic Events



**Sebastian WAWERSIG**  
OT | E-scrutineering & Engineering Design Final



**Zdenek HOUF**  
OT | E-scrutineering & Dynamic Events & Engineering Design Final



**Zoltán MAKAI**  
OT | SES & IAD Supervisor & Engineering Design Event



**Zoltán NÁDUDVARI**  
OT | E-scrutineering



**Zoltán VARGA**  
OT | Business Event



**Dániel VÁRNAGY**  
OT | Event Support Leader



**Szandra HOFER**  
OT | Marketing & Team communication



**Zsolt BOJKOVSKY**  
OT | Event Control Leader



**Attila BARATI**  
OT | Security Staff Leader



**Benedek NAGY**  
OT | Speaker



**Judit VÁRNAGY**  
OT | Event Support

### SCRUTINEERS

Áron Szabó, Bence Müller, Christoph Beißwanger, Dániel Magyar, Dániel Schreiber, Dávid Kulcsár, Eugen Hoffelner, Gábor Papp, Gergely Légrádi, István Király, Kristóf Máté, Marcus Nenzel, Oliver Kesel, Ralf Breitmayer

### TRACK MARSHALS

Vivien Bánóczki, Roland Besnyi, Gábor Bozó-Bódi, István Bör, Botond Csathó, Levente Csathó, Máté Cseh, Dóra Dankó, Bence Glatz, Attila Gyuris, Dávid Fülöp, Dóra Hajas, András Horváth, Balázs Huszka, Tamás Kis, Roland Komlósi, Ármin Kovács, Fruzsina Kovács, Richárd Laffer, Kitti Anikó Mészáros, Lilla Molnár, Dániel Müllner, Bálint Nagy, Valentin Németh, Ákos Papp, Anett Póczi, Márton Ádám Porkoláb, László Rási, Solt Remete, Orsolya Simon, Réka Zalai, Zsolt Tabakov, Benedek Tajti, Ámos Dávid Tóth, Emese Flóra Tóth, Dávid Farkas, Dániel Farkas, Ádám Bényei, Ákos Matyus, Gergely Légrádi, Bence Müller, Dániel Magyar, Kristóf Máté, Gábor Papp, Dániel Schreiber, István Király, Dávid Kulcsár

### EVENT SUPPORT

Ilok Andrea, Imre Iván Csonka, Karin Baranyai, Krisztina Horicsányi, Dénes Zénó Lovászi, Krisztina Müller, Ágnes Oláh, Szabolcs Veréb, Zsolt Halász

## 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. During the event all announcements can be found on the following webpages:

<http://fseast.eu/announcements/>

## PIT AND INFIELD TIMES

The pits are open from Wednesday, 27th of July 12:00 to 18:00 and from 7:30 to 18:30 on every day until Sunday. In case you have to work on the car over the night, you have to contact the officials. Upon their decision you can bring your car out from the event site and can work on it during the night. Re-scrutineering may be required for continuing the event. Working on the tractive system accumulator outside the event area is NOT allowed – any broken FS East seals on the accumulator package at entrance will mean a disqualification from all dynamic disciplines.

### PIT EQUIPMENT

In every pit there is regular 230 V AC, 16 A power sockets.

### SURVEILLANCE

After 18:00, 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 shaders at venue closing.

## TRANSPONDERS AND TIMEKEEPING

You get a transponder used for timekeeping at Event control in charge for 50€ deposit. You have to mount on your car yourself. The transponder must not be removed until the competition ends, since it is vital for the timekeeping system. At the end of the competition, please return the transponder to Event control, where you will get back your deposit..

The transponder must be placed forward of the front roll hoop, on the right side of the driver, no more than 60 cm above the ground. The transponder must be oriented so that its number reads vertically, with the right side up. There should be an unobstructed path between the ground and the antenna on the bottom. Please mount the transponder at a place where it is protected from obstacles.

If you are unsure of the position or orientation, or if a transponder comes loose or falls off, please contact a member of the timekeeping team at Event control.

Please note that the shown data is unofficial. No protests can be handed in based on the live-timing.

