Formula SAE Italy, Formula Electric Italy & Formula Driverless

July 24-28 2019 Riccardo Paletti circuit Varano de' Melegari

HANDBOOK









### The pursuit of excellence











www.dallara.it



### Formula SAE Italy, Formula Electric Italy & Formula Driverless 2019

### #FSAEItaly

### Join the conversation



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**FSAEItaly** 

www.formula-ata.it

Formula SAE Italy & Formula Electric Italy is organized by ANFIA - Associazione Nazionale Filiera Industria Automobilistica www.anfia.it

Formula ATA Handbook

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### Formula SAE Italy, Formula Electric Italy & Formula Driverless 2019

"Riccardo Paletti" Circuit, Varano de' Melegari - July 24th - 28th

### Official Handbook

### Introduction

The Formula SAE Italy, Formula Electric Italy 2019 will follow the official SAE rules valid for 2019. The Formula Driverless 2019 will follow FSG rules with few exceptions. The Business Presentation event and the Cost event will follow FSG rules.

The additional regulations, valid for the Italian event, are the ones reported on the official Formula ATA web site (www.formula-ata.it under the "Information & Rules" section).

These guidelines are written with the only purpose to help competitors and guests during the event. In case of doubt, please refer to the event officials.

Please remember that motorsport can be dangerous, take always the maximum care during the entire event.

Formula SAE is an educational event where all the students have the possibility to learn while having fun.

Formula SAE Italy is organised by



In collaboration with





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### In case of emergency

In case of any emergency situation please refer to the officials/staff. During the dynamic events ambulance will be on site. In case of need, ask someone with a two-way radio. In case of an emergency outside the event, call 112. This number is free of charge and works with both mobile and coin telephones.

### Useful phone numbers are the following

General Emergency Number 112

Carabinieri Fornovo Taro office +39 0525 2114

Parma Hospital +39 0521 702111 - 703111

-First aid service: +39 0521 703084

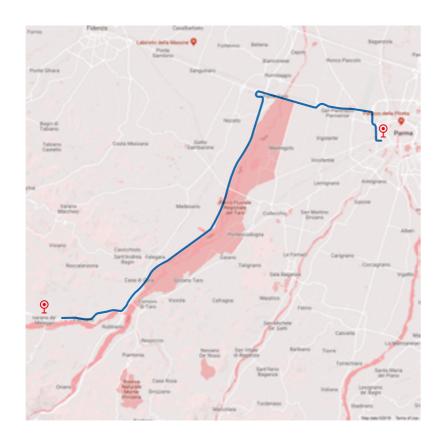
Borgo Taro Hospital +39 0525 9701

-First aid service: +39 0525 970216, ext. 4216

### Borgo Val di Taro Hospital direction



### Parma Hospital direction



### WHAT SHOULD I DO IN CASE OF ELECTRIC SHOCK?

- Call for medical help. Ambulances are onsite for medical assistance.
- Push one of the emergency shutdown buttons and wait until the TSAL (Tractive System Active Light) is green. Don't act if light is red or turned off.
- Try to speak with the wounded and ask him/her about his/her health.
- Insulate yourself if you must move a wounded away from a live contact wear dry gloves or cover your hands with cloth and cover potential contact paths with the car with the HV isolation blanket.
- Watch your step to make sure that you do not slip or fall when trying to move the wounded.
- Do not move the wounded if there is a possibility of neck or spinal injuries unless it is absolutely necessary (for example from a path of live current).
- 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 wounded comfortable, warm and at rest, and monitor breathing.

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### **Staff**

### **ORGANIZING COMMITTEE**

### **Steering Committee**



Claudio Annicchiarico

Head of Formula Driverless



Paolo Mario Coeli

Formula SAE Italy Director of Operations



Miriam Gangi

Event Organization and Communication Manager



Francesco Laviola

Head of Formula Electric Italy



Massimo Rosaschino

Dynamics Logistic Manager



Giampiero Brusaglino

Electric Technical Manager

Costa

Event

Anja

Head

Organization

Herrmann

**Praturlon** 

of Dynamics

Migliaccio

Organization and

Responsible for

relations with

the teams

Claudia

Organization

- Paddock

manager

Rossi

Event

Selene

Event

Anna Maria



Cesare Certosini

Head of Formula Driverless Dynamics



Raffaele **Fregonese** 

Formula SAE Italy Director



Silvio La Tassa

Head of Mechanical Inspections



Roberto Prete

Safety Manager



Mariangela Sciorati

Event Organization and Communication

### **Executive Committee**



Giorgio Brunelli

Dynamics Security Responsible



Carlo Giorgioni

Head of Cost Judges



Nicola Rizzini

Volunteers Coordination Responsible



Piero Ciadamidaro

Scoring Responsible

Pareo

Cost Event

Konstancja

Stronska

Rules & Event

Support -

Paddock

manager

Support

**Domenico** 



Giacomo **Danisi** 

Head of Design Judges



Enrico Rebaudo

Business Presentation Manager



**Valentina** Temporelli

Business Presentation Manager

**Media Group** 



Daniele Bottallo

Photographer



Giuseppe Pagano

Video Maker



**Fabrizio** Giuliano



Photographer

Social Media Manager



**Andrea** 

**Napolione** 

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### **Design Event Committee**

AGRICOLA Rocco Aptiv - PE Engineer Systems

ANDREOLETTI Fabio FCA Italy - Autonomous Driving Engineer

ANNICCHIARICO Claudio Meccanica 42 - CEO

ANZIOSO Franco FCA Italy - Electrified Vehicles Planning Manager

BADIA Tiziano KGR Elettronica - Direttore Tecnico

BATTIMAZZA Alessio FCA Italy - Diesel Engine Calibration Specialist

CAIROLA Marco Robert Bosch - Technical Interface
CAMPANALE Carlo Maserati - Electric PWT Chief Engineer

CANTELLA Andrea Valeo - Product Technical Leader - Expert Dual Mass Flywheel

CASTELLI Pier Guido Sabelt - Product & Innovation Responsible

CERIELLO Giovanni DTS - Product Engineering

CINÀ Alessandro Pietro FCA Italy - Vehicle Integration Responsible

CIPELLI Marco Dayco - Testing Manager

COELI Paolo FCA Italy - Powertrain & Feature Portfolio Planning

COLOMBO Maurizio Automotive Expert
CONCARI Nando Dallara - Project Manager
DALLARA Gian Paolo Dallara Group - President

DANISI Giacomo Danisi Engineering - Chief Executive Officer

DANNA Fabio Italdesign - Project Manager Electrical Vehicle / Electric & Electronics

DE LAURETIS Antonio Ferrari F1 - Head of Aerodynamic Modelling
DE VITA Luca ANFIA - Technical & Regulatory Affairs Area

DI ROSA Giuseppe Lamborghini, Vehicle Dynamics Simulations / Chassis Targets
DI VINCI Andrea Aston Martin Lagonda - HV BATTERY PACK - Commodity leader

ESPOSTO Daniele Dayco - TVD/Decoupler Testing Supervisor

ESPOSTO Filippo DTS - Product Engineering

FERRARA Ferdinando FCA Italy - Electrical/Electronic Engineering - Pomigliano Sub Unit Responsible

FREGONESE Raffaele Maserati - Electrified Powertrain Concept & Validation Responsible

FRUMUSA Vincenzo FCA Italy - LCV Quality Vehicle Line
GAMBERINI Giorgio Italdesign -Business Development Director

GIANSETTO Giacomo Dayco - Senior Design Engineer

GOKCE Can FCA Italy - Electric Vehicle Integration Responsible
GUCCIONE Stefano Maserati - Electrified Powertrain - Advanced Concept
HAHN Christoph MathWorks - Senior Education Technical Specialist

LAVIOLA Francesco GM Propulsion System Europe - Controls Development Workgroup Leader

LILLI Francesco FCA Italy - EMEA - Product Development - Head of Advanced E/E

LOMBARDI Emanuele FCA Italy - GSE Turbo Engines Program Manager

MACERATINI Roberto Bitron - Electrified Powertrain - System Development Manager

MANZALI Claudio Lamborghini - Transmission Department Engineer & E-Axle Development

Responsible

MERLIN Marco Ycom - Head of Design Office

MONTI Francesco Podium Advanced Technologies - CEO - Head of e-Mobility Business Line

MORSONE Giulio Automobili Pininfarina - Chassis Engineer

NARDONE Miriam Dayco - TVD Lead Engineer

OCEANO Andrea CUNA Representative - Technical secretary for Italian committee on "Electric, hybrid and fuel cell vehicles", "Vehicle fuelled with gaseous fuels" and "Fuel

specifications"

OEST Holger Continental Automotive Italy - Global Account Director BMW Group
OLLINO Paolo FCA Italy - FCA Manufacturing - NEW 500 BEV project manager

PAIARDI Marco Aptiv - Product Engineering Mechanical

POERIO Nicola Centro Ricerche Fiat - DAS Innovation Specialist

RICCI Claudio Danisi Engineering - Head of Advanced Vehicle Dynamics

RICCI Roberto Continental Automotive Italy - Product and Application Engineer

RIVAGLI Luca Dayco - CAE Lead Engineer
SACCHI Matteo FCA - Vehicle Dynamic Engineer

SAVIO Walter Centro Ricerche Fiat - Responsible E/E Prototyping and Testing - E/E Innovation - PD

SBROSI Marco Pirelli - Product Technologist

TAMPOLLI Raffaele Tampolli Engineering - Race Cars Manufacturer at Tampolli Engineering

TESTA Massimiliano Agrati - Group Product Development Director

TOSCANO Gianluca Teoresi - Technology Leader

TOSO Andrea Dallara - Head of Vehicle Dynamics
VACCHINA Gabriele Danisi Engineering - Head of Road Testing

VEZZA Davide Robert Bosch - Group Manager Engineering Services

VIOLA Gianfabio Valeo - System Engineer

### **Cost Event Committee**

ACTIS ENRICO

Dayco - Global Commodity Manager

ALOISE Filippo

DALLARA Automobili - Design Office

ARMANDO Davide

DALLARA Automobili - Design Engineer

BENVENUTI Alberto Dallara - Indoor Testing Engineer (R&D division)

CACOPARDI Aldo DocFinance - Marketing Manager

CAVALLERO MAURO Valeo - R&D Controller

CAVAZZINI Guido DALLARA Automobili - Quality Assurance
DEI TOS Andrea Zoppas Industries - Design Engineer
DI MARTINO Gerardo Dallara Group - Accounting Specialist

DONDO Paolo Polo Mesap - Technical Manager - Polo Mesap "Smart Products and Manufacturing"

FORNARO Debora Dallara Compositi - Quality Assurance Engineer

GIORGIONI CARLO Dallara - Plant Controller

LEUCCI Christian FCA Italy - Cooling Virtual Analysis Specialist - Engine Systems - Cooling System -

EMEA PD

LORENZON Francesco

MANA Mattia

Waleo - Product Technical Leader

MARCANDELLA Luca

MARZILIANO Giuseppe

MELI Angelica

MONEGATTI Marco

NENCI Federico

MENARZICON Francesco

Teoresi - Vehicle Test Engineer

Valeo - Product Technical Leader

Process Engineering Specialist

Mechanical Engineer - Simulation

Fabbrica Dallara - Production Planner

DALLARA Automobili - Sales Operations

Dallara Compositi - Key Account Manager

PALMISANO Andrea Dallara Compositi - Logistic and Machine Shop Planner
PANZERA LUCA Avio Aero (GE Aviation Business) - Lead Design Engineer

