

**FORMULA STUDENT
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**DEEP DIVE
TOPIC
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F1 RETRO: ENGINEERING WITHOUT THE MACHINE

By 2035, motorsport has become faster, cleaner, and more advanced than ever before. Artificial intelligence, supercomputers, digital twins, automated simulations, and real-time optimization tools are now part of almost every engineering decision. Cars are extremely efficient, strategies are calculated instantly, and development is driven by data at a scale no human team could process alone.

But the FIA has identified a problem.

Racing is becoming too optimized. Many technical solutions look similar. Fans are asking for more visible human skill, more mechanical character, and a clearer connection between engineering decisions and on-track performance. Young engineers are becoming experts in software tools, but not always in first principles, hand calculations, physical testing, or mechanical reasoning.

To answer this challenge, the FIA announces a new future championship:

F1 RETRO

F1 Retro is not a historic racing series and it is not about copying old Formula 1 cars. It is a future championship where teams must create a competitive racing car under strict limits on modern development tools.

Teams are not allowed to rely on artificial intelligence, advanced CFD optimization, supercomputers, automated design systems, digital twins, or black-box simulation tools. Instead, they must use first-principles engineering, hand calculations, simplified models, physical testing, driver feedback, clear assumptions, and practical experimentation.

The cars must still be safe, professional, and technically credible. “Retro” does not mean outdated or unsafe. It means that the championship rewards engineering judgment, creativity, mechanical understanding, and transparent decision-making.



THE CHALLENGE

Your Formula Student team has been invited by the FIA to prepare a proposal for joining the first F1 Retro championship.

You must present a business case for how your team would design, develop, finance, and operate an F1 Retro vehicle over a 10-year timeline. Your submission must combine technical reasoning, strategic thinking, financial planning, evidence, and market vision.

QUESTIONS TO ADDRESS

Think about the following questions while preparing your report:

- What does “retro” mean in your concept: the car, the tools, the racing format, the fan experience, or all of these?
- Which technologies would be banned or limited, and why would this make the championship better?
- How would your team make engineering decisions without AI, advanced simulation, or supercomputers?
- What are the main technical choices behind your car: chassis, powertrain, aerodynamics, suspension, brakes, materials, safety, and testing?
- How would your team develop the vehicle over a 10-year period, from first concept to competitive championship entry?
- Which historical or current motorsport examples support your approach?
- Why would fans, sponsors, media partners, and manufacturers care about F1 Retro?
- How much would your project cost, and how would the budget be allocated across vehicle development, testing, people, logistics, operations, and marketing?
- What trade-offs does your team accept by limiting technology, and why are those trade-offs worth it?

WHAT THE FIA EXPECTS

The FIA wants more than nostalgia. It wants a serious proposal for a championship that proves great engineering can still come from human understanding, not only from machine optimization.

Convince the FIA that your F1 Retro concept is technically credible, financially realistic, commercially attractive, and exciting for the future of motorsport.



SUBMISSION

BPDD Deadline: 2026/06/27 - Upload to FSAA Website

Format: Write a report in the form of a 4 - 7 page essay. Follow the instructions in the handbook.