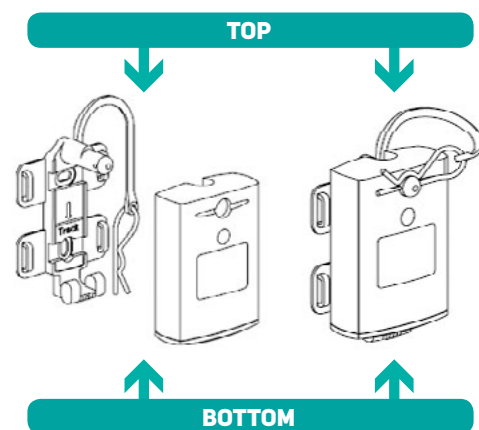
## RULES AND GUIDELINES

Everyone (participants, volunteers, & spectators) at Formula Student East 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 on 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 Formulas Student East Village (the campsite) other rules apply for alcohol consumption. Please find the detailed Village rules on page 18-19.

## FIRES AND SMOKING

No open fires are allowed in the pit area and in the engine test area. This includes BBQ grilles, 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 around the toilet containers 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 ESR and at least one more team member who can interfere in case of emergency must attend every activity which involves the tractive system.

**For activities on the inactive tractive system, please keep to the following procedure:**

1. Separate the car with a barrier tape, provided by FS East on request
2. Remove the tractive system master switch
3. Check that there is no voltage between the HV measurement points
4. Open the HVD
5. In case of leaving the car with TS parts accessible, install a sign that declares the car as electrically secured. Only the ESR who installed the sign may remove the sign and the barrier

**In case an activation of the tractive system in the pit is needed for testing purposes, please keep to the following procedure:**

1. Separate the car with a barrier tape, provided by FS East on request
2. The car must be jacked up and the driven wheels demounted
3. One team member must be prepared to push an emergency button at any time
4. Team members who take part in the measurement activities must wear compliant safety gloves and use appropriate measurement devices and tools
5. The tractive system must only be active when it is necessary
6. Opening the accumulator containers is only permitted in the charging area, not in the pits. Please read the applicable rules in section xxx of the event handbook attentively

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. The FS East rules in sections 7.1 “Pit rules” and 7.2 “Charging area” must be adhered to when operating or servicing electric vehicles.

**If any of the above mentioned instructions is not obeyed, it may result in deduction of points or disqualification.**



## 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 (László Treszkai) during the event by latest Thursday 16:00. 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. Please read the applicable rules in section 3.1.5 attentively.

**!! FS ENGINES MAY NOT BE RUN IN THE FS EAST VILLAGE !!**

## ENERGY METERS

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

You have to install the energy meter in the car prior to E-scrutineering, according to the energy meter instructions available on the FS East website. The package contains all necessary crimps and connectors. You can ask our E-scrutineers for help with the installation.

The proper functioning of the energy meter will be tested during the second part of E-scrutineering.

An E-scrutineer will read out your energy meter 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 FSAE 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 energy meter has to be removed from the car and returned to the event control, where you get back your deposit. Please note that if your energy meter is located inside the accumulator container, you have to remove it inside the charging area.

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

If you have any questions regarding the energy meter, please ask for the energy meter responsible at the event control.

## WELDING

Formula Student East provides an approved welder. Welding is allowed in the designated welding area only.

## TYRES

FS East provides a tyre changing service. The Marso pit can be found on the dynamic side of the pitlane. For details please look up the pit schedule.

## 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.**

## FIRE EXTINGUISHERS

Your fire extinguishers are to be immediately accessible at all times.

All team members must be familiar with their use. At least one fire extinguisher must accompany the car wherever it goes.

## VEHICLE MODIFICATIONS

If you make any major modifications to your car beside FSAE Rule T1.2.2, cars must return to scrutineering for re-approval.

## FLAGGING

All drivers must know the competition-flagging signals.

## BEHAVIOUR

**Alcohol and drugs have no place at this event.** Alcohol is only allowed on the campsite and on the farewell party. Roller blades, scooters, bicycles and self propelled vehicles are not allowed on site.

## TESTING

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

## 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 both 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 East are compliant with the FSAE rules 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 at the Catering tent at 8:00, on Friday, Saturday and Sunday. All drivers and team captains for that day must attend. The briefing contains general event information and detailed information about the dynamic events of the day.

Wristbands will be handed out to the participants of the morning briefings. Without these wristbands, attending the dynamic events is NOT POSSIBLE. Missing the briefing means no entrance to the dynamic events.

## ACCESS TO THE DYNAMIC AREA

Every team will receive four rubber wristbands labeled “Dynamic pass”. With these wristbands at most four team members may enter the dynamic area or the engine test area, including the driver and/or the ESR. Drivers may take them off for driving, but must put them back on afterwards. Cheating on handing out wristbands from the dynamic area is strictly forbidden and will be penalised!