PAREO DOMENICO FCA Italy - Powertrain Engineering - Benchmarking and Powertrain Technologies -

Electrified Propulsion System Engineer
Dallara - Vehicle Dynamicist (R&D Division)

PINTO Valerio Design Engineer

PERGOLI Matteo

PRATI Giovanni DALLARA Automobili - Project Cost Controller

RATTALINO Valerio Valeo - System Engineer

RUSSO Davide FCA Italy - Engine Systems - Fuel System - Project Chief

SCARANGELLA Filippo Mechanical Engineer - Simulation

SCOYNI Roberto FCA Italy - Powertrain Engineering - Benchmarking and Powertrain Technologies -

Assistant Chief Engineer - Project Manager Turbocharged Gasoline Engines

SILATCHOM Fabrice Dallara Compositi - Data Analyst
SULEMAN Shalom Dallara Compositi - Quality Assurance
TREMAMUNDO Filippo FCA Italy - Global Benchmarking Manager
WILLIAMS Dom DALLARA Automobili - Design Engineer

### **Business Presentation Event Committee**

ALBIERO Giancarlo ANFIA - Aftermarket and Motorsport Area

ASSETTATI Giovanni Italdesign - Project Manager - Ultra Limited Series Production

AVERSA Paolo City, University of London - Associate Professor of Strategy and MBA Director, Cass

Business School

BONZI Matteo FCA - Institutional Relations

BORRINI Davide Dallara - Administration & Accounting Project Leader

CARRARO Giles F1 Race Team Operations Manager

CAVICCHI Fulvio Autosprint Journalist, Social Media Manager of ALIAN SARL

CROWLEY Monica Audi - Project Management

D'ALESSANDRO Sebastiano Tesa - Sales Manager Automotive Italy & Global KAM FCA

DEBERNARDIS Andrea ANFIA - Head of ANFIA Components Group
DEITINGER Laura Assoknowledge Confindustria SIT President

DONATO Silvio ANFIA - Data Analyst

GARZULLI Serena Supply Chain Specialist - Sales and Logistic Support

**GENTILI Luca** Continental Automotive Italy - Advanced Purchasing Team Leader

**GRASSI Luca** Danisi Engineering - Technical Account Manager

LOIODICE Cinzia Bricks 4 Kidz Italy - Country Manager FCA Italy - Human Resources Manager MANNA Francesca Dallara Group - Group Controller MELANI Marco Fabbrica Dallara - Production Planner **NUCCIARELLI Alberto** 

FCA Italy - Head of Feature Portfolio Planning **NERVI Claudio** 

**OLLINO Giulia** FCA Italy - Jeep Brand - EMEA Product Manager Cherokee, Wrangler and Gladiator

ZF Group Italy - Sales Account Manager PASTORELLI Mirko

PESARE Salvatore ZF Group Italy - Technical Project Manager Steering System **REBAUDO Enrico** Continental Automotive Italy - CPT Italy - Director CC FCA EMEA

Schaeffler - Customer Relationship Marketing Intern - Global Key Account RIO Giacomo

Automotive

SCIOLARI Alessandro Scientific Director Assoknowledge Confindustria SIT

SECONDO Francesco Robert Bosch - Technical Leader

SPERATI Maurizio Altair - VP Global Account Management FCA and Country Automotive Operations TEMPORELLI Valentina Schaeffler - Customer Relationship Marketing Director - Global Key Account

Automotive

Intecs - Solutions Automotive Sales Manager TETI Francesco **ZANETTI Andrea** Zoppas Industries - Process Engineering Specialist

# Who we are

Ferrari has a most desirable track record, impressive results and has been confirmed as one of the "World's most powerful brands". Ferrari represents the pinnacle of GT and motor racing excellence, as well as Brand Diversification across Ferrari Stores Museums and Theme Parks world-wide. Being Ferrari means being part of a unique performance and future-focused team in which people are the most valuable resource. Ferrari, Italian Excellence that makes the world dream.

### The ideal candidate

Since Ferrari has racing DNA, embracing and cherishing competition is part of its company culture as well as the cooperation within the team is extremely important in order to achieve best in class performance. Ferrari expects you to enjoy working as part of a team, to be flexible and dedicated, number oriented and proactive in order to maximize and deliver results and meet the deadlines. Fluency in English is a must-have, and a good level

of Italian an advantage for your full integration.

### Visit our careers website: https://corporate.ferrari.com/en/career/career-opportunities

### Formula SAE Italy, Formula Electric Italy & Formula Driverless 2019 - Awards

Sponsor Special Awards



### **ANSYS Discovery Live Contest**

Judge: Vincenzo Stirparo, KITE Group



- 1st Place Award: 2 tickets Ferrari GT race + Hot Lap with Ferrari GT car
- 2nd Place Award: 2 tickets Ferrari GT race + Official Lego Ferrari GT car model (location TBD)
- 3rd Place Award: 2 tickets Ferrari GT race (location TBD)



### Best integration between powertrain and chassis controls

Judge: Giuseppe Di Rosa, Lamborghini - Vehicle Dynamics Simulations

Trophy



### Award for the best Car/Resources balance

Award presentation: Gian Paolo Dallara, Dallara Group - President

- Trophy
- Cheque of € 750,00



### **DRiVing the Future**

Award presentation: Simonetta Esposito - Senior Communications Manager

- Trophy
- Cheque of € 500,00



### First Italian Team Classified in the Endurance Event - Class 1C First Italian Team Classified in the Endurance Event - Class 1E

Award presentation: Giulio Grassigli - Red Bull Student Marketeer

• Visit to Toro Rosso Factory (Transport included from Bologna to Faenza)



### Driverless and electric vehicle SW development process flexibility award

Judge: Paolo Bizzarri, Teoresi - Technology Development Manager

- Trophy
- •Cheque of € 500,00



### See. Think. Self drive.

Award presentation: Alessandro Vitali, ZF Group - EMEA Regional & Steering Key Account Manager

- Trophy
- •Cheque of € 500,00

### **Special Awards**



Most Friendly Team Trophy

Best Class 1C Classified in the Cost Event Trophy

Best Class 1D Classified in the Cost Event Trophy

Best Class 1E
Business Presentation Event
Trophy

Best Class 1 C Design Winner Trophy

Best Class 1E Classified in the Cost Event Trophy

Best Class 1C Business Presentation Event Trophy

Best Class 1D
Business Presentation Event
Trophy

Best Class 1 D Design Winner Trophy

Other Special Awards



Best Class 1E Design Winner Trophy

### Design, Innovate, Succeed!

Join #teamAltair today!



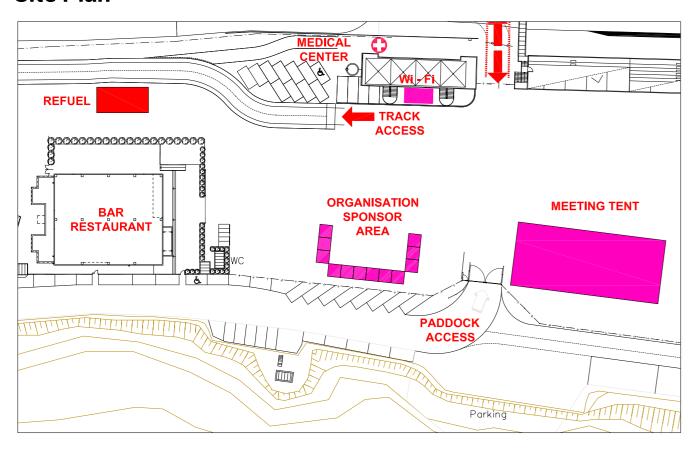
Altair transforms design and decision making by applying simulation, machine learning and optimization throughout product life cycles. Our Academic Program gives you access to the **FREE** HyperWorks® Student Edition, sponsorships for student teams, comprehensive training materials and much more!

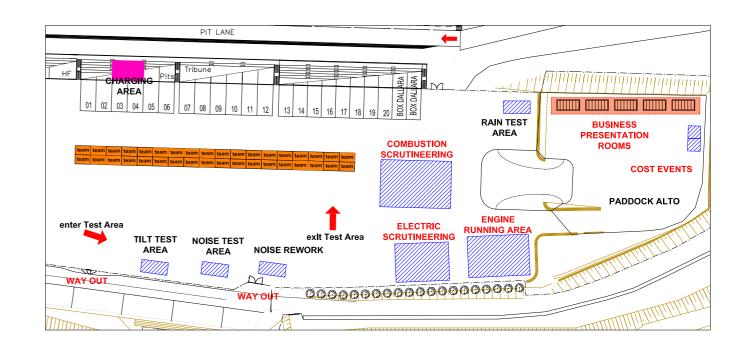
Altair

For more information visit altairuniversity.com/academic

Formula ATA Handbook

### Site Plan











Formula ATA

### **Official Schedule** (This programme could be subject to changes)

### Tuesday, July 23

15.00 - 19.00 Camping Check-in @ Camping

### Wednesday, July 24

08:30 - 13:00 Registration for all Classes, Team Leaders, Faculty Advisors, ESO/ASR and Drivers Registration @ Registration Office
13:00 14:00 Lunch Brook
13:00 - 14:00
14:30 - 17:30 Dallara Recruitment Meeting @ Around the Paddock
15:00 - 19:00 Registration for all Classes and volunteers @ Registration Office
15:00 - 19:00 Team Leaders, Faculty Advisors and Drivers Registration, Energy Meters
Delivery @ Registration Office, Pit set up
15:00 - 19:00 Technical Inspections 1C/1D @ Scrutineering Area
19:30 - 20:30 Team Leaders Briefing @ Meeting Tent
21:00 - 21:45 Opening Ceremony (with ANFIA presentation and with the participation
Heiko Schilling, Head of Navigation-TomTom Automotive)
21:45 Welcome Pasta Party and Red Bull Party @ Varano de' Melegari Party Area
22:30 Site Closes

### Thursday, July 25

07:30	Site On an
0 <b>7</b> :3 <b>0</b>	Site Opens
08:00 - 10:00	Drivers, Faculty Advisors & ESO / ASR Registration @ Registration Office
08:30 - 09:00	Briefing Technical Inspectors @ Meeting Tent
09:00 - 13:00	Technical Inspections 1C/1D/1E @ Scrutineering Area
09:00 - 13:00	Tilt, Noise & Rain Tests 1C/1D/1E @ Scrutineering Area
09:15 - 09:45	Business Presentation judges briefing @ Business Presentation Rooms
10:00 - 13:00	Business Presentation Event (All Classes) @ Business Presentation Rooms
11:30 - 13:30	Ferrari - Meet & Greet @ Ferrari expositive Area
12:00 - 13:00	Cost judges briefing @ Meeting tent
13:00 - 14:30	Lunch Break
14:30 - 17:30	Dallara Recruitment Meeting @ Around the Paddock
14:30 - 19:30	Cost Event (All Classes) @ Pits
14:30 - 19:30	Engine Running Area Open @ Scrutineering Area
14:30 - 19:30	Business Presentation Event (All Classes) @ Business Presentation Rooms
14:30 - 19:30	Technical Inspections 1C/1D/1E @ Scrutineering Area
14.30 - 19.30	Tilt, Noise & Rain Tests 1C/1D/1E @ Scrutineering Area
19:30 - 20:30	Business Presentation Finals 1D @ Meeting tent
20:00 - 20:30	Tablet users Briefing @ Business Presentation Rooms
20:30 - 21:00	Design judges briefing @Meeting Tent
21:00	Site Closes
21:30	Dallara Dinner for judges

