



Press release

FORMULA SAE ITALY: THE STATIC EVENTS CONCLUDED YESTERDAY, WITH THE PUBLICATION THIS MORNING OF THE RANKINGS AND FINALISTS OF THE BUSINESS PRESENTATION EVENT, DESIGN EVENT AND COST EVENT

Varano de' Melegari, 16 July 2022 - The static events of the Formula SAE concluded yesterday, and the announcing of the rankings took place this morning. Waiting for these results were the teams in all participation classes (1C, combustion cars; 1E, electric vehicles; 1D, driverless cars; and Class 3, prototype-free car design) in the Business presentation event, Design event and Cost event.

As the event has not yet closed, rankings have been released without revealing the podium positions of the winners, showing their respective places randomly. The winners of the static events will be announced tomorrow at the 8.30 p.m. closing ceremony.

In the **Business presentation event**, the competing students are asked to simulate a presentation of their proposed car in front of an audience of potential investors. The teams then present a business plan and convince the audience to invest in their project. The vehicle they bring to the competition must be potentially marketable. Consequently, the breakdown of the business model they intend to use to analyse the customer and market, marketing and communication channels, up to the classic economic-financial analysis (return on investment, break-even point) and a specific investment request to the jury, is divided into five sections.

The effects of the pandemic were noticeable during this test, as some of the new generation teams did not have an effective handover from their predecessors, which is why some of the traditionally better-qualified teams did not make it to the final. However, the pandemic affected the quality of performances and positively revived student enthusiasm, as the event has now returned to the format and numbers attending the 2019 edition. In any sections, several students also stood out this year due to their exceptionally elevated level, making themselves noticed by the event's juries and sponsors.

For the 2022 edition, the regulations adopted in 2021 were kept, characterised by a three-stage, elimination-based division, and shared with Formula Student Austria. Stage 1, the "Racing Elevator Pitch", consists of presenting a 30-second video, with which the teams must capture the jury's attention given the later in-depth breakdown of the proposed business idea. In contrast, stage 2, the "Business Pitch", is a shortened version of the Business Plan presentation, explicitly focusing on financial issues. Both steps took place online over the past few months. Finally, the teams entering phase 3 present their Business Plan, lasting 10 minutes, including a specific Deep Dive Topic - a topic decided by the Jury Coordinators and communicated to the teams in advance. This section encourages the development of creative and innovative solutions to critical issues in the

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evolution of the automotive market - followed by a question-and-answer session. Delivery, i.e., exhibition performance, and visual aids, i.e., the visual tools used, continue to be essential points in the overall assessment, along with the ability to answer questions.

This three-stage formula, initially adopted due to pandemic restrictions (according to feedback collected last year), was appreciated by competing teams. They have the possibility of receiving points by passing stages 1 and 2 and keeping them even if, for some reason, they do not enter stage 3. A winning formula that has also been implemented in other formula students in Europe and that the jury of the FSAE Italy business presentation event intends to improve further for the next edition.

The maximum score for this test is 75 out of the total 1,000 points for the competition as a whole.

The finalists in the four participation classes are not necessarily the teams that showed the most exciting or particularly innovative presentation, as the quality of the business plan presented weighed heavily in the evaluation.

In class 1C, the finalists are **Race UP Combustion** from the University of Padua, **Centaurus Racing Team** from the University of Thessaly and **Rennstall Esslingen** from UAS Esslingen.

For the Driverless Class, the finalists are **E-Team Squadra Corse Driverless** from the University of Pisa, **Squadra Corse Polito Driverless** from the Politecnico di Torino and **DTU - Self Driving Car Project** from Delhi Technological University.

In Class 1E (electric cars), the **Race UP Electric** team from the University of Padua got through to the final with **Dynamis PRC** from the Politecnico di Milano and the **ARUSE** team from the University of Seville.

In Class 3 (presentation of the car design only), went through **AAM Driverless Racing Team** from the Arab Academy for Science, Technology and Maritime Transport and the University of Porto with the **Formula Student FEUP** team in the finals. It is hoped that next year these teams will be able to attend the event with the prototype car to see what they will have achieved.

Moving on to the **Design event**, one of the students' most popular tests, with the largest score of 150 points (out of a total of 1,000), it is the engineering work behind the car that is awarded by a jury of automotive experts - divided into ten sections made up of top designers.

