

How to ROCK the Statics!

Presented by FSAA



Presenters



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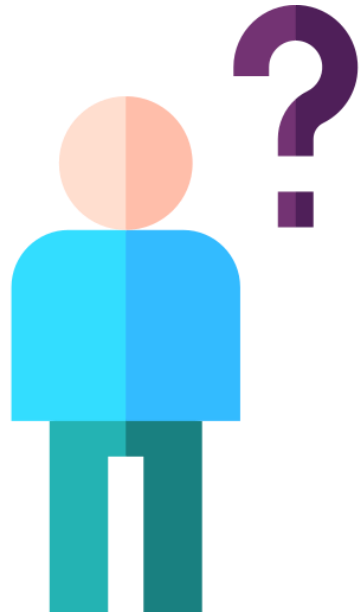


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- 
- *Rulebook - Changelog*
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Introduction



Beginners



Advanced

Who do you love the most?

“Which of the static events do you think is the most important?”

-Anonymous



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General Advice

Good Practices

- Be on time!
- Be prepared for the event in advance
- All year round – start early and perfect it
- Clear, concise, organized – achieved only with practice
- Feedback – get second opinion



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Business Plan Presentation

Business Plan Presentation

Rulebook - Changelog (S 1.1.1 Clarified Rule)

2023

The objective of the BPP is to evaluate the team's ability to develop and deliver a comprehensive business model. This business model must refer to the team's specific prototype race car or a specific component of it. In doing so, the team must offer the car or component as a product or sell a service that relates to it providing a rewarding business opportunity that creates a monetary profit.

2024

The objective of the BPP is to assess the team's ability to develop and to present a comprehensive business model. This business model must relate to the team's specific prototype vehicle or a specific component of it. In doing so, the business must offer the vehicle or component as a product, or sell a service based on it, providing a rewarding business opportunity that creates a monetary profit.

Business Plan Presentation

Rulebook - Changelog (S 1.1.3 Removed redundant information)

2023

~~*“The business plan must relate to the specific prototype race car entered the competition.”*~~

Read the Competition Handbooks for further and more detailed information about specific competitions when preparing for them!

Business Plan Presentation

What does the Judge say?

What not to do [Before you start]:

Rushing to start your presentation as soon as you enter the room

Being unaware of your physical surroundings

Being mismatched with your presentation design or your team visual identity

Business Plan Presentation

What does the Judge say?

What not to do [Presentation]:

Using a generic PP templates in a non-creative way

Using “cheap” looking animations

Using a colour scheme that might not show on the screen given at the event site

Using unusual charts and data representation if you are not sure about it.

Not having a table or contents slide OR not having some indicator where we are in the presentation

Not having the team name or at least a car number stated clearly.

Not having numerated slides

Putting too much information on one slide

Talking from your heart and improvise a lot instead of sticking to a specific text

Using difficult to pronounce words just for the sake of using them or sounding professional

Apologizing if you make a mistake while speaking

Not showing any enthusiasm while you are trying to sell something

Using prompts or physical parts for the sake of it

Using country or region specific details, but with wrong emphasis

Reading from papers or cheat sheets

Business Plan Presentation

What does the Judge say?

What not to do [Q&A]:

Being extremely scared
that you won't know
the answers

“Fighting” between the
presenters to answer
the question

Not knowing when to
stop answering

Not knowing which
data you have in the
supporting materials
and where

Being afraid of saying
something stupid if you
don't know the answer

Business Plan Presentation

What does the Judge say?

- “We had the most objections to the financial plans and predictions (they did not take into account the volatility of the market in relation to the ‘agreed’ deals, that is, the conditions - what about materials, what about raw materials, etc.”
- “In the presentations where there was space to present a creative idea visually, they did not make too much of an effort and some ideas remained only as text on paper, which affected the visualization of the solution”
- “Some presented ideas did not have sufficiently well-developed market research, which in one specific case affected the evaluation because the solution is known and already present on the market and is already being used in an identical form”

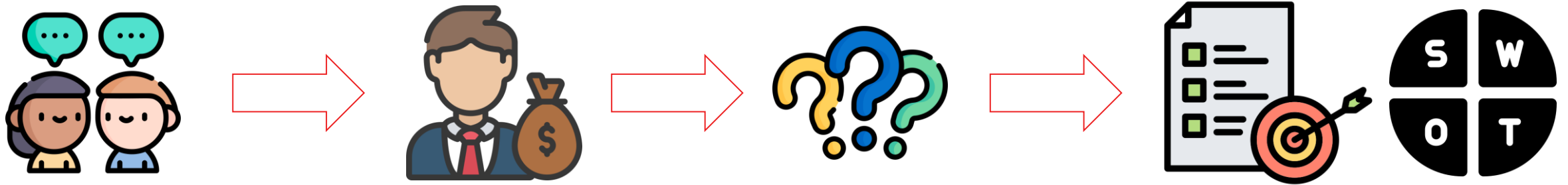
Business Plan Presentation

What does the Judge say?

- “Some teams approached the presentation too ‘relaxed’ and presented their solutions rather poorly and were unconvincing”
- “It is perhaps necessary to focus more on the fact that the judges must ‘buy in’ to the idea, that is, persuade them to invest”
- “Some teams did not have their investments worked out in sufficient detail - it was not clear in some situations what the investment is for, how and to what it is divided and in what period the expected ROI is”
- “One idea was even vaguely fragmented - the solution included two parts of the project, so it was not clear at the end what the investment was needed for at all”

Business Plan Presentation

What does the Judge say?



Back-up
slides!



Check the
numbers!



Business Plan Presentation

- We know these ***all*** comments are hard to incorporate into your team's work :)
- Not all judges in FS world would agree with their specific field's comments presented in this session
- Take what you can from this, incorporate step by step - don't overdo it!
- And most importantly...

Don't forget to
have fun! :D



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Cost & Manufacturing

Cost & Manufacturing Event

Rulebook - Changelog

S2.4.4 “Fasteners” are additional items necessary to assemble the “part” and should not be listed.

- Existing rule clarification
- No major changes for 2024
- Keep an eye out for FSG Handbook for DBOM and CBOM systems (Usually released in December/January)

Cost & Manufacturing Event

What does the Judge say?

- Cost report documents must be understandable to a 3rd party (judges) without ever seeing the car. Supporting Material File helps us to understand and visualise the information from the Bill of Materials
- Everything costs money. Even if a part or an operation was provided from a sponsor, you should still estimate the market value of the received material or service
- Do not place parts in 'alternative' systems to avoid extra work. Rather than look for minimal effort, show us what you can do!
- Try to be complete. Machining cost involves a lot more than just electricity. Ask a sponsor for advice

Cost & Manufacturing Event

What does the Judge say?

- Vehicles must be presented for cost and manufacturing judging in finished condition, fully assembled, complete and ready-to-race
- Scoring high using “fancy” equipment such as giant banners and tablet computers is not guaranteed. Your knowledge and preparation should be your greatest assets on a C&M Event
- A good presentation will help you score higher. Know your car and know your documents
- Do not put dedicated drawings of standard parts such as bearings, screws, pins, nuts or washers in Supporting Material File

Cost & Manufacturing Event

Q&A Topics

- For a lot of questions, the answer is written in the rules
- Every item listed in CBOM must have a cost value
- Use comments in CBOM and use them wisely
- The location of Assembly processes is determined by the team. Decide for a system and stick to it for the whole document
- Parts provided by sponsors count as bought parts. If they were designed by the team, the process should be described in DBOM/CBOM. Handling of confidentiality agreements is up to the competition/judge

Cost & Manufacturing Event

General advice

- Use documents from previous years as a starting point and improve them according to feedback from the judges
- Work on Bill of Materials and Supporting material can start right after the design freeze. Use them as they also have a purpose
- Get your whole team involved in making Cost Report Documents
- Practice looking up parts in your documents
- Get feedback from the judges



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Engineering Design

Engineering Design Event

Rulebook - Changelog

FSG

Category	Points
Overall Vehicle Concept	20
Software	10
Vehicle Performance / Aerodynamics	30
Mechanical / Structural Engineering	10
Tractive System / Powertrain	20
LV-Electrics / Electronics / Hardware	10
Autonomous Functionality	30
Driver Interface	10
Engineering Design Report (EDR)	10

Table 7: Maximum scores in engineering design event

Category	Points
Overall Vehicle Concept	20
Software	20
Vehicle Performance	20
Actuators	10
LV-Electrics / Electronics / Hardware	20
Autonomous Functionality	60

Table 8: [DC ONLY] Maximum scores in engineering design event

FSA

AT 5.1.2 Engineering Design Scoring Criteria

Rules 2026\Table6 is void. The Judging Criteria for FS Austria are

- Design Report
 - Design Approach
 - Knowledge/Understanding
 - Execution/Build
 - Use of Resources in the engineering fields
 - Creativity/Innovation
 - Presentation
 - Documentation & Management
-
- Suspension
 - Frame & Body
 - Aero
 - Drivetrain (EV/IC)
 - Electronic Systems
 - Ergonomics

for 10 (intermediate) points each. The final design score will be calculated from the intermediate score through normalization and scaling.

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SCORING (CV/HV & EV):

Category	Points
Aerodynamics	24
Chassis and Ergonomics	24
Electrical and Control Systems	24
Overall Vehicle Concept and Management	24
Powertrain	24
Vehicle Dynamics	24
EDR	6

SCORING (Concept Class Driverless – CCD):

Category	Points
Aerodynamics	15
Chassis and Ergonomics	15
Electrical and Control Systems	15
Overall Vehicle Concept and Management	20
Powertrain	15
Vehicle Dynamics	15
Autonomous Functionality	50
EDR	5

Engineering Design Event

General Info

- Is it your first time presenting?
- Confidence - no wrong answers
- Clean and Tidy – the vehicle must be presentable, as should you
- From paper to hologram – ask yourself: “Does paper report/banner/ppt/... add value and complement your presentation?”
- Preparation is the key to success

Engineering Design Event

What does the Judge say?

- Doing something purely for the sake of innovation – make changes and improvements because it is in your best interest and the goal of having the best (fastest & most reliable) vehicle on the track
- Be proud of your work - when the teams don't prepare for the event, they give the impression that they came here just to work and show off that they finished another event, and not to stand out in front of the others

Engineering Design Event

What does the Judge say?

- Basics - not knowing the theory of your work is a huge minus, and it's an absolute no-go when we hear "well, we didn't change it because it worked last year"
- Based on what? - it is very important to substantiate the claims and answers you give. The display of the data you examined during the development of the vehicle must be prepared in advance on your computers/printouts
- Theory vs. practice – without validation your results are meaningless and are not a long-term forward path to success

Engineering Design Event

What does the Judge say?

Examples

- *Suspension kinematics* -> should be better prepared and know why you chose exactly this kinematics (camber curves, toe curve, roll center heights, antisquat/dive...) and not something else
- *Peak loads* -> have better explanation on how you determined peak load cases and safety factors for designing the suspension components
- *Dampers* -> measure damper characteristic on shock dyno, also check if all dampers are matching through full range of compression/rebound settings. Explain how you are tuning dampers, how you are using wheel travel sensors to tune dampers (damper velocities, histograms...)
- *Steering system compliance/freeplay* -> most teams have considerable freeplay in steering system (mostly in steering wheel quick release hub), would be good to eliminate this

Engineering Design Event

What does the Judge say?

- Big picture - When comparing the concepts of a part of a system, the impact on the entire car should be considered.
Example: we have teams that have an LV battery, and some have a DCDC inside a HV battery, and both teams assure me that their solution is better but can't argue that very well. One argument is that you have a smaller mass because there is no LV battery, but they forget that, for example, DCDC will influence the HV battery to be larger, need additional cooling, etc.
- Transfer of knowledge – Show during presentation and through your supporting material if and how the transfer of knowledge exists in your team. This can be achieved with two people present at the presentation, showing the documentation of your process, how you improved on your previous design, testing and analysis, testing notes...

Engineering Design Event

What does the Judge say?

- Testing – Creating and sticking to test procedure
Example: Team tested their car a lot, but it happened again that their VCU overheated during endurance, which could easily have been discovered during testing
- A look back to the past - A lot of teams say that you have improved the reliability of the car, but you have no metrics for it or an explanation of what was the problem with the previous car



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Q&A



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**Thank you for
participating!**