### Friday, July 26

Triday, July 20	
0 <b>7:30</b>	Site Opens
08:00 - 12:00	Battery Charging Class 1D/1E @ Charging Area
08:00 - 08:20	Design judges registration and photo @ Registration Office
08:20 - 08:40	Design judges Briefing @ Meeting Tent
08:30 - 12:30	Technical Inspection 1C/1D/1E @ Scrutineering Area
08:30 - 13:30	Ferrari - Meet & Greet @ Ferrari expositive Area
09:00 - 12:30	Break Test 1C/1E @ Brake Test
09:00 - 12:30	Engine Running Area Open @ Scrutineering Area
09:00 - 12:30	Tilt Noise and Rain Tests 1C/1D/1E @ Scrutineering Area
09:00 - 13:00	Business Presentation Event 1C/1E @ Presentation Rooms
09:00 - 13:00	Cost Event (All Classes) @ Pits
09:00 - 13:00	Design Event 1C/1E @ Pits
09:30 - 12:30	Emergency Brake Test 1D @ Straight between 2 turns
09:30 - 12:30	Design Event 1D/3 @ Pits
09:30 - 12:30	Practice Area 1C/1E @ Practice Area
13:00 - 14:00	Drivers Briefing @ Meeting tent
13:00 - 14:00	Lunch Break
14:00 - 14:30	Track Show @ Acceleration
14:30 - 15:00	Tesa Conference "Tape solutions: the invisible innovation enablers of the
	automotive industry" @ Meeting tent
14:30 - 16:30	Cost Event (All Classes) @ Pits
14:30 - 17:00	Acceleration 1D @ Acceleration
14:30 - 17:50	Design Event (All Classes) @ Pits
14:30 - 19:00	Battery Charging Class 1D/1E @ Charging Area
14:30 - 19:00	Technical Inspection 1C/1D/1E @ Scrutineering Area
14:45 - 19:00	Engine Running Area Open @ Scrutineering Area
14:45 - 19:00	Tilt Noise and Rain Tests 1C/1E/1D @ Scrutineering Area
15:00 - 18:00	Transponders Delivery @ Scrutineering Area - Noise Test
15:00 - 18:30	Practice Area 1C/1E @ Practice Area
15:00 - 19:00	Brake Test 1C/1E @ Brake Test Area
16:30 - 17:30	Business Presentation Finals 1E @ Meeting tent
17:00 - 19:00	Skidpad 1D @ Skidpad
18:00 - 19:00	Business Presentation Finals 1C @ Meeting tent
19:15 - 20:00	Panoramic Photograph @ Acceleration
19:15 - 20:00	Design judges Buffet
20:30 - 22:00	Design Finals - One to One @ Meeting tent
22:00 - 22:30	Design Finals Exhibit (Open Tent) @ Meeting tent
22 15	

### Saturday, July 27

22:45

Julia day, July 21	
0 <b>7:30</b>	Site Opens
08:00 - 13:00	Battery Charging Class 1D/1E @ Charging Area
08:30 - 09:00	Acceleration Show @ Acceleration
08:30 - 13:00	Engine Running Area Open @ Scrutineering Area
09:30 - 12:30	Tilt, Noise and Rain Test 1C/1D/1E @ Scrutineering Area
09:30 - 12:45	Feedback Static Events @ Meeting tent
09:30 - 13:00	Acceleration 1C/1E @ Acceleration
09:30 - 13:00	Break Test 1C/1E @ Brake Test Area
09:30 - 13:00	Practice Area 1C/1E @ Practice Area
09:30 - 13:00	Skidpad 1C/1E @ Skidpad
13:00 - 14:30	Lunch Break

Site closes

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14:30 - 15:00	Autocross Course Walk @ Track Area
14:30 - 19:00	Engine Running Area Open @ Scrutineering Area
14:30 - 21:00	Battery Charging Class 1D/1E @ Charging Area
15:00 - 19:00	Brake Test 1C/1E @ Brake Test
15:00 - 19:00	Practice Area 1C/1E @ Practice Area
15:30 - 19:00	Trackdrive 1D @ Skidpad
15:30 - 19:30	Autocross @ Track Area
17:30 - 19:30	Team's photo @ Acceleration
20:15 - 21:00	Drivers Briefing @ Meeting tent
21:00	Site closes

### Sunday, July 28

0 <b>6:45</b>	Site Opens
07:00 - 14:00	Battery Charging Class 1D/1E @ Charging Area
08:00	Course Walk @ Track Area
09:00	Endurance Event 1C/1E @ Track Area
09:00 - 13:30	Parc fermé Class 1E @ Track Area
11:00 - 19:00	Parc fermé Class 1C @ Track Area
13:00 - 14:30	Lunch Break
14:30 - 18:00	Engine Running Area Open @ Scrutineering Area
20:30	Closing Ceremony
22:00	Track Area closes

### Pits

### Pit number

The pits of the circuit will be shared by two teams which will enter from the Pit Lane side or from the Paddock side. Some additional gazebos will be placed inside the paddock.

### Pit set up

When: Wednesday, 24th July, 15:00 - 19:00

All teams vehicles have to wait before entering the event site for unloading their cars and materials. Please follow the instructions of the officials. Walking speed is the maximum allowed speed in the venue

ONLY 1 vehicle will be authorized to enter the paddock, but after the unload it shall be parked in the free parking area at the entrance of the Varano Circuit.

### A driving force. Worldwide.



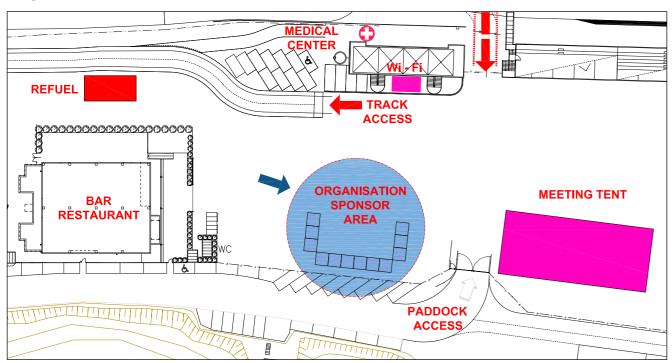
Agrati is worldwide leader in fastener solutions.

Every year we produce 8 billion pieces for the assembly of 60 million automobiles all over the world.





### Registration and information



When:

19:00

Where:

Sciorati

Wednesday, 24th July,

08:30-13:00 - 15:00-

Registration Office

**Event Organization:** 

Migliaccio - Claudia

Rossi - Anna Maria Costa - Mariangela

Miriam Gangi - Selene

### Registration of team members, additional team members and team guests

Upon arrival at the Varano Circuit, the Team Leader must register the team at the Reception Desk by:

- a) Bringing the ANFIA Limitation of Liability and signing the list of signatures IN FRONT OF the ANFIA Staff to confirm the correctness and validity of all other members' signatures;
- b) Communicating any changes in the list of team members, previously submitted, and in that case, filling out all the necessary registration documents for every new member and bringing photocopies of his/her health insurance card, passport or ID.

Then he/she will receive badges for all team members, additional team members, team guests, the dynamic area passes for drivers, which must be worn at all times.

No pass will be handed to any team member except than the Team Leader. A yellow wristband with barcode will be given to the Team Leader, which will be used during the team leaders' briefing.

During registration, he/she will also receive a number corresponding to the scrutineering order.

### **Energy meter delivery**

The energy meter kit will be delivered on Wednesday, 24th July, 15:00-19:00 at the Registration Office The kit includes the energy meter box, a wiring harness set with connectors and a current sensor.

### **Trasponder Delivery**

The car transponders will be delivered on Friday 26th July, from 15:00 to 18:00 at the Scrutineering Area - Noise test. They will be picked up by the officers in the Parc Fermé after the endurance. In case the car will not participate in the endurance event, it will be Team Leader responsibility to return it back at the registration office (before the Closing Ceremony).

### Registration of Faculty Advisor

Faculty Advisors are kindly requested to register at the Reception Desk on Wednesday 24th July, from 08:30-13:00 or from 15:00 to 19:00 together with his/her team or on Thursday 25th July, in the morning.

### **Drivers registration**

Every team must register as drivers at least 4 members.

Drivers will have to submit the R. Paletti Circuit release and waiver of liability completely filled out, together with the photocopy of a valid government issued driver's license.

Drivers are requested to present those documents at drivers registration desk on Wednesday 24th July, from 08:30-13:00 or from 15:00 to 19:00 and on Thursday 25th July, from 08:00 to 10:00.

Drivers will receive a blue wristband with a barcode on it, which will be used during the drivers' briefings.

Drivers will have to pass the egress test and the main hoop height test to be allowed to drive the car; as soon as they pass the tests they will be handed a red wristband.

Those tests are performed during technical inspections or, if necessary, under appointment anytime before the start of the first dynamic event the driver wants to participate.

### **ESO / ASR registration**

Electric teams, including driverless car equipped with electrical powertrain, must register at least 1 ESO (Electrical Safety Officer).

ESOs are requested to register at the Reception Desk on Thursday 25th July, from 08:00 to 10:00. ESOs will receive an orange wristband and an orange t-shirt/team, which must be worn during the team's dynamic events.

For driverless team, ESO will be registered also as ASR (Autonomous System Responsible).

ASR are requested to register at the Reception Desk on Wednesday 24th July, from 8:30 to13:00 and Thursday 25th July, from 08:00 to 10:00. ASRs will receive an orange wristband and an orange t-shirt/team, which must be worn during the team's dynamic events.

### Certification of partecipation

A certificate of participation will be sent to the Team Leader for every team member after the event as a .pdf file.

### **Parking**

At the entrance of Varano Circuit there will be a free parking area for all vehicles.

### **Visitors**

Visitors are welcome during the 5 days of the event. Entrance is free in the public areas and grandstands while inside the paddock it is on payment.

Tickets can be bought at the Registration Office and can be paid cash or by credit card.

Tarifs	Ticket	Reduced ticket (only for under 14 aged persons)
One day:	€12,00	€5,00
Two days:	€22,00	€8,00
Three days:	€33,00	€12,00
Four days:	€44,00	€16,00
Five days:	€55,00	€20,00

Under-age participants must be accompanied by an adult at all times, who will be responsible for any dangerous action they will cause to themselves, other persons and facilities.

Pets are NOT allowed, except guide dogs.

Please note to all spectators closed toed shoes are preferred.

### Formula Driverless

Formula Driverless (class 1D) debuted in the Formula SAE Italy & Formula Electric Italy during the 2018 edition, following the innovative technological trends of the automotive industry.

It follows the FSG DV Rules with some exceptions which you can find in the Information & Rules 2019. The division between Static and Dynamic events is maintained.

The cars will take part in all dynamic disciplines completely autonomously with no driver sitting in the vehicle but with an algorithm able to identify the best path.

### **Statics Events**

1D Statics Events are the same (Business, Cost and Design) of the other classes with a few differences. Cost Event and Business Presentation Event follow the FSG model.