## WEATHER

This is one of the factors which can not 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, energy meter...). 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 (FSAE RULE T1.2.2)

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.**

## ENGINE TEST AREA

**Schedule:** From 8:00 to 18:00 on Day 1-3  
From 8:30 to 19:30 on Day 4

**Location:** Northeast end of the event site (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 (IC)

**Schedule:** From 8:00 to 18:00 on Day 1-3  
From 8:30 to 19:30 on Day 4

**Location:** Dynamic area, behind the tower

The fuel station will provide standard Shell fuel to each car as requested by the team (95, 98 Octane and E85).

**No other fuel or additives are permitted.**

Be aware that no participant is allowed to bring fuel to the competition.

FS East will provide all fuel for the competition at the fuelling station.

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

**Follow these safety guidelines while in the fuelling area:**

- All engines must be turned off; cars are to be pushed to and from fuelling.
- Only the driver, wearing a driving suit, is permitted in the area as fuel is dispensed.
- No mobile phones are allowed in the fuelling area.
- The tank is to be filled to the fuel level line each time the car is refueled.
- Re-fueling must be possible without the removal of any body parts of the car.

The first time the vehicle is fueled, the car must proceed (with the engine off) to the tilt table.



## CHARGING AREA (EV)

**Schedule:** From 8:00 to 18:00 on Day 1-3  
From 8:30 to 19:30 on Day 4

**Location:** Charging Area – at the southern end of the pitlane

Opening of or working on the accumulator containers, including charging them, is only allowed in the charging area, during the opening hours.

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

**Only chargers marked during E-Scrutineering may be used.** Three phase 32 A sockets and single phase 16 A sockets will be available in the charging area.

**An ESR 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 with the maintenance plugs not removed. No more than four members of any electric team are allowed in the charging area at the same time.

**The organisers reserve the right to declare the charging area “full”.**

## TECHNICAL & SAFETY INSPECTION

**Schedule:** From 8:00 to 18:00 on Day 1-3  
From 8:00 to 12:00 on Day 4

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

1. E-scrutineering part 1
2. Mechanical scrutineering
3. E-scrutineering part 2
4. Tilt table test
5. Rain test
6. Brake test

### IC CARS

1. Mechanical scrutineering
2. ETC test (if applicable)
3. Tilt table test
4. Noise test
5. Brake test

Passing any of the above steps is marked with a sticker on the technical inspection sticker.

**Cars which have not finished scrutineering by the lunch break on Saturday will not be allowed to compete in the dynamic events.**

## E-SCRUTINEERING PART 1 (EV)

**Location:** in the pit of your team

The first part of the electrical scrutineering will take place in the pits, where scrutineers will check that your car fulfills the EV rules without activating the tractive system.

Cars are inspected in the order of registration quiz results. 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:**

- Accumulator charger,
- All accumulator containers to be used at the event,
- Accumulator container hand cart,
- Tools and protection equipment as defined in the FSAE rules,
- Laptop with connection to the AMS.

During scrutineering you have to show live cell voltage and temperature data from the AMS.

## MECHANICAL SCRUTINEERING

**Location:** in the pit of your team

The mechanical scrutineering will take place in the pits, where scrutineers will check that your car fulfills the FSAE and FS East 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 driver suits and other safety gear: arm restraints, helmets, suits, gloves, eye protection, balaclavas, socks and shoes
- All the tyres you plan to use at the event
- 2 fire extinguishers
- Quick jack and push bar

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.

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.

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“ (per FSAE rule S2.6), 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.

## E-SCRUTINEERING PART 2 (EV)

**Location:** Engine test area

During the second part of electrical scrutineering it will be checked that your car fulfills 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.

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.

## TILT TABLE TESTING

**Location:** Dynamic Area

Tilt testing checks if the vehicle complies with the liquid spillage and rollover stability rules. Please present the car in ready-to-race condition, meaning all the liquids of the car should be filled properly, and all components of the car are mounted.

The vehicle will be placed upon the table with the tallest driver aboard. The vehicle should be oriented on the tilt table in the direction that is most likely to create spillage. The table will then be tilted to an angle of 45 degrees. There must be no fluid leakage at this angle. If the vehicle passes this test, the angle is increased to 60 degrees, representing a cornering force of 1.7G. If the upper wheels remain on the table, the vehicle passes. (Some vehicles may lift one wheel. The station manager should be consulted if this occurs.) The person in charge at the tilt table will sign the inspection form, which travels with the car. A sticker is applied on the car, to indicate it passed the tilt table test.