The jury's evaluation is based on the classic categories: suspension, chassis, and engine, but the management model of the team is also evaluated, and some points are awarded to the aesthetics of the vehicle and the degree of creativity and innovation of the design idea.

Great attention is paid to the finals: after the judges question the students in the pits, three teams from Class 1C and three from Class 1E are selected to take part. This is the moment when

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the best cars are publicly presented, and all the judges can scrutinise them up close and compare them directly.

In this edition of the Design event, the general technical level shows that the event is at the beginning of the season, with many cars entering the track for the first time. The Milan Polytechnic project stood out among the Italian teams; unfortunately, they could not claim victory due to a last-minute problem with the car.

Among the finalists in Class 1C of the Design event is **Rennstall Esslingen** of UAS Esslingen, a well-organised team with excellent documentation and an innovative car in terms of aerodynamics, active steering and powertrain control systems. Completing the podium were **Cerber Motorsport Bialystok** from the University of **Technology** and **Race UP Combustion** from the University of Padua, who worked more on the development of solutions already depicted in previous years than on the introduction of significant technical innovations: the former presented an evolution of last year's car, solving its problems, and with a new aerodynamic package to improve the inflow to the radiators; the latter, which stood out for the fluency of its presentation to the judges, also developed last year's car, executing the use of a test bench designed with the university to validate the car's calculation models.

Among the finalists in Class 1E, the **Polito Racing Team** from the Polytechnic University of Turin showed good preparation, competing with a well-built car and making good technical choices, even if they could improve the level of presentation of the work done to the judges. **E-Agle Trento Racing Team** from the University of Trento was characterised by a very sophisticated electric powertrain control and telemetry system and 3D printing of chassis components. Finally, **FS Team Tallinn** of Tallinn UT/UAS showed great attention to detail and excellent organisation of the team's work despite presenting a car without any innovations.

In Class 3, the finalists are **Formula Student FEUP** from the University of Porto and the **Firenze Race Team** from the University of Florence.

In Class 1D, the Design Event score is two hundred points, compared to 150 in the other classes. Points are awarded based on the autonomous system's development and not the vehicle's design. The number of teams in this category doubled compared to the previous year, with electric and endothermic vehicles showing a high average level. For the latter, the choice of an endothermic powertrain is an extra challenge in an autonomous vehicle.

Moving on to the finalists, all presented similar systems in terms of technology, with differences mainly in sensors. **FS Team Tallinn Driverless** from Tallinn UT/UAS took an alternative approach by integrating a lidar sensor on the autonomous system and cameras customised by the team for the specific use of commercially available ones. The other finalists are **Modena Racing Driverless** from the University of Modena and Reggio Emilia and **Polito Racing Driverless** from the Polytechnic University of Turin.

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Finally, the **Cost Event** (worth one hundred points out of a total of 1,000), renewed in 2019 like FSG regulations, focuses on the analysis of cost reports - no longer produced by the teams on tables having standard costs, as before, but based on their costing processes. The focus is not on the cost of the car but on the team's ability to master the 'cost element' from its start. The test is similar to an economics thesis on the vehicle, but without forgetting critical technical and production aspects. Teams produce their standard tables and must illustrate to the judges how they created them, explaining the methodologies and highlighting the verifiable and reliable sources from which they obtained the primary data. Among other assessment categories, cost understanding features prominently. The latter skill is assessed by examining a document prepared by the teams before the event (cost explanation file) or through a Q&A process during face-to-face discussions. In addition to the topics related to the cost of the car in the narrower sense, there are also several issues of great relevance today: the environmental impact of the vehicle and its production and disposal, make-or-buy decisions, estimating the differences between prototype and mass production, and some significant elements of resource planning and risk management.

The Cost jury consists of thirty members, divided into five panels, who visit each team in person in the pits. New this year is an internationalised jury from four foreign countries representing three continents: for the first time, a judge from India, two Croatian judges and one from Brazil. Some of these come from experience in other SAE/Student Formulas, adding value to the Italian event.

We confirmed the decision to give feedback to the teams directly after the inspection to maximise their quality again this year.