One only panel of judges is planned for the Design Event, that follows a precise list of evaluation items. The judgement of the design of the car isn't separated from the autonomous system judgement even if judges are focused on this latter. There aren't Design Finals for 1D class.

### **Track Marking**

DE6.3.1 The markings of all dynamic events will have the following characteristics:

- The track is marked with cones.
- The left borders of the track are marked with small blue cones.
- The right borders of the track are marked with small yellow cones.
- Exit and entry lanes are marked with small orange cones.
- Big orange cones will be placed before and after start, finish and timekeeping lines.
- If not defined otherwise in chapter D of the FSG rules, the maximum distance between two cones in driving direction is 5m. In corners, the distance between the cones is smaller for a better indication.
- The start, finish and time keeping lines as well as keep out zones around the time keeping equipment are marked with red, orange or pink paint.
- Additionally for skid pad and trackdrive, track limit lines on either side of the track and entry/ exit lanes may be marked with yellow, green or white paint.
- There are no track limit lines for acceleration and Emergency Brake System (EBS)-test.

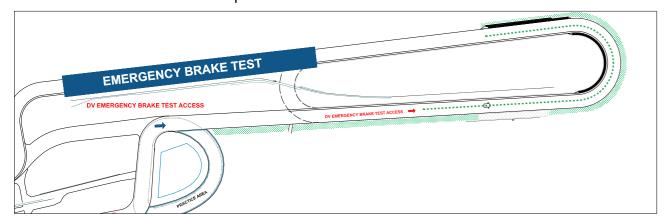
All lines chalk-marked.

### **Dynamic Events**

Driverless cars compete in the following Dynamic Events:

- Acceleration
- Skidpad
- Trackdrive

The Autocross event will not take place.

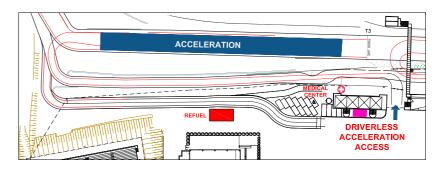


### **ACCELERATION**

When: Friday, July 26th,

14:30 - 17:00

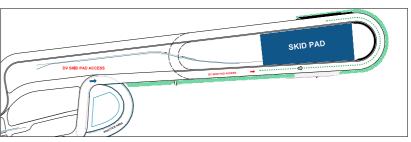
Where: @Acceleration



### **SKIDPAD**

When: Friday, July 26th,

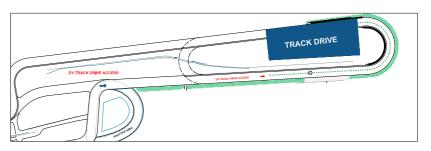
17:00 - 19:00 Where: @Skidpad



### **TRACKDRIVE**

When: Saturday, July 27th

15:30 - 19:00 Where: @Skidpad







of engineering and tailor-made consulting

we support
Formula SAE Italy Formula Electric Italy Formula Driverless

**SPECIAL AWARD** 

**Driverless** and electric vehicle development Formula ATA Handbook

### **General Rules**

Pits are located inside the garage of the Varano Circuit.

Inside the whole area of the Varano Circuit all the rules stated by the official SAE regulation apply. It is forbidden to walk on the gravel traps of the Circuit.

Team members must leave the Circuit during the night at the scheduled hour.

Ask questions If you have a question - ask!

If you have any questions about any part of the competition, schedule, procedures, rules or anything else, just ask to the Team's relation Officer.

Rules questions may be presented to the technical inspectors. It all starts with asking and remember, there are no dumb questions.

Please: do not fear to fail by asking anything you need or clarify any doubt

you might have!

Ask for help If you need help - ask the officials.

Announcements requesting parts, tools or assistance can be made by the

announcer.

Announcement Although there are loudspeakers, it could be difficult for announcements

to be heard everywhere, especially close to a running engine. You can help us make sure everyone knows what's being announced by passing the announcements along to your team mates and other teams in your area.

This is important and we appreciate your help.

Two way radios Two ways radio are used both by teams and by STAFF. In Italy only the use of

LPD radio device is free. The use of PMR446 radio devices is subject to general authorization and to the payment of a contribution to Italian Communication

Ministry.

Please, make sure to use CCTCS/DCS squelch and not to use the same

frequencies of the staff: point penalties may apply!

Be on time The schedule is included in the Student Handbook and posted online. Possible

modifications are communicated online and through announcements.

It's Team responsibility to be on time.

**Drivers briefings** Attending drivers' briefings is mandatory for Team members planned to

drive: check the schedule for Briefing times.

Please consider that the barcode scanning before the drivers' briefing could

take some time: therefore, we ask all drivers to arrive earlier.

Be careful Don't take any risk when working on your car - follow safe working practices.

Bring your When Teams come to tech inspection must bring all the documentation and correspondence connected to SES submission, Impact Attenuator Data

Report, FMEA and any Rules Questions submitted.

The inspectors do not have this material and Teams may need it to answer

questions about their vehicles design and construction.

The inspectors want you to pass tech, and pass it easily, but they need your

help to make it happen.

**Don't run** Running tells people there's an emergency. Don't run unless life is in danger.

**Event Closing Times** Remember that Acceleration and Skid Pad close at exactly the time

communicated by the officials.

Car must have crossed the starting line by that time or it can't run: it is

recommended to get in line early.

Keep the Officials Informed

Keep the officials informed if you run into any problems that need our

attention or might push your team against a time limit.

For example, if it's needed a quick re-inspection to get to an event before it closes let us know - the inspectors can be ready, but only if Teams keep us

informed.

It is Team responsibility to verify that the information has been received by

the appropriate people.

Removing Cars Overnight Removing the car from the track overnight is a Team decision, after having

the written permission from the officials.

If Team wants to take its car off site it must take the vehicle to tech inspection  ${\bf r}$ 

and have an inspector removing part one of the tech sticker.

When Team returns, it's the teams responsibility to have the items worked

on re-inspected.

No guarantee can be assured on the time of re-inspection, therefore do not

relay on an immediate re-inspection to participate to the dynamic events.

There is no certainty that the permission will be granted due to organizational

matters or schedule changes.

Weather Weather is the main thing Organizers cannot force or control.

It is good to be prepared for all weather types from sun to heavy rain.

Pack long and short sleeve apparel, sun block, rain coats and comfortable

closed-toe shoes.

Have Fun, Drive Safe, Use Common Sense

### **Passes and Allowed Areas**

### Paddock & Track













Formula SAE Italy

July 24-28 2019

Riccardo Paletti circuit Varano de' Melegari

### **Paddock Only**



















### Bicycles, Skateboards, Rollers and other similar vehicles

They are NOT allowed inside the paddock. The security service is allowed to take badge away of the team member, who will not comply with this rule.

The badge return will be upon penalties to the team, depending on its gravity.

### Alcohol

PLEASE NOTE: Alcoholic drinks are strictly forbidden inside the circuit during the event, under penalty of the team disqualification.

Alcohol test can be done by any official at any time during the competition: 0.00 g/l is the allowable alcohol content during this event for everyone.

If ANY team member (driver or not) is found with an alcohol level higher than 0.00 g/l, the relevant team member will be immediately disqualified and the drivers of the team will be verified before any driving event.

### Fires and Smoking

No open fires are allowed in the pits, track and engine running areas, cigarettes included. Smoking is strictly forbidden in the pits, tracks, buildings and engine running areas.

### **Photographers**

Authorization

The staff is solely responsible for authorizing photographers/spotters to enter the dynamic event area. Photographers/spotters must be registered for the competition, sign all required waivers, read any required material, agree that they understand and have no questions regarding the policies and procedures for photographers, and agree to abide by these policies and procedures at the risk of being escorted from the dynamic area. Videographers are classified as photographers. Photographers must have photographic equipment - cell phones are not cameras. Photographers and spotters are explicitly restricted to photographic activities.

Limit and penalty

Each university is limited to one (1) photographer/videographer. Additional photographers must remain outside the dynamic event area. Unauthorized photographers will lead to a penalization of their team:

-1st time: 5 points; -2nd time: 10 points; -3rd time: 50 points.

**Access Policy** 

Properly accredited photographers/spotters representing universities may only access the dynamic events area while their teams are actually running in an event. University photographers/spotters will not be granted dynamic area access independent of their team.

### Fuel

Only the fuel provided by the organizer may be used at the event. No fuel may be brought to the event. Unleaded gasoline with an octane rating of 98 RON and E85 will be the only fuels available at the competition. Every team should have communicated to ANFIA the exact tank capacity. The official marshals have the right to check fuel compliance during the entire event. Refueling will be carried out at the Fuel Station, located in a Fuel Area subjected to the following prescription:

- Only one car may enter the Fuel Area;
- To reach the refueling area the driver must be seated in the cockpit wearing a full safety suit while pushed to and from the area;
- The refueller must be able to accomplish to his job without any part removed from the car;

- During the refueling the driver must stand out of the car at a safety distance following the instructions of the official marshals. No other team member can enter the Fuel Area;
- Any other vehicle must be at least 5 meters away from the Fuel Area;

It is forbidden to make use of any device producing flames, sparks or smokes near the Fuel Area. No cell phone is allowed in the area.

Open fuel containers are not allowed. As soon as the car is re-fuelled for the first time, it must proceed with the engine turned off to the tilt table.

### **Working on Electric Cars**

Any vehicle that has not passed E-Scrutineering needs to have HVD disconnected.

The team safety responsible and at least one more team member, who can intervene in case of emergency, must attend every activity on the tractive system. In absence of the team safety responsible, none is allowed to act on the tractive system. Anytime the tractive system is turned on, all driven wheels shall be lifted off the floor (and all parts, such as nuts, near wheels must be tightened). After any activity on the tractive system during which seals were broken an E-Scrutineering is mandatory.

For activities on the inactive tractive system team safety responsible shall follow this procedure:

- 1. Lock out the tractive system master switch.
- 2. Check for zero-potential.
- 3. Disconnect HVD.
- 4. Install a green sign declaring the car as electrically secured (See image below). Sign shall include name of the safety responsible.
- 5. It is team's responsibility to expose the sign in A4 format near the car in a visible position.
- 6. At the end of activity, remove immediately the sign.

It is recommended lifting driven wheels off the floor during any maintenance activity.

In case of measurements on the active tractive system or an activation of the tractive system in the pit for testing please follows this procedure:

- 1. Be sure the team safety responsible is supervising the activity and a team member who is not involved in the activity is present and can intervene in case of emergency.
- 2. Separate the car with a red or orange tape (not provided by the organization).
- 3. Install a yellow sign declaring the high voltage hazard. (See the image below). The sign shall include the name of the safety responsible. It is team's responsibility to expose the sign in A4 format near the car in a visible position.
- 4. Remove all driven wheels of the car and tighten all parts, such as nuts, near wheels.
- 5. Wear compliant safety gloves and use appropriate tools.
- 6. Be prepared to push an emergency button at any time.
- 7. Turn on the tractive system only for the shortest time you need. The activation of the tractive system or the spinning of motors in the pit is only permitted if the car is lifted off and the driven wheels are demounted.

Basic maintenance and testing activities for the accumulator container is allowed in the recharging area; in case a team needs to perform advanced maintenance activity (e.g. grinding, drilling, etc.), the team may get authorization by a scrutineer who checks safe conditions are met in the pit area. A car not having passed yet the E-scrutineering, when moved around or taken to the static events MUST have the HVD disconnected.