Should the vehicle fail at either of the two angles, the car must be repaired and re-tested.

Vehicles may be asked to return to this station for re-certification at the discretion of the officials.

### **Safety guidelines for the tilt area:**

- All master switches off at all times. They can be removed from the car.
- Push the car on and off the table, taking care to avoid damage to the vehicle.
- Inside wheels are to be placed against the guard of the tilt table.
- Attach a strap to rollover hoop and side of table which is to be elevated. Allow a little slack.
- Use absorbent material to soak up leaks (may be obtained at fuel station). Keep a fire extinguisher at hand.

## RAIN TESTING (EV)

**Location:** Dynamic Area

Teams have to pass a special rain test during scrutineering, according to FSAE rule EV7.3. 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 (IC)

**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. Sound level must not exceed 100 dBC at idle engine speed and 110 dBC at any engine speed.

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 of all four wheels at the same time. A second marshal waves a red flag as the driver enters the box.

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

**Schedule:** From 8:00 to 18:00 on Day 1-3  
From 8:00 to 12:00 on Day 4  
**Location:** Southeast quarter of dynamic area

On Thursday and Friday the whole day long, and on Saturday before the lunch break, part of the dynamic area is available for testing.

The ground is made of concrete. Teams may use the test areas 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.



# DYNAMIC DISCIPLINES

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

## SKID PAD

**Schedule:** From 8:30 to 13:00 on Day 3

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. 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.

Skid Pad will be carried out on a wet track as a suspension challenge to judge how teams cope in such conditions.

## ACCELERATION

**Schedule:** From 8:30 to 13:00 on Day 3

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.

The acceleration event is located parallel to the paddocks. After passing the finish line of the Acceleration, there is a big slow down area before you have to turn right to return to the start for the second run. While passing the spectator area on your way back, please maintain a slow car speed for your safety and that of the spectators.

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.

## AUTOCROSS

**Schedule:** From 13:30 on Day 3

Red cones are used for the track boundary and for the slalom turns, and white cones are used for the entrance and exit of the course. The track direction is counterclockwise. 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.

## ENDURANCE

**Schedule:** From 8:30 to 19:30 on Day 4

The endurance track will be set up for Sunday. Anyone with a dynamic pass can visit the track before the endurance starts. The track direction is counterclockwise. The colour of the cones is similar to the Autocross event. The additional overtaking lanes are marked with white cones.

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

The IC and EV cars race together, with the slowest car starting at 08:30. The following car starts about 3 minutes later. Maximum three cars will be on the track at the same time. During the driver change, two scrutineers check the car. After successful driver change, the second driver drives to the entrance gate. If a marshal causes the driver change to take longer than 3 minutes, the time caused by the marshal will be subtracted. Timekeeping is watching for these incidents.

If you get a blue flag while driving, please drive into the next overtaking lane. 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. Rear-ending a slower car will definitely lead to a disqualification of the faster car!

Vehicles that successfully finish Endurance and those that make it past the driver change must report to the Parc Fermé upon request of scrutineers. They will stay there until passing the post-endurance scrutineering.



### ONCE IN THE BAND CAMP..

We wanted to create you something special. That is why we organized some events for the nights as well. We bring you the sponsors not only for the event but to the campsite as well! Our main sponsors will catch the mike and threw you concerts at nights. To be frank not only the sponsors but also the organizers!

### WHAT'S WRONG, MCFLY? CHICKEN?

So don't be a chicken, bring your boys and girls and smash us to the ground with your band if you dare! There will be a full audio concert background for your band. Just write us to [hello@fseast.eu](mailto:hello@fseast.eu) if you need anything special, and we will see what we can do :)

# STATIC EVENTS

## ENGINEERING DESIGN EVENT

**Schedule:** Design Event on 29th July  
Design Finals on 30th July  
**Location:** Design Event in Team's pits  
Design Finals in the Dynamic Area

Formula Student East is an international design competition. This means that the design event is the most important static event. The winner of the design event will get 150 points.

**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

## JUDGING SEQUENCE

**At Formula Student East, design judging will involve two parts:**

- Initial judging of all vehicles
- Final judging, ranking the top vehicles.

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.

