



HFS

RACING TEAM

NEWSLETTER

NOVEMBER 2023



A SPECIAL THANKS TO OUR PARTNERS

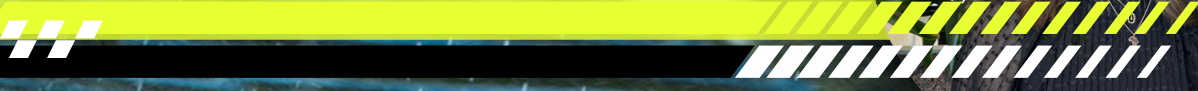
HAN_UNIVERSITY
OF APPLIED SCIENCES



Welcome to the official HFS newsletter! My name is Amy, I am head of communications and marketing for the team.

In this monthly newsletter you can expect a front-row seat to our season – filled with technical insights, behind-the-scenes glimpses, and you can learn more about our diverse team of talented engineers!

Enjoy the read!





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Team Principal

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Hello everyone!

This is Santi again, well this past month the team has been working extremely hard towards our goals. With continued improvement, we keep on growing in our development, financially and as a team. We are extremely grateful for getting support from our new partners. Make sure to read this month's newsletter, there is quite exciting news to share!





Some updates in the garage - our test car has now been repainted in our new colour and the new logo is up in the team area!





Meet The Team

From Left to right, front row: Mekhail Linger, Erwin van Tilburg, Airidas Zauka, Matthew Žukovskis, Mark Borggreve, Santiago Sanchez, Marc de Boer, Andreas Lövgren, Amy Brough, Hamza Benkaddour, Lars Meijerink

Middle row: Marc van der Meer, Dirk van der Steenhoven, Robert de Visser, Simon Witteveen, Bastiaan Wigboldus, Rick Meijer, George-Radu Oltean, Sidhard Kanhaisingh, Lars Pennewaard, Suleman Alchikh, Tenno Kolkman

Back row: Gijs Bartels, Raf van Oorschoot, Lisanne van Twillert, Marc Giezen, Teun Marcelis, Garoe Delgado, Robert Lontouschi, Bogdan Gabriel, Jeroen Rusch

Department Updates



Low Voltage

This month our Low Voltage department finished research for the dashboard and started working on the schematic of the shutdown circuit.

They also finalised the inverter choice document, selected a sensor for the accelerator pedal position sensor, and gained further understanding of J1939 CAN bus protocol development, which is a crucial part of the ECU development because this protocol enables them to reliably and swiftly communicate with the inverter and battery management system.

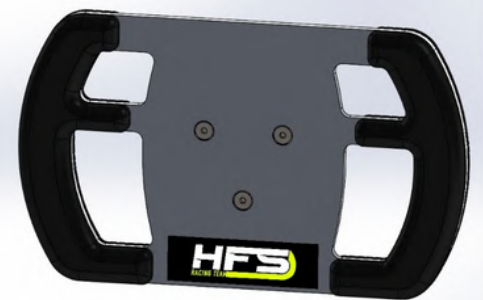
They also worked on the low voltage power source choice finalisation.

Vehicle Dynamics

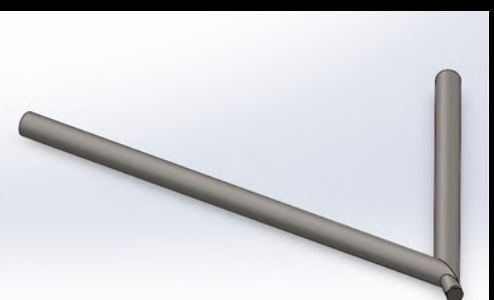
Our Vehicle Dynamics department researched the steering system, looking into what joint would suit our steering system best to decrease the amount of play within the system. They created concept designs for the steering wheel and the redesign of the rear suspension wishbones.

They carried out calculations on the brake system, to calculate optimal brake pressure and brake bias. Since we are running downforce this year, we must account for extra forces working on the car/tires.

They have also created an advisory report for the front suspension, to get a good overview of what is wrong with the current front suspension so next year's students can make a redesign.



Steering wheel concept



Concept redesign rear wishbone

Department Updates

Powertrain

Our powertrain department has completed the cooling system research and has come up with a preliminary design.