When moving around an electric car, the tractive system master switch must be turned off and the key must be kept by the safety responsible, who must always stand near the car moved around. If any of the above-mentioned instructions are not respected, it may result in a deduction of points or disgualification.

The tractive system master switch must be locked, whenever the team safety responsible has to go away from the vehicle, even during nights.



# SAFETY FIRST



THIS CAR IS

ELECTRICALLY

SECURED

SR

# WARNING



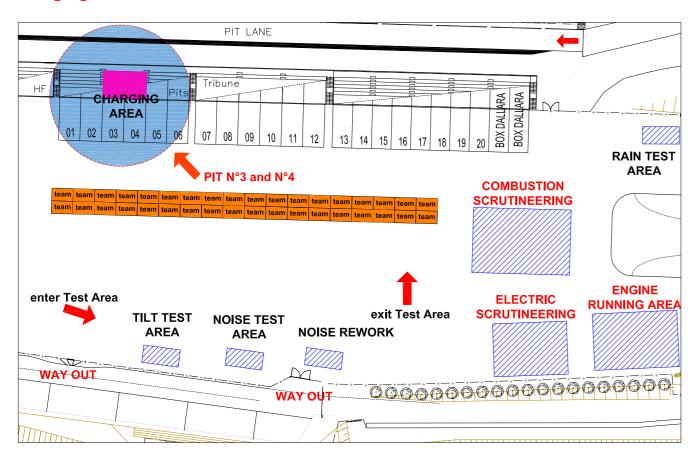
# HIGH VOLTAGE MAINTENANCE



ONLY AUTHORIZED TEAM MEMBERS CAN CROSS LINE

SR

### **Charging Electric Vehicles**



Accumulators can be recharged exclusively in the designated charging area. Where: No charging is allowed during the night. The team Safety Responsible and at Charging Area least one more team member have to be present during the charging. No more than four team members of each team are allowed in the charging

Accumulators must be removed from the car for charging within a removable accumulator container and placed on the accumulator container hand cart

for charging. While charging, the accumulator container has to report a label with the following information:

- 1. Team number
- 2. Approximate time at which the recharge will end
- 3. Name of Safety Responsible

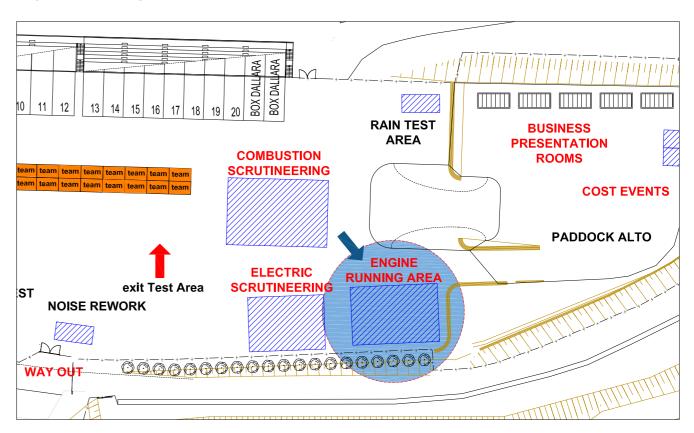
Recharge will be allowed only after the electrical technical inspection.

The recharge area is equipped with the following AC socket-outlets:

- Single-Phase 230V 50Hz 16A P+N+E Schuko
- Single-Phase 230V 50Hz 16A IEC 60309, 6h (180°), P+N+E (Blue 3 poles)
- Three-Phase 400V 50Hz 16A IEC 60309, 6h (180°), 3P+N+E (Red 5 poles)
- Three-Phase 400V 50Hz 32A IEC 60309, 6h (180°), 3P+N+E (Red 5 poles)

Each team must verify that the AC plug of their charger is compliant with one of the available socket-outlet. If not, the team has to replace it with a compatible one or bring compliant adapter.

### **Engine Running**



### ENGINES CAN NOT BE RUN IN THE PIT GARAGES.

Where:

Engines may be run ONLY in the designated "engine running area" in the Engine Running Area paddock, provided that the car has passed technical inspections and the following conditions are satisfied:

- 1. The car is on an adequate stand (NOT on coke crates, plastic boxes etc).
- 2. The drive wheels are at least 10.2 cm (4 in) off the ground or the drive wheels have been removed.
- 3. A fire extinguisher must be at hand.
- 4. Only the driver and 2 team members are allowed in the engine running area. If an electric car is running the Safety responsible must be in the area.
- 5. The driver must be seated and belted in the cockpit, wearing a full safety suit.
- 6. The gearbox must be in neutral or the CVT dis-engaged.

The exhaust system may be very hot, pay attention.

www.saleri.com

### Scrutineering

Know the Rules - Read the rules again: rules understanding is critical to success!

### WELDING AND GRINDING PROCEDURES

Welding and grinding will be permitted inside each team pit provided that the necessary safety aspects have been taken into account.

Safety glasses and gloves must be worn during those operations; same procedure may be applied to other tool usage at the discretion of the organizers.

A fireman must be present when welding, call for them every time you need to weld.

We remember you that it will be not present an official welder on site.

### **DYNAMIC AREA ACCESS**

All the Track Area of the Varano Circuit will be defined as "Dynamic Area".

Only the cars waiting to attend the specific test may enter the "Dynamic Area".

Only team members with a valid "Dynamic Pass" may enter the "Dynamic Area" to follow the corresponding car: four (4) "Dynamic Pass" will be given to each team.

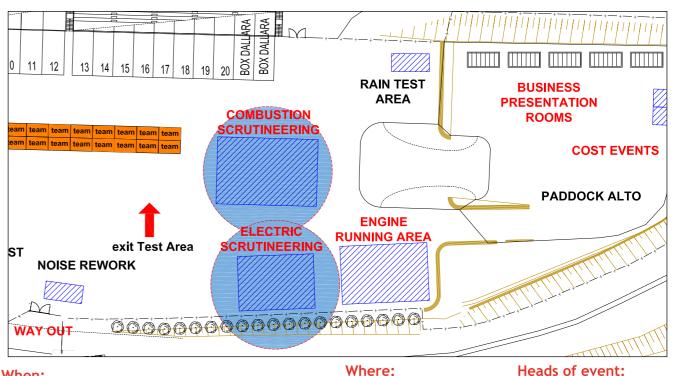
At any time, no more than four team members may enter the dynamic area, including the driver (or

Spectators are not allowed to enter the Dynamic Area.

REMEMBER: CLOSED TOE SHOES!



### Scrutineering



When:

Wednesday, 24th July 15:00 - 19:00 Thursday, 25th July 09:00 - 13:00 / 14:30 - 19:30 Friday, 26<sup>th</sup> July 08:30 - 12:30 / 14:30 - 19:00

Heads of event:

Silvio la Tassa -Mechanical Inspections Francesco Laviola -Electric Inspections

### Pre-check the car.

Saturday, 27<sup>th</sup> on request

During registration you will be given your technical inspection number: the queue for the technical inspection follows these numbers.

Paddock

Please fill the first part of the technical inspection sheet, regarding tires, before queuing and line up with everything you need.

### What to bring to Tech. Inspections:

- Vehicle;
- Dry and wet tires;
- Driver's equipment including helmets, suits, gloves, eye protection, balaclava, socks, and shoes for all drivers (Note: This includes your arm restraints);
- Fire extinguishers;
- Push bar;
- Structural Test documents and supporting documentation or test pieces Technical Inspection form;
- EV only Data sheets for all used parts in the tractive system;
- EV only Approved technical document (ESF) signed by ESA;
- EV only Tools and protection equipment as defined in the FSE rules;
- EV only Spare accumulators;
- EV only Clear pictures of parts not reachable during inspection (HV fuse box, ...);
- EV only Spare samples of self-developed printed circuit with HV and LV;
- All of your team's drivers;
- Impact attenuator test piece;
- Monocoque test specimens if applicable;
- Tools to disassemble any parts of the car that the inspectors want to examine. This includes accessing your restrictor, removing body panels or any parts that are blocking inspection and to allow examination of your EV systems;
- Copies of your team's rules questions and Committee's answers;
- Material to record the inspectors' comments.

The technical Inspection number is provided during the team registration.

ANFIA has the right to re-order the scrutineering queue, in case the scrutineering slot of a team coincides with a time slot of the team for a static event.

The technical inspections will be held inside the scrutineering area of the circuit. Additional time for re-inspection, if necessary, will be available under demand.

The only permitted modifications are according to rule SAE IN.14.2.2 otherwise the car must be rescrutinized and reapproved.

Teams removing their car from the event site will lose all their stickers from technical inspection (Scrutineering, E-Scrutineering, Brake, Noise, and Tilt Table).

If your car isn't ready when your number is called, you'll lose your position and go to the back of the inspection line.

The Technical Inspectors wish every team to pass tech inspection as quickly and easily as possible. Many inspectors are former competitors and they know the amount of time and effort Teams invested in completing their car and preparing it for the competition.

Technical inspections take longer when scrutineers have to explain noncompliant items and the process is quicker if everything complies.

Please make inspection easier by yourselves, and for organizers, by understanding the rules, preinspecting your car and being prepared.

E-technical inspectors will mark different approved parts (i.e. insulation monitoring device, accumulator containers, energy meter, tires, rims etc.).

The car can be disqualified from any dynamic event if using unmarked parts or substituting marked parts: parts with broken seals are equivalent to being unmarked and seals must only be replaced by a technical inspector.

### For E-cars, e-technical inspections will be held before the mechanical inspections to ensure everyone's safety.

However, Chiefs of Technical Inspection may allow exceptions to perform the mechanical technical inspection without having done the electric inspections, but only if the accumulator container is carried on the hand cart.

Car not passing e-tech will not be allowed to proceed with the other inspections and tests; moreover, the vehicle is not allowed to take part in any dynamic event if any of the e-tech seals are broken and until the IMD Test is passed again.

### Device to be used for checking compliance to EV3.6.3 rule.

Regarding rule EV3.6.3 ANFIA will not use a special device to check the compliance to the temperature limits.

PLEASE NOTE: It is a team's responsibility to keep track of how quickly cars are going into Tech Inspection: It is suggested to have someone to keep an eye on how the numbers are progressing. No more than 3 cars will be allowed to queue.

If you miss this window, you have to return your "old" tag and take a new number.

If a Team expect to have a time conflict with a Static Event (Design, Cost or Presentation) please be aware that the Static Event has priority.

If Team vehicle is undergoing Technical Inspection, and members have to leave to attend a Static Event, Team simply need to inform the Inspector: Team will be allowed to remove car from the Technical Inspection area, to resume Technical Inspection later.

Before passing electrical inspection, the car may only be moved around on the event site with all master

switches and shutdown buttons in off-position and the HVD disconnected. GLV-master switch, TS-master switch have to be turned off.

Please remember that the Safety responsible shall attend to E-technical inspection.



### **SMART HINTS**

Self-inspection - Teams must self-inspect their car and be sure that it complies with the Rules before bringing it to tech inspection: use the tech inspection form found on the FSAE Online website during your self-inspection.

It's Team responsibility to properly prepare and self-inspect their car; if inspectors discover a large number of rules violations, or an incomplete self-inspection, then they may suspend their work and send Team back to its paddock to make corrections.

