



TEAM DEFIANZ RACING

Newsletter | Jan 2020

SNAP OF THE MONTH



Looking ahead to tuning.
#StayTuned

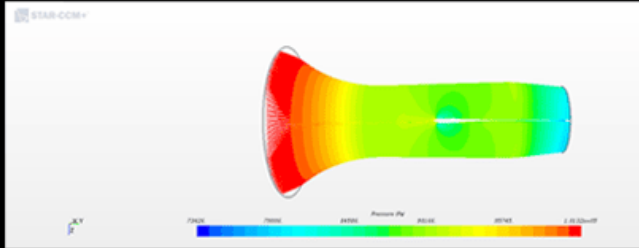
TEAM UPDATES



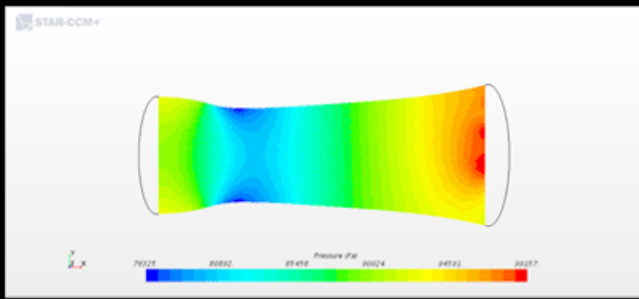
- The team started the second half of the season with recruitments in order to bring in new ideas and fresh thoughts to the table. Our social media handles along with PR desks and class-to-class promotion led to an extensive outreach. The final round of technical interviews will be conducted in the following days.
- The team is running on all engines in order to prepare for the FS quizzes and no stone is being left unturned when it comes to a thorough preparation.
- Our project for this year, the DR20, has entered its manufacturing phase after an impressive design phase which was replete with innovations and ideas.

DEPARTMENTAL UPDATES

POWERTRAIN

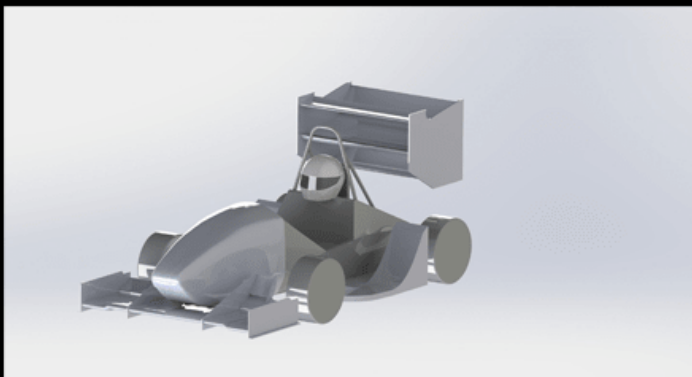


The fuel tank was made on CAD according to spatial constraints. The exhaust was also added. The department ran numerous simulations on Ricardo for different plenum volume and runner length.



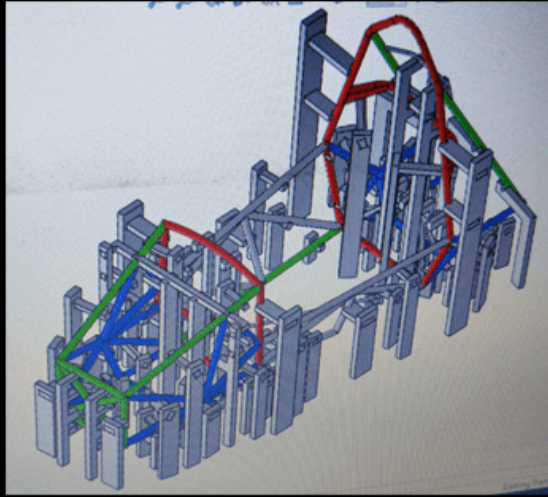
The wiring of DTA ECU has been completed. The department is currently undertaking venturi optimization on ccm.

AERODYNAMICS



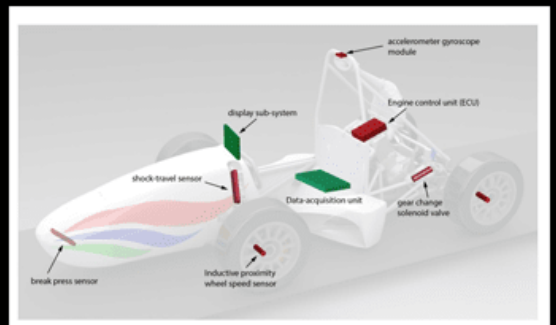
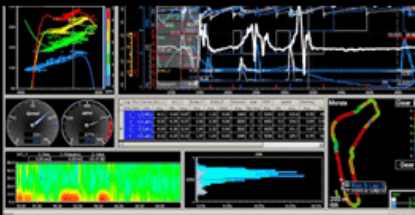
The design for the side pod was finalized for better cooling. The diffuser was partially redesigned and simulations were carried out for the same. The department finalized the design of the front wing. The team is currently iterating on various nose designs.