There is no time limit in the design finals. The design finals are not public. The number of team members during design finals depends on the number of finalists and will be published with the list of finalists.

To score high in the design event, we would suggest you to bring all necessary papers 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 Caroll Smith "Everything You Wanted to Know about Design Judging" paper available on the Formula SAE website.

The judges will be around on Friday. Feel free to ask them about your car. They will be more than happy to answer all your questions.

## COST, MANUFACTURING AND SUSTAINABILITY EVENT

**Schedule:** 29th July  
**Location:** Team's pits

## THE COST REPORT

The actual cost report is due approximately six to seven weeks prior to the event at the venue. A printed copy of the report must be submitted in person at the registration, which has to be identical to the uploaded Cost Report.

In case of differences, an addenda must be presented along with the report.

The Cost Report is judged on the basis of the cost of the car and quality of the cost report. The former is determined by the cost of the components and the manufacture in accordance with the cost tables and established practices.

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 judges will add penalties if costs are unreasonably low (by experience of the judges), if errors are detected, or if items are omitted.

## THE REAL CASE SITUATION

The Real Case Scenario was posted 3 weeks prior to the event. The teams are expected to give a 10-minute presentation on their results and solutions for the given problem during the Cost Event.

## SUSTAINABILITY PRESENTATION

The Sustainability Task was released 3 weeks prior to the event. The teams are expected to give a 10-minute presentation on the topic during the Cost Event.

## ADDENDUM

Addenda to the report must be created to cover any necessary changes made to the car. These addenda will be only accepted from the time of registration to 18:00 CEST on July 28th, 2016. Use the FSAE cost addendum form given in the 2016 Formula SAE® Rules Appendix S-5, and you are expected to cover the changes by modifying the spreadsheets of the original assemblies/parts as well.

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.

**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
- 10 min for the presentation of "Real Case Scenario"
- 10 min for the presentation of "Sustainability Task"
- 5 min for consultation of the judges
- 5 min for feedback to the teams.

# BUSINESS PLAN PRESENTATION EVENT

**Schedule:** 29th July  
**Location:** Business containers (at Catering tent)

## THE PRESENTATION

Competing teams have to keep a presentation to upper level executives of an imaginary manufacturers/investors. 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 maximum 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 PROCESS

The business plan presentation event will be held in a three step approach. In advance, every team has to submit a business logic case before the event. The first presentation round (incl. deep dive topic) will be relevant for all teams and the finals will be relevant only for the top teams decided by the judges given by the results of the first round.

## BUSINESS LOGIC CASE

Prior to the Business Plan Presentation the teams have to send their logic case, which must not exceed one page. The teams have to use the given official format. The objective of the logic case is to teach the participants that need to be considered when a company embarks on development of a new product, taking into account the cost; identification of market and likely sales volume; profitability; the key features applicable to the selected vehicle concept and target market size. This is the only document which ensures that all three static events are approached with a single common concept and presented to each set of static judges in the same manner.

## FIRST PRESENTATION ROUND

During the first round, 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.

## PART OF PRESENTATION: DEEP DIVE TOPIC (DDT)

All teams receive a given task prior to the event, a specific deep dive topic. This task has to be presented separately after the main presentation. Judges are requested again to ask questions and after score.

**Schedule for each presentation** (45 minutes maximum for each presentation):

- max. 5 minutes for set-up & preparation
- 10 min for Business Presentation
- 5 min for questions on the presentation
- 7 min Deep Dive Topic presentation
- 3 min for questions on the topic
- 5 min Judge time (for debriefing and scoring decision)
- 5 min de-installation
- 5 min for feedback to the teams

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

During the presentations, only judges and the presenting team participate.

## FINALS

The top teams decided by the judges given by the results of the first round will reach the presentation finals. These finals will be held on Saturday afternoon. The teams will present to the selected judges and to all others interested (i.e. other teams, guests etc.).

The finalist teams will present directly one after the other without any questions/interruptions by the judges, based on order of drawing of lots prior to starting. Afterwards, the judges will hold a de-briefing and decide on the ranking of the finalist teams.

**The scores of the finalists are:**  
“n”<sup>th</sup> Place  $75 - (n - 1)$  points

**The scores of the non-finalists are:**  
Presentation Event score =  $(P_{\text{your}} / P_{\text{max}}) \times (75 - n)$

If a team does not attend the finals despite its nomination, it will automatically receive 71 points. 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 & PROTEST

## RESULTS

The results will be posted on the results board as soon as they are available. Furthermore, they will be published online at the FS East website. Protest time will be after the results, but should end 3 hours prior to the final.