As with last year's Formula SAE Italy, many teams were challenged by the pandemic, which hindered the communication of knowledge from one generation of team members to the next. As a result, some teams that had traditionally presented excellent work fell short this year, although a solid determination to regain their former levels appeared. Some teams stood out for their superb job constructing the costing model. In contrast, others focused their efforts on ensuring the credibility of the costing system and its use at the level of car costing.

The best performances involved not only teams that have shown a steady path of growth over the past few years but also some teams that "surprisingly" came out on top.

The top three finishers in Class 1C include **Scuderia Tor Vergata** from the University of Rome Tor Vergata, the **Centaurus Racing Team** from the University of Thessaly and the **Rennstall Esslingen** team from UAS Esslingen. In Class 1E, the **UH Racing** team from the University of Hertfordshire, **AXLR8R Formula Racing** from the Indian Institute of Technology Delhi and **FS Team Tallinn** from Tallinn UT/UAS are in the finals. Class 3 finalists included the **Driverless Racing Team** from the Arab Academy for Science, Technology and Maritime Transport, **Formula Student FEUP** from the University of Porto and **Firenze Race Team** from the University of Florence. Finally, Class 1D was the **Polito Driverless Racing Team** from the Polytechnic University of Turin, **UniNa Corse** from the University of Naples Federico II, and **Team Bath Racing Electric** from the University of Bath, who achieved the best results.

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A decisive point to emphasise is that Formula SAE Italy, more than a competition, is a learning event. Hence, the importance of the feedback session on the static events to the youngsters - held today from 9.30 a.m. to 12.45 p.m. - in which the panels of judges who judged the various teams had an individual interview with those who requested it. Aimed at supplying ideas for improvement that, year after year, the teams showed they could take on board and introduce in the proposals for the next competition.

You can find further information on the event's website (<https://www.formula-ata.it/>), where you can find the complete programme (<https://www.formula-ata.it/official-schedule/>), a list of participants (<https://www.formula-ata.it/registered-teams/>) and all event details.

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ANFIA - Italian Association of the Automotive Industry

Born in March 1912, over these one hundred years, ANFIA mission has always been to represent the interests of its associate members and ensure effective communication between the Italian motor vehicle industries on the one hand, and the Public Administration and Italian political bodies on the other, with regard to all technical, economic, fiscal, legal, statistical and quality-related issues referred to the automotive sector.

The Association is structured in three product-based Groups, each one chaired by a President.

Components: motor vehicle parts and components manufacturers; Car Coachbuilders and Designers: companies working in the sector of design, engineering and style of motor vehicles and/or parts and components for the automotive sector; Motor vehicles: motor vehicles manufacturers in general, including trucks, trailers, camper vans, special means of transport.

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The Automotive Production Chain in Italy

5,156 companies

268,300 employees (direct and indirect), the 7% of the employees in the Italian manufacturing sector

92.7 billion Euros of turnover, which means 9,3% of the Italian manufacturing sector turnover and of 5.2% of the Italian GDP

76.3 billion Euros of tax levy of motorization

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Formula SAE Italy

Formula SAE was established in 1981 on the initiative of the Society of Automotive Engineers (SAE) and requires the participating students to design and build a prototype single-seater racing car destined for eventual sale. They must follow specific technical and financial constraints as if a company in the automotive sector commissioned it for a non-professional user. During the event, the teams of students take part in static tests - Design, Business Presentations and Cost Events - and dynamic tests on the track (Acceleration, Skid Pad, Autocross, Endurance; for Class 1D, the Endurance has been replaced by the Trackdrive).

The event aims to focus not on the competition itself, but the skills acquired by the young people in terms of engineering knowledge, commitment, organisation and adherence to deadlines, design coordination and product presentation. Thus, the competition is an educational event in which young people can learn teamwork dynamics, with strict rules and deadlines that must be respected and be put to the test in the actual construction and design phases of a prototype and with all the difficulties that this entails. Formula SAE arrived in Italy in 2005, organized by ATA (Associazione Tecnica dell'Autoveicolo). After 12 editions, since 2017, with the acquisition of ATA by ANFIA, the organization of the event passed to ANFIA, which organized 4 editions at "R. Paletti" Racing Track of Varano de' Melegari (Parma).

<https://www.formula-ata.it/>

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