Rules Question Documentation - If a Team submitted a rules question and received an interpretation from the Rules Committee, it has to bring copies of both the question and answer to technical inspection: without this, the inspectors won't know the Committee's interpretation and might make their own. Impact Attenuator Test Piece - Bring the Impact Attenuator Test piece, "Impact Attenuator Data Requirement", and also copies of Impact Attenuator Data report and any related correspondence with the officials (IN5.1.1).

Monocoque Test Specimens - Monocoque builders must bring the test pieces required by Rule IN5.1.1 "Monocoque Laminate Testing."

Restrictor Check - During inspection Team needs to disassemble air intake system to allow a no-go gauge to be inserted into the restrictor: bring the tools required (CV1.7.3)!

If you do not pass the inspection, please write down the name of the responsible of your inspector's team, so to be able to ask for him/her later.

Decisions of the inspectors and the Chief Technical Inspectors concerning vehicle compliance are final and are not a subject of any discussion or appeal.

### **Energy Meter delivery**

The energy meter will be delivered during the registration.

The responsible will hand out the energy meter and needed connectors and he will help with the installation, if needed, and he will answer upcoming questions.

The energy meter must be mounted on the vehicle before the technical inspection. During the technical inspection, the energy meter will be checked.

The energy meter responsible will read out data from time to time to determine if the 80kW limit was obeyed during the dynamic events: data used to calculate the efficiency scoring will be read in the parc fermé.

Any attempt to manipulate the intended function of the energy meter may lead to a disqualification from the entire event.

For any question about energy meter, ask for energy meter responsible at event control.

Please be aware that the energy meters NEED TO BE RETURNED to the registration desk before the closing ceremony of the event.

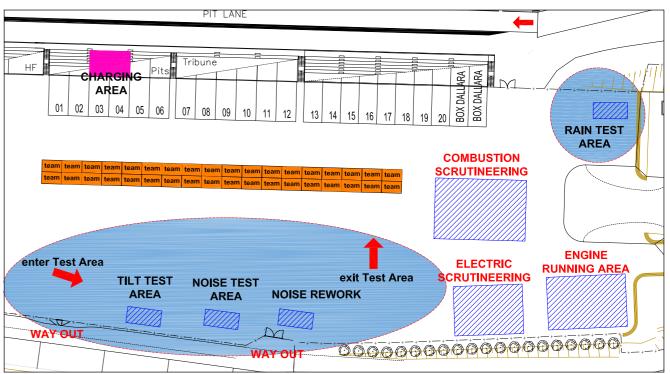
### When:

Wednesday, 24th July 15:00 - 19:00 Where:

Registration Area Heads of event:

FLAG-MS

### Tilt, Rain, Noise & Brake Test



### TILT TEST

### Before proceeding to the tilt test team must refuel.

Follow specific safety guidelines while in the fueling area:

- 1. Engines must be off; cars are to be pushed to and from fueling.
- 2. Only the vehicle push crew and the driver are allowed to enter the fueling station: the driver must be outside of the vehicle.
- 3. Only the driver, in a driving suit, with vehicle fire extinguisher in hand, is permitted in the area as fuel is dispensed.
- 4. A permanent line mark must be used to indicate the "full" level. NO TAPE
- 5. Tank is to be filled to this level each time fuel is received.

No vehicle is permitted at this station until it has passed technical inspections. A maximum of four (4) team members with the dynamic pass, including the tallest driver, are allowed in this area; car must be completely filled with fuel, water and oils.

The tallest driver must be seated in the cockpit, completely dressed up (helmet, socks, gloves...) and belted in: if the test is passed another sticker is applied to the car.

### RAIN TEST

The rain test is for e-cars only: vehicle will be rain-tested after having passed E-technical inspection, mechanical technical inspection and Tilt Test. During the rain test, the tractive system has to be active and none of the driven wheels may be in contact with the ground.

It is not allowed to have a driver seated in the car during the rain test and no one is allowed to stand in the water of the rain test during the test itself.

### When:

Thursday, 25th July 09:00 - 13:00 / 14:30 - 19:30 Friday, 26th July 09:00 - 12:30 / 14:45 - 19:00 Saturday, 27<sup>th</sup> July 09:30 - 12:30 Where:

Scrutineering Area

### When:

Thursday, 25th July 09:00 - 13:00 / 14:30 - 19:30 Friday, 26th July 09:30 - 12:30 / 14:45 - 19:00 Saturday, 27<sup>th</sup> July 09:30 - 12:30 Where: Scrutineering Area

Formula ATA Handbook

### READY-TO-DRIVE - SOUND -TEST

Ready to drive test sound will be checked at noise test stand.

In addition to sound characteristic, inspectors check Ready-To-Drive signal is emitted only if all requirements are fulfilled (no fault for GLV system, brake pedal is pressed...)

### When:

Thursday, 25th July 09:00 - 13:00 / 14:30 - 19:30 Friday, 26th July 09:00 - 12:30 / 14:45 - 19:00 Saturday, 27th July 09:30 - 12:30 Where:

Scrutineering Area

### **NOISE TEST**

A car is allowed to noise test area once it has the scrutineering and tilt table When:

In order to check the RPM value, every team must provide a tool to monitor RPM directly from ECU (i.e. dashboard, laptop).

The car must be compliant to the Rules at all engine revs up to the regulated

The noise test can be repeated every time an official deems it necessary, and it can be repeated if modifications are performed on the exhaust system or after an accident.

Noise level can be measured at any time during the dynamic events: penalties may be assessed if the sound level exceeds the mandated maximum, and noise sticker can be removed by officials.

Thursday, 25th July 09:00 - 13:00 / 14:30 - 19:30 Friday,26th July 09:00 - 12:30 / 14:45 - 19:00 Saturday, 27th July 09:30 - 12:30

Where:

Scrutineering Area

### BRAKE TEST

When: Friday, 26th July 09:00 - 12:30 / 15:00-19:00 Saturday, 27th July 09:00 - 13:00 / 15:00 -19:00

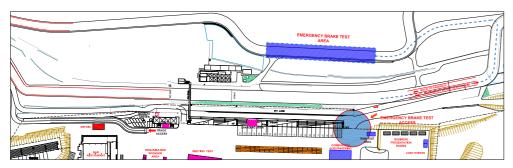
Friday, 26th July Where: Main Straight (Zone A)

Saturday, 27th July Morning: Track (Zone B) Afternoon: Practice Area(Zone C)

Under request, till the scheduled start of Endurance:

Sunday, 28th July Morning: Practice Area (Zone C)

### EMERGENCY BRAKE TEST



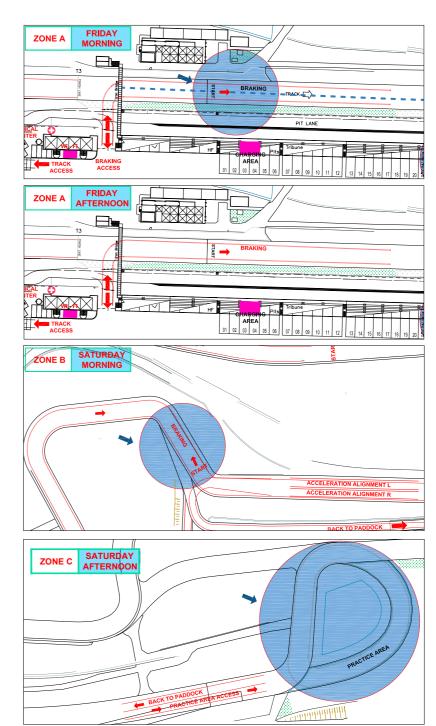
### When:

Friday, 26th July 09:30 - 12:30 Where:

Straight between Parabolica and 1° Esse turns

### Head of event:

Cesare Certosini



COMBUSTION CARS - A car is allowed to enter the brake test area once it has the scrutineering and the tilt table stickers. The car must start its run and accelerate getting into the 2nd gear; as the car reaches the braking area the driver must brake strong enough to fully lock all four wheels.

If the vehicle passes the test, another sticker will be applied and the vehicle can then proceed to the practice area or to the dynamic events.

The brake test can be repeated every time an official deems it necessary, and it can be repeated if modifications are performed on the system or after an accident.

**ELECTRIC CARS** - A car is allowed to enter the brake test area once it has passed the scrutineering (both), tilt test, rain testing and ready-to-drive-sound-testing.

Each driver must be instructed as to the proper procedure for the brake test: if the vehicle passes the test, another sticker will be applied and the vehicle can then proceed to the practice area or to the dynamic events. When braking, the tractive system has to be switched off by the driver and the brake pedal must be actuated as far as possible.

The brake test is successful if all four wheels lock and within 5 seconds the Tractive System Active Light goes off. The brake test can be repeated every time an official deems it necessary.

Re-certification may be required if work is performed on the vehicle's braking system or if the vehicle is involved in an accident that results in vehicle damage.

### **Static Events**

Teams that want to receive feedback about their static events can ask directly to the judges on Saturday 14th July at the event venue: afterwards, no request of feedback will be accepted.

Handbook

### **Design Event**

The design event will be held in each team pit.

The winner of the Design Event will get 150 points.

Please, be on time and have all engineering documentation with you. Make sure the car is in race-ready condition and team members are well prepared.

For each team the design event will take up to 45 minutes.

First year cars: It is the teams' responsibility to prove to the judges that their vehicle is a first-year car: second year cars are not allowed. If the structure of the frame is not obviously a completely new design from previous years, then photo documentation should be provided to prove that the car is new as defined by the rules.

How to prepare: Students should bring any and all information they feel is Giacomo Danisi relevant (charts, graphs, parts, photos, video, etc.) to support their design efforts.

The judges will give more credit (higher Design score) to documented engineering than to word of mouth: simply showing up with a great car is not good enough.

A high emphasis is placed on the student team's ability to design, build, refine & validate, and understand their own car.

### **DESIGN FINALS**

Design finals will be held according to the schedules in the Meeting Tent. The three best classified teams in Class 1E and Class 1C will be admitted. Finalist teams must attend to the finals with their cars and whatever they think is needed for an engineering discussion.

Design finals will consist in two phases: the first one to one with Judges and then the Design Finals Exhibit (Open Tent).

The cost event will be held inside each team pit.

The report will follow the guidelines set forth in the published rules. Teams have to present its vehicle at the designated time to the Cost Judges for Cost Report review; Team that miss cost appointment will potentially lose all cost points.

The schedule for these appointments will be in the registration packets. For each team the cost event will take about 30 minutes.

### When:

Friday, 26th July 09:00 - 13:00 / 14:30 - 17:50 Where:

### Pits

When FINALS: Friday, 26th July 20:30 - 22:00

### Where:

Meeting Tent Head of event:

### **Cost Event**

Team needs to show a printed copy of the Cost Report, plus one more printed or electronic.

### When:

Thursday, 25th July 14:30 - 19:30 Friday 26th, July 09:00 - 13:00 / 14:30 - 16:30 Where: Pits Head of event: Carlo Giorgioni



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### **Business Presentation Event**

The business presentation event will be held inside the presentation rooms A, B, C, D, E according to the schedule assigned to each Team; Teams that don't arrive on time for their assigned time-slot won't be allowed to make their presentation and consequently will get zero points for the event.

The presentation rooms will be located in the "Paddock alto" and will be equipped with 50-inch TVs with HDMI cable (Type A).