## PROTESTING OF RESULTS

### 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 East rules committee, represented by Gergely Lágler 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 East rules committee.

### PROTEST BOND

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

### DECISION

The decision of the officials regarding any protest is final.

# USEFUL INFORMATION

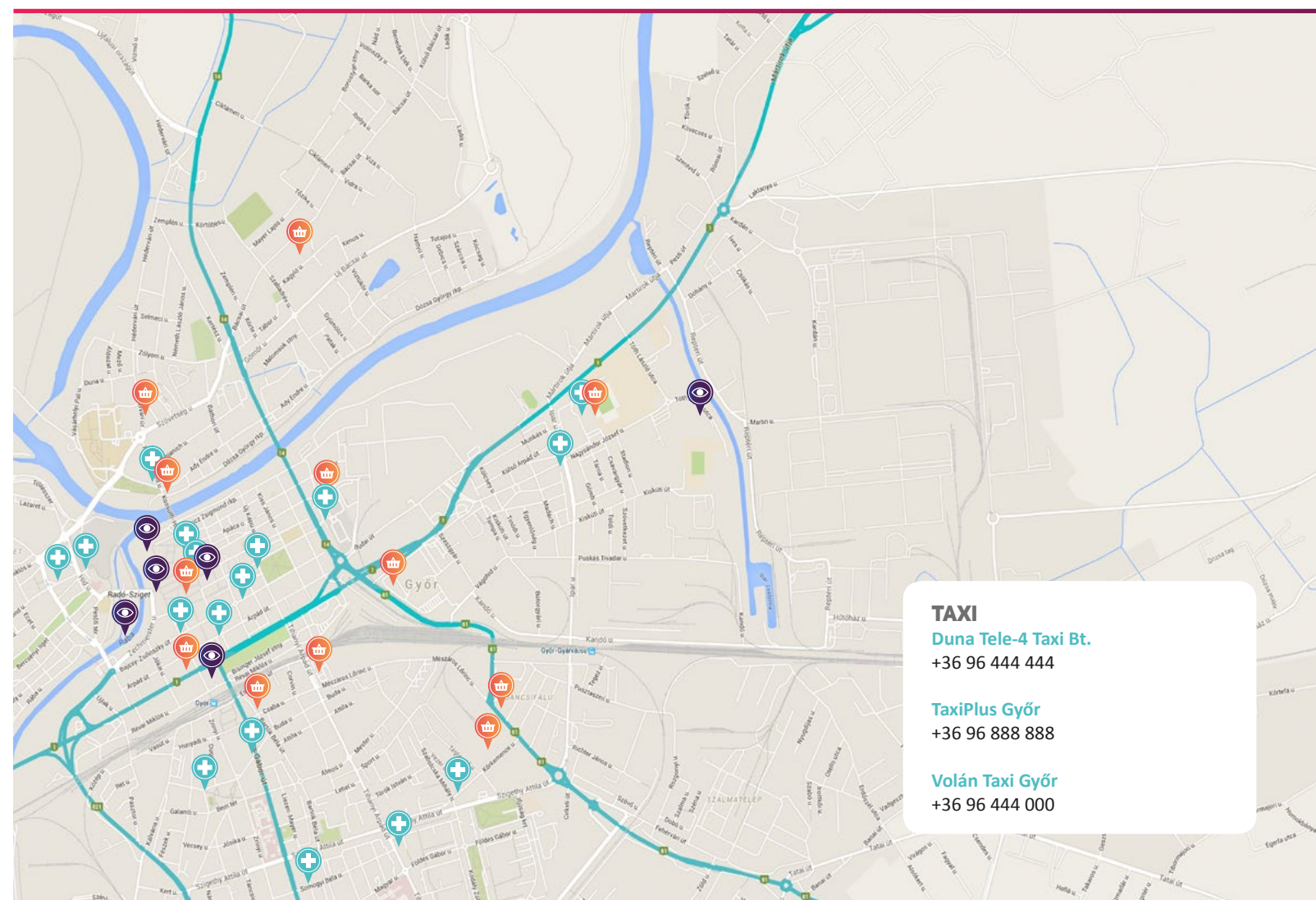
## INTERNET

FS East participant teams will get cellular 3G USB sticks for the event, which can be found at the Event Control. The deposit for the stick is 50 euro, which you will get back after finishing the event. The 3G USB STICKS has to be returned to the Campsite reception by 12:00, 1st August. This is also the time when you get back your deposit for it.