CHASSIS



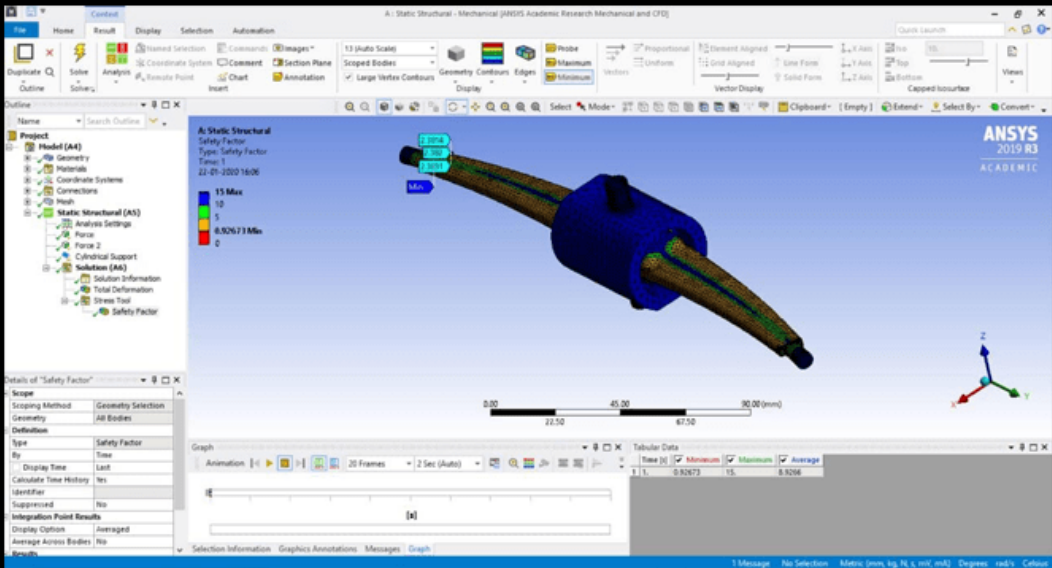
The department iterated the chassis for weight optimization. Work was done on packaging of other assemblies as well. Currently, the department is working on chassis jig and increasing its reliability by providing surface contact to most of the tubes.

SOFTWARE & ELECTRONICS



The electronic department finalized the design of the electronic box on CAD. Work was done on the centralized power distribution system and the electronic proshift system. The department is currently working extensively on CAN protocol to access the data from the ECU. The software department made some progress on the web based telemetry and is currently working on Node.js and socket io for back-end web development and on React for front-end.

VEHICLE DYNAMICS



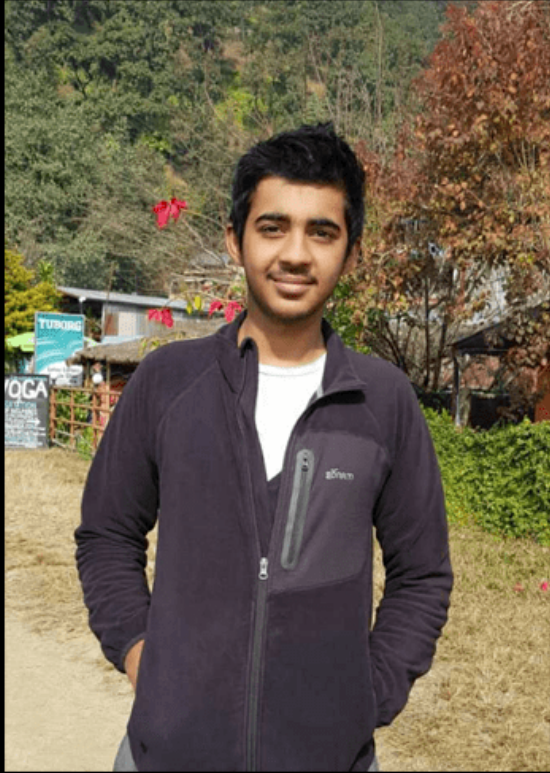
The vehicle dynamics department spent the month finalizing the design of various subsystem components and making the CAD assembly. The complete front and rear suspension components were 3D modelled with extensive optimization being done on the rear bulkhead and rocker geometry. The anti roll bar design was finalized and adjustability given so as to provide multiple feasible roll gradient and roll rate distribution setups. The steering assembly was also finalized along with the pedalbox.

Tire data was used to generate a .TIR file using MATLAB which was imported into Adams software to plot various tire curves.

This data was used to calculate the maximum torque at the steering wheel required from the driver.

The tire curves are also being analysed to find the best Ackerman geometry.

KNOW THE MEMBERS



TEJASWO TIWARY M.E.- 1ST YEAR

I am a member of the Vehicle Dynamics department in Team Defianz Racing. I describe myself as a reticent yet ambitious person. I have a keen interest in music, basketball and about 2 years ago I also discovered my passion in biking.

I have been fascinated by automobiles, bikes and cars ever since I was a child. So much so that it motivated me throughout my teenage all the way to college and finally made me opt for a major in mechanical engineering. When I came to DTU and saw the posters of TDR, it added fuel to the old flame and I knew that I had to somehow get in the team. I was elated when I was recruited and till this date, I consider myself extremely fortunate to be able to work in a team which has such a rich history and is thriving each and every day. It is not only the thrill of working on a Formula style car, but to be able to work with teammates and seniors who always help you improve and become a better version of yourself, is a pleasure. I look forward to expanding the horizons of innovation and imbibing values like team spirit while embarking on this exciting new journey.

ROLLING BACK THE DAYS...



VANSH SHARMA
M.E.(2017)

I joined Defianz in Aug'14 and I still feel connected to it. I started in the Powertrain Department, assisting with the designing and manufacturing of the driveshafts for a semester and subsequently moving to the IC engines. I got the opportunity to work extensively on the heat exchanger, intake and calibration that helped me realize my interest in Fluid Mechanics. I learned, apart from the obvious engineering knowledge, the art of teamwork, resolving conflicts and appreciating & accepting disagreements, human engineering and a lot more which prepared me for the 'real world' and I am forever grateful to the team for this experience.

I have a message for the team, something which I always believe in and which has helped me sail through tough situations in life; It is the zeal to never give up! Also, there is a reason why we are called 'Team Defianz Racing', and not just 'Defianz Racing'; It is because the team comes first, before you! You fail together and succeed together, as a team. So keep innovating and all the very best!



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