It is the team's responsibility to make sure that their laptops are suitable for connection: if not, judges might assign lower score based on the effective performance of the team.

Competitors must convince the judges that their prototype and the related concept represent a profitable enterprise for the manufacturer/investor tiding together all the aspects needed: marketability, manufacturability, technical aspects and product appeal.

### **BUSINESS PRESENTATION FINALS**

Business presentation finals will be held according to the schedules in the Meeting Tent. The three best classified Teams in Class 1D, Class 1E and Class 1C will be admitted.

### When.

Thursday 25<sup>th</sup>, July 10:00 - 13:00 / 14:30 - 19:30 Friday 26<sup>th</sup>, July 09:00 - 13:00 Where:

Presentation Room

### When FINALS:

Class 1D:
Thursday 25<sup>th</sup>, July
19:30- 20:30
Class 1E:
Friday 26<sup>th</sup>, July
16:30 - 17:30
Class 1C:
Friday 26<sup>th</sup>, July
18:00 - 19:00
Where:
Meeting Tent

Meeting Tent
Head of event:

Enrico Rebaudo and Valentina Temporelli



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### **Dynamic Events**

### GENERAL INFORMATION

The dynamics at Formula SAE Italy & Formula Electric Italy comply with the FSAE rules. The team will receive the car transponder during the registration.

To be allowed to compete in the dynamic events of the day, all drivers must attend an event dedicated briefing (i.e. the Friday meeting for Acceleration, Skid pad and Autocross, the Saturday meeting for the Endurance).

Any driver that fails attend the dedicated briefing will be excluded from the corresponding events.

The 4 team members need to have the dynamic pass to enter the dynamic area.

If the dynamic event captain declares damp or wet conditions, the announcements will be made at the dynamic area(at staging and alignment lines).

Closed-toed shoes are mandatory in all dynamic areas. Any team member with dynamic pass that fails to comply with this rule might be not allowed to enter the dynamic area.

After each dynamic event and before the following one, please check for leakages, broken parts and fasteners.

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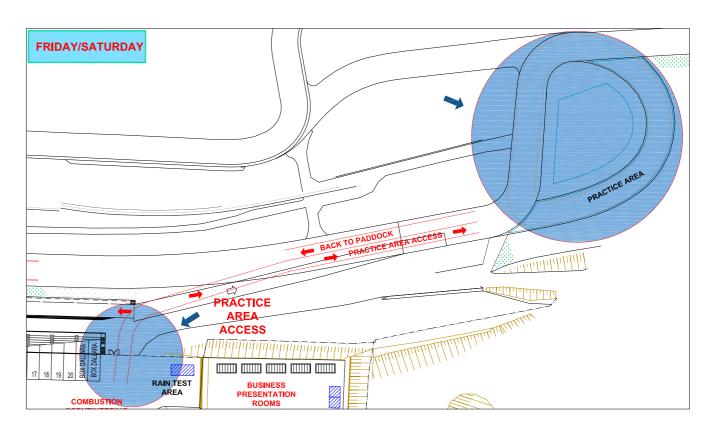
### **Practice Area**

### When and Where:

### Class 1C/1E

Friday, 26<sup>th</sup>, July 09:00 - 12:30 / 15:00 - 18:30 Saturday, 27<sup>th</sup>, July 09:30 - 13:00 / 15:00 - 19:00

### @ Practice Area



During the scheduled time, a practice area will be available.

The practice area has the only purpose to check car's functionality and set it up, simulating the driving condition of the track, not to prove full performance of the car.

If other vehicles are waiting, any team may not run more than 5 (five) minutes inside the practice area, then the team may line up in the queue again.

Precedence will be given to teams running their first practice.

Whenever the Team moves its car, the following rules must be followed:

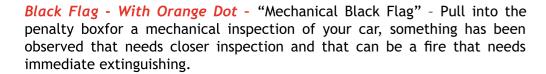
- Driver inside the cockpit, dressed up with a safety suit
- Fire extinguisher in the push-pull bar or accompanying the car
- The car must be pushed-pulled around.

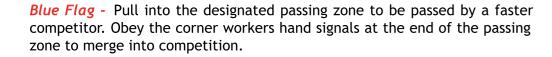
The Practice Area will not be available on Sunday.

### **Flags**

The following is a brief description of the flags that can be used with their meaning. Any variations from this list will be explained at the drivers' meetings.

**Black Flag** - Pull into the penalty box for discussion with the Chief Marshall/ Director of Operations or other officials concerning an incident. A time penalty may be assessed for such incident.





**Chequered Flag** - Your session has been completed: exit the course where signaled.

**Green Flag or Italian Flag -** Your session has started, enter the course under direction of the starter. (NOTE: If you stall the vehicle, please restart and await another green flag as the opening in traffic may have closed.)

**Red Flag** - Come to an immediate safe controlled stop on the course. Pull to the side of the course as much as possible to keep the course open. Follow marshal's directions.

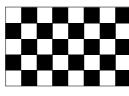
**Yellow Flag (Stationary)** - Danger, SLOW DOWN, be prepared to take evasive action, something has happened beyond the flag station, NO PASSING unless directed.

**Yellow Flag (Waved)** - Great Danger, SLOW DOWN, evasive action is most likely required, BE PREPARED TO STOP, something has happened beyond the flag station, NO PASSING unless directed.















**Red & Yellow Striped Flag** - Something is on the racing surface (e.g. oil) that should not be there. Be prepared for evasive maneuvers to avoid the dangerous situation.

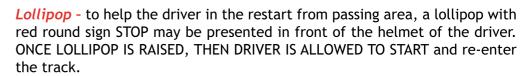


White Flag - There is a slow moving vehicle on the course that is much slower than you are: be prepared to approach it at a cautious pace.



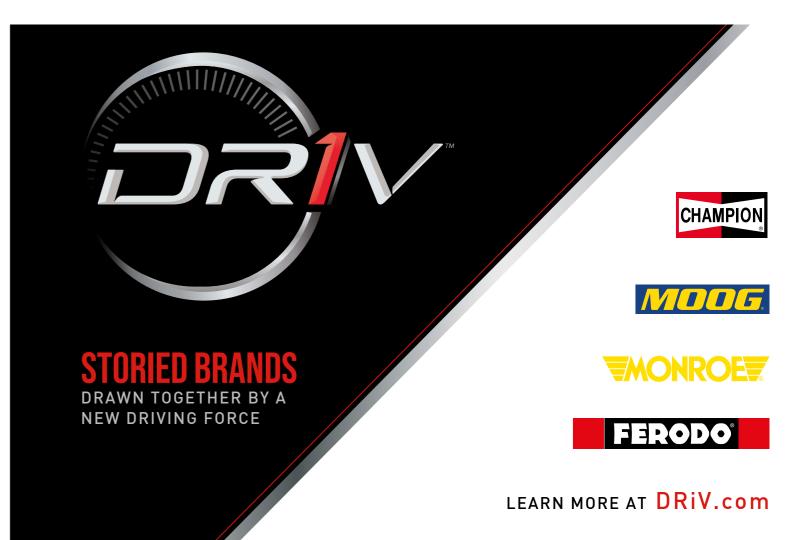
### **Additional Signs**

**Fire on Board** - Marshalls are warning driver about a fire or a severe risk of fire on his car, driver is required to stop as soon as possible off the track and close to a Fire Fighter or a Marshall.









### **Weather Conditions**

WET: Teams must fit rain tires to their vehicle if the course is declared wet.

**DAMP:** Teams have the option of dry or rain tires if the course is declared damp.

Teams are allowed 10 minutes to change their tires in the driver change area if a dry track is declared damp, or if a dry or damp track is declared wet.

If the tire change is happening at the same time as a scheduled driver change, the 10 minutes are in addition to the 3 minutes allowed for the driver change.

Teams are allowed to change their rain tires to dry tires if the course is dry or damp. However, this change is not permitted during the driver change, and the time taken to change the tires is included in the team's total time for the event.

The following chart summarizes the possible track condition changes, the team's options, and the time allotted for changes.

Track Initial Condition	Team's Current Tire Choice	Track Declared	Tire Change	Time Help	Allowed at Driver Change
Dry	Dry	Damp	Optional	10 minutes	Υ
Dry	Dry	Wet	Mandatory	10 minutes	Υ
Damp	Dry	Wet	Mandatory	10 minutes	Υ
Damp	Rain	Wet			
Damp	Dry	Dry			
Damp	Rain	Dry	Optional	Zero	N
Wet	Rain	Damp	Optional	Zero	N
Wet	Rain	Dry	Optional	Zero	N

### **Acceleration Event**

Acceleration will run in parallel with the Skid Pad event. There will be 2 Class 1D: lanes, one for the first driver and one for the second driver.

The event WILL STOP at the scheduled time, no matter how long Teams have Friday, 26th July been in the queue and how long the waiting line is.

Each driver can take the second run immediately after the first one without Head of event: going back to the end of the queue.

The first driver line will have the priority over the second driver line.

The car must proceed slowly during the realignment for the second run. Excessive speed will be cause for disqualification.

Only team members with "Dynamic Pass" may stay with their car on the Saturday, 27th July waiting line.

14:30 - 17:00

Cesare Certosini

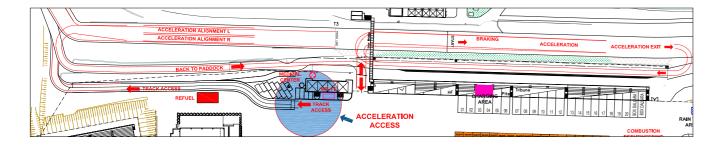
Class 1C, 1E: When:

09:30 - 13:00 Where:

Acceleration

Head of event:

Nicola Rizzini



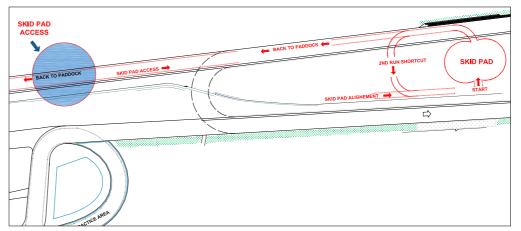
### **Skid Pad Event**

Skid Pad will run in parallel with the Acceleration event.

There will be 2 lanes, one for the first run and one for the second run. The event WILL STOP at the scheduled time, no matter how long Teams have been in the queue and how long the waiting line is.

Each driver can take the second run immediately after the first one without going back to the end of the queue.

The first driver line will have the priority over the second driver line. Only team members with "Dynamic Pass" may stay with their car on the waiting line.



Class 1D:

When:

Friday, 26th July 17:00- 19:00

Head of event: Cesare Certosini

Class 1C, 1E:

When:

Saturday, 27<sup>th</sup> July 09:30 - 13:00

Where:

Skidpad

Head of event:

Caterina Secchieri



Formula ATA Handboo

### **Autocross Event**

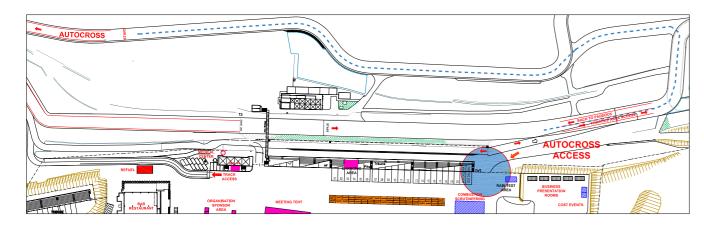
The autocross event will be held on the racetrack.

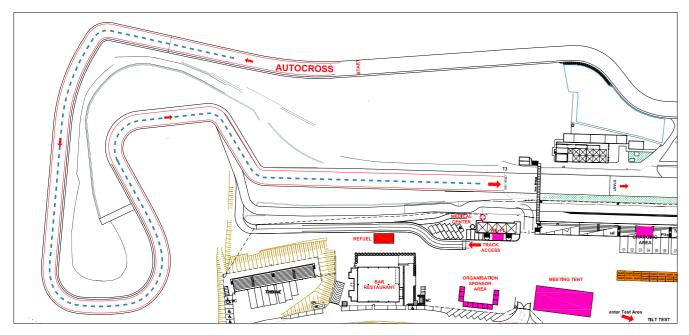
There will be 2 lanes, one for the first driver and one for the second driver. The event WILL STOP AT 19:30, no matter how long Teams have been in the queue and how long the waiting line is.

Each driver can take the second run immediately after the first one without going back to the end of the queue.

The first driver line will have the priority over the second driver line. More than one car may be on the track at the same time; in case of delay due to yellow flag caused by other cars the run may be repeated immediately. For safety reasons, at the Autocross start, one team member with "Dynamic Pass" and quick jack and fire extinguisher is allowed to assist the car, in case of need.

When:
Saturday, 27th July
15:30 - 19:30
Where:
Track Area
Head of event:
Anja Herrmann
Praturlon





### Endurance Event & Parc Fermè Procedure

The starting order for the event will be based primarily on the Autocross event.

The start sequence will be from the slowest to the fastest autocross times. If a team did NOT score in the Autocross event, the vehicle will run at the beginning of the Endurance event, with the order based first on the finishing order of the Acceleration event, and then on the finishing order of the Skid Pad event.

Teams without a score in any event used to determine the run order will run in the order established by the race direction

Teams must run in the assigned heat- morning or afternoon.

The circuit of the endurance event is shown in the following picture.

Only team members with a "Dynamic Pass" may follow their car up to the staging area.

Spectators may follow the event from the grandstands.

Following the established starting order, the starter will instruct the vehicles to be ready and line up at the entrance of the track.

Sunday, 27th July

09:00

Where:

Track Area

Praturlon

Head of event:

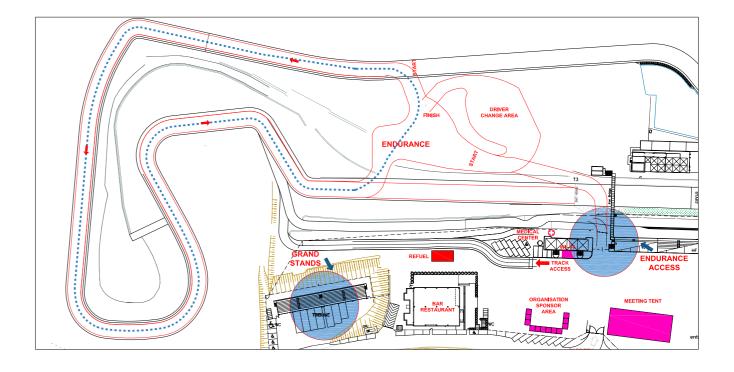
Anja Herrmann

An official will perform a safety check of the vehicle and of the driver restraint system.

The starter will stage the vehicle's front tires on a starting line.

When there is an opening on the track the starter will wave a flag signaling the go-ahead for the driver to start.

If vehicle stalls, the driver must wait for another flag before being allowed on the course.



Formula ATA Handbook

### PLEASE NOTE: IF THE VEHICLE CANNOT BE RESTARTED WITHOUT EXTERNAL AID, THE CAR WILL BE DEEMED DISABLED AND DISQUALIFIED FROM THE EVENT.

The vehicle is expected to be ready for competition with 1st driver at team's start time. If the endurance event is running late, the vehicle is still expected to be ready when its run order position is reached. If the vehicle is not ready when the official starter motions the vehicle to the starting line, a twominute penalty will be assessed and the team will lose their time slot to run the event.

There will be more than one car on the track, so please pay attention to all the flags shown by the marshals and officials otherwise you may be penalized or disqualified.

On the last lap of the first driver, a chequered flag will be displayed and the vehicle directed to the driver change area.

It is the driver's responsibility to exit the track; any person directing the car off the course is an additional aid only.

Only three people (including drivers) are allowed in the driver change area at once. After the vehicle arrives in the driver change area, the team has three minutes to get the second driver belted in and rolling out of the driver change area.

Only adjustments to fit the second driver may be performed on the vehicle. No other work is allowed.

During driver's change, car and safety equipment (i.e. suits and belts) will be checked by technical inspectors; only after this check the 2nd driver is allowed to enter the track.

In addition to D8.12 FSAE rules, the team of Electric Vehicle is not allowed to reset any control unit during Driver Change nor power cycling GLVS master switch.

In case vehicle requires power cycling GLVS master switch in order to activate tractive system, the team needs to request during technical inspection an exception for operating GLVS master switch during Driver Change.

PLEASE NOTE: NO REPAIRS OR WORK MAY BE PERFORMED ON THE VEHICLE DURING THE EVENT (with the exception of tire changes due to weather conditions).

If a blue flag is shown to your car YOU HAVE TO MOVE INTO THE SLOW LANE and slow down. Before entering the track again, YOU HAVE TO WAIT FOR THE GREEN FLAG or other sign (e.g. lollipop) being shown at the end of the slow lane: not respecting this flag/sign may lead, further to a time penalty, to serious accidents with injuries for you, for the other drivers and for the marshals! Be responsible!

All the cars that end the Endurance event will be taken directly at the refueling station. No team member except the driver may enter that area: after the fuel consumption measurement, all the cars will be conducted directly to the Parc Fermé.

Team members are not allowed to enter the Parc Fermé before Officials communication.

### **Additional Endurance Penalties**

The Chief Marshall/Director of Operations may disqualify a vehicle if, for any reason including driver inexperience and mechanical problems, it is too slow or being driven in a manner that, in the sole opinion of the event officials demonstrates an inability to properly control the car.

### Results

The results of each static and dynamic event will be published as soon as they are ready near the Registration Office.

### **Protest**

If a team has a question about any official action it must be brought to the staff's attention for an informal preliminary review before a protest can be filed.

Any team intending to protest decisions or results must present a written issue to the Formula SAE Italy, Formula Electric Italy & Formula Driverless organizers.

The protest may occur only in case something happened which they feel has caused harm to their team or has had a substantive effect on their score.

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

In order to have a protest considered, a team must post a twenty-five (25) points protest bond which will be forfeited if their protest is rejected.

The protest period expires 30 minutes after the score has been published.

Protest must be in written format and handed only by the team leader.

Failure of a team member to follow a decision directed specifically to that team or team member will result in a twenty five (25) point penalty.

### Offensive Behavior

Any offensive behavior will be penalized with a penalty from 25 points to the exclusion from the competition.



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### **Camping information**

Please be informed that the only vehicles admitted inside the campsite are the motor caravans.

### **ADDRESS**

Via Guglielmo Marconi, Varano de' Melegari (Parma).

### CAMPING CHECK IN

It is foreseen on Tuesday, 23<sup>th</sup> July 2019 from 15:00 to 19:00 and Wednesday, 24<sup>th</sup> July 2019 from 8:30 to 12:00. It is MANDATORY for all teams to comply with the timetable.

### ARRIVAL AND DEPARTURE

- Teams arrival: Tuesday, 23<sup>th</sup> July 2019, 15:00
- Teams departure: Monday 29th July 2019 within 14.00

At their arrival team members will be given wristbands for camping, which MUST be worn for the whole *period*.

CHARGE AND DISCHARGE OPERATIONS

Vehicles are allowed to enter the campsite to download all equipment. After downloading, they MUST be parked in the free parking area next to the campsite. Only ONE vehicle is allowed to enter the campsite during the 4 days of the event to charge and discharge materials and must be parked outside soon afterwards.

### **AVAILABLE SERVICES**

- Toilets and showers.
- Electricity
- Free parking area
- Security service 24 hours a day
- Night medical assistance
- No camper service. In the town of Collecchio (about 20 km in Parma direction) there are 3 areas with camper services: see Google maps for reference











# A world of reliable rotation

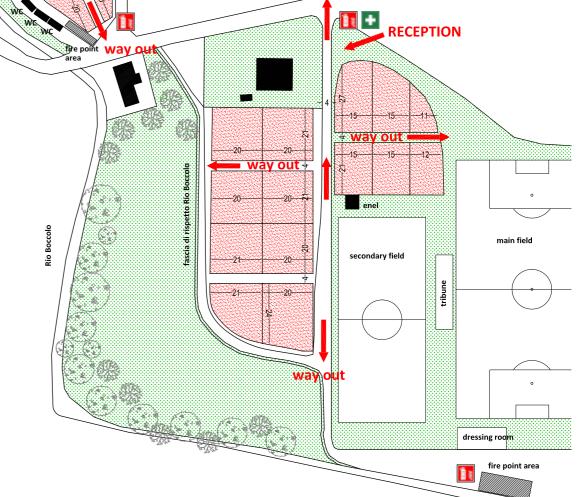












Please note that also inside the paddock of Varano circuit, there are showers, toilets and sinks that teams can use during the event.

Please use sinks when possible (i.e. dishwashing) to avoid overcrowding toilets.

Formula ATA Handbook

### **Camping Rules**

We would like to draw your attention to some behavior rules, in order to assure everyone's safety, peace and calm during the stay. Therefore, we ask everybody to comply with the following points:

### RESPECT THE VENUE AND THE FACILITIES

The Municipality of Varano gives hospitality to all the FSAE Italy & F Electric Italy participants during the event, allowing them the use of its football ground and inside facilities, so please leave the venue as you found it.

We ask everybody to respect your delineated space and the escape routes.

### KEEP THE VENUE CLEAR OF ALL LITTER AND WASTE 2.

Please use the appropriate dustbins available inside the campsite.

### 3. **PARKING**

All vehicles must be parked outside the campsite in free authorized parking areas, located in the Municipality of Varano de' Melegari (ref. map of the authorized parking areas in Varano on https://www.formula-ata.it/parking-in-varano/). If a vehicle parks in a non authorized area, it will be fined or removed by the municipal local police.

### **NOISE LEVELS**

Since the campsite is located next to private houses, please consider noise levels. After 24.00 till 7.00 o'clock please lower your voice and turn off the music.

### 5. **OPEN FIRES**

No open fires allowed. Please use the appropriate barbecue equipment only in the two reserved areas and with a fire extinguisher to be on hand during use. If you have gas bottles, please keep them upright, away from sunlight and heat sources.

### **ELECTRICITY**

Please be sure to take some useful electrical equipment for the connection to the electrical boards; i.e. industrial plugs, electrical extensions.

### **DANGEROUS BEHAVIOURS**

Please consider that dangerous behaviors and alcohol abuse may cause you and other people serious harms.

In case of behavior against the rules, we remind you, it could cost possible penalties which will affect on your team final result.





































info@csi-spa.com + 39 02 383 301









Formula ATA — Handbook



# Note

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ZF at Formula SAE Italy and Formula Electric Italy 2019



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