They also completed the TSAC (tractive system accumulator compartment) research alongside a preliminary design for it. The battery choice, layout, and inverter choice have been finalized. The department has decided to use a Bender IMD and completed all research relating to that. They have also completed the physical design of the powertrain configuration.

Lastly, they have gained a complete understanding of the BMS system options and made a plan for moving forward with this complex component.

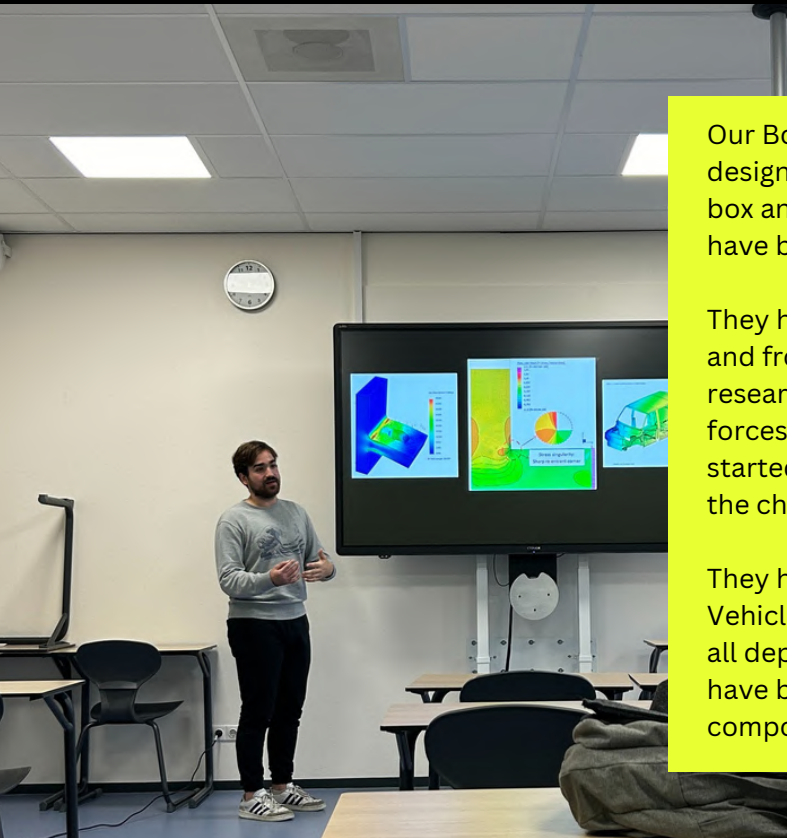


Bodywork and Chassis

Our Bodywork and Chassis department has been finalising a few designs over the last month, including the rear wing, the pedal box and its working function, and the firewalls. These designs have been made based on research, calculations and simulations.

They have also been working on concept designs for the side pods and front wing. Overall, they have been working on more research, running simulations, and calculating the necessary forces for mounting points and connections. They have also started researching manufacturing methods of certain parts and the chassis itself.

They have also been working closely with both the Powertrain and Vehicle Dynamics departments to make informed decisions that all departments agree with, for example on the backend, they have been working closely to ensure understanding of the component setup to fit in the back of the vehicle.



Professional MotorSport WORLD EXPO

Events

Earlier this month we attended the [Professional MotorSport World Expo](#) in Cologne!

This event was set up to showcase the latest and best technologies in the world of motorsport and ultra-high-performance road cars!

It was a really great event with interesting talks and some amazing exhibitions. We were able to continue growing our network and our engineers were able to start looking for potential internships.

We thoroughly enjoyed the trip to Germany and had a wonderful time at the expo!



Simulation and Solidworks Workshop

Highlights

A highlight of this month is that we had two former HFS members come back to give our current engineers a workshop in simulations and Solidworks!

Jose and Monish took time out of their schedules to help us out.

This was extremely helpful as simulation courses only start in the second semester and our engineers need to start working with them as soon as possible.

We are very grateful to have past members who are still willing to come back and support the team!



Gelderlander Article

Highlights

This month we were fortunate enough to have a journalist from the Gelderlander come and interview us for an article in the newspaper!

We featured in Tuesday's issue where they highlighted our journey and goals and spoke more about our journey to FSN 2024

Take a look below!

Studenten van de HAN werken aan snelle bolide

Internationaal gezelschap droomt op Arnhemse Automotive-opleiