



FSG All-Star Car

The Idea

FSG 2021 will be a different experience to all of us due to the fact that the static disciplines were held virtually and the number of people per team present at the event site is limited to 8. We understand that many young and motivated students are forced to watch their team from home instead of being in Hockenheim cheering for their favorite car. Our goal is to keep the ones who cannot be present entertained and simultaneously, try to tap into the design skills and creativity of our powerful community of Formula Student.

Inspired by All-Star sport teams like in NBA or soccer championships, we would like to create the ultimate Formula Student race car with your help. To spice things up, we have set performance goals for the All-Star Car like being able to run a **skid-pad and an acceleration event in under 5 seconds**. So, longitudinal and lateral performance matters! However, Formula Student is about amateur weekend racers (business plan judges nodding at this point) and not everyone has a full-blown race track available. Infact, some would like to go off-road racing with it, so why not make it **adaptable for Baja events** too?! A change in suspension setup and swapping tires might just do the trick, and the All-Star Car will jump 1m high kickers and go off-road.

How does the design process work?

We kick off the short and intense design phase with this announcement and plan to feature your designs in the FSG Daily Live Shows (broadcasted daily at 9:30pm). There will be a **new part group released every day** and we invite everyone at home to participate. During the live shows from Monday to Thursday there will be a **voting** between the **three best designs submitted by 8:00pm** each day. The winning part of the day will be the basis for the next design on the following day (the CAD-files will be shared on our homepage). Here is a short outline of the time schedule:



Depending on the progress of the All-Star Car, we plan to have Friday and Saturday for final touches like color and trim, and will add some engineering perspective to it. If you would be available to support us with one of the following skills, we would really appreciate a brief application to: all.star@formulastudent.de .

- Color & trim design (make it look incredible)
- Motion graphics (animate the car in a virtual environment)
- CFD development (tweak aerodynamic performance)
- Adams Car simulation or similar (study vehicle dynamics)

How to submit?

We ask you to design in your favorite CAD software and submit **STEP-files** which will be supported by a wide range of different CAD softwares. Furthermore, when submitting your design, please attach a brief description (including special features) in the form of a single page PDF. If your design is selected as one



of the top 3 of the day, you will receive a Zoom invitation **to pitch your work at the FSG Daily Live Show (30sec).**

How much detail necessary?

You have guessed it: as much as possible. However, we are aware that there will be some simplifications needed throughout the design like omitting brake lines, wiring harnesses, internal designs of motors/ batteries etc. That is fine, we don't expect to have the design ready for manufacturing on Sunday ☺.

Scrutineering?

As much as we would have liked our scrutineers approving the All-Star Car, they are just too busy checking your cars in tech inspection. So, no one pays attention if the All-Star Car does not fulfill all parts of the current FSG Rules. However, we have created a set of rules (see below) which will set guidelines for your design (and prevent us from having a tractor or washing machine with wheels at the end ☺).

The Rules (FS-ASC v1.0):

- Max. LxWxH: 3200 x 2000 x 1600mm
- Min. wheelbase: 1525mm
- Electric powertrain AWD, TSAL necessary
- Open-wheel single seater
- Driver: 95 percentile male
- Clear driver's field of view
- Roll-over protection + front crash box

Note: The rules are set to be minimalistic on purpose. Surprise us! ☺

First Part Group: Chassis/ Frame incl. driver

Naturally, we start with the chassis/ frame including the driver and driver inputs to set the baseline for all the following parts of the All-Star Car. Please incorporate package space for the powertrain. Openings for further parts can be added in the following days.

Due date: Monday, August 16, 8:00pm CEST

If you have questions, feel free to contact all.star@formulastudent.de. Looking forward to receiving your designs!