For detailed help installing the device teams will get a regular device manual with which they can install the USB sticks for their Windows or Apple notebooks.

## PHARMACIES & STORES

With the map below you can locate a few pharmacies if you may need anything. The red pins mark regular convenient stores. If you may need anything special or some parts for your vehicle feel free to ask the officials for help and directions.



**FORMULA** EAST  
STUDENT  
FROM 28<sup>TH</sup> JULY

WHO IS  
READY?

# THE ONES WHO COUNT



INDUSTRY  
KNOWLEDGE  
TECHNOLOGY

#	Team name	University name	Country	Car#	Pit	Fuel type
1	WUT Racing Team	Warsaw University of Technology	Poland	1	6	Combustion
2	Polytech North Capital Motorsport	Peter the Great Saint-Petersburg Polytechnic University	Russia	7	14	Combustion
3	Formula Technion	Technion - Israel Institute of Technology	Israel	9	4	Combustion
4	Polimarche Racing Team	Universit� Politecnica delle Marche	Italy	11	11	Combustion
5	FaSTTUBe	TU Berlin	Germany	13	31	Combustion
6	BME Formula Racing Team	Budapest University of Technology and Economics	Hungary	E14	21	Electric
7	TauRD	Tel-Aviv University	Israel	18	5	Combustion
8	Bauman Racing Team	Bauman Moscow State Technical University	Russia	21	13	Combustion
9	Formula Racing Miskolc	Miskolci Egyetem	Hungary	26	22	Combustion
10	KEFO Motorsport	Kecskem�t College	Hungary	29	23	Combustion
11	Hofspannung Motorsport e.V.	Hochschule Hof	Germany	E29	20	Electric
12	Akademische Motorsportgruppe Darmstadt	TU Darmstadt	Germany	47	25	Combustion
13	High-Octane Motorsports e.V.	Friedrich-Alexander Universitat Erlangen-N�rnberg	Germany	49	27	Combustion
14	Team Bath Racing	University of Bath	United Kingdom	50	32	Combustion
15	Formula Dream Russia MAMI	Moscow State University of Mechanical Engineering (MAMI)	Russia	52	15	Combustion
16	UPBracing Team e.V.	University of Paderborn	Germany	58	26	Combustion
17	Formula Student Team Weingarten	HS Ravensburg Weingarten	Germany	60	28	Combustion
18	Togliatti Racing Team	Togliatti State University	Russia	63	12	Combustion
19	E-Team Duisburg-Essen e.V.	Universitat Duisburg-Essen	Germany	E66	19	Electric
20	CAT-Racing	UAS Coburg	Germany	70	24	Combustion
21	ATHENE Racing Team	UniBw Munich	Germany	73	30	Combustion
22	TU Brno Racing	Brno university of Technology	Czech Republic	74	34	Combustion
23	T.U. Iasi Racing	Gheorghe Asachi Technical University of Iasi	Romania	75	2	Combustion
24	Formula Student KPI	National Technical University of Ukraine	Ukraine	77	33	Combustion
25	Formula Electric MADI	The Moscow Automobile and Road Construction University (MADI)	Russia	E77	17	Electric
26	Campus Motorsport Hannover	Hochschule Hannover	Germany	84	29	Combustion
27	FS RUDN	Peoples' Freindship University of Russia	Russia	87	16	Combustion
28	E.Stall Esslingen	University of Applied Sciences Esslingen	Germany	E95	18	Electric
29	Formula Student ONPU	Odessa National Polytechnic University	Ukraine	99	1	Combustion
30	PRz Racing Team	Rzeszow university of Technology	Poland	102	8	Combustion
31	NEDmotorsports	NED University of Engineering and Technology	Pakistan	110	3	Combustion
32	AGH Racing Team	AGH University of Science and Technology	Poland	116	7	Combustion
33	Tampere UAS Motorsport	Tampere University Of Applied Sciences	Finland	278	10	Combustion
34	PolSI Racing	Silesian University of Technology	Poland	303	9	Combustion



# FORMULA EAST

STUDENT

28<sup>TH</sup> JULY

## CHANGELOG

Version	Date	Modification	Page
1.0.0	21th July, 2016	Original document	-



Engineers for the Automotive  
Higher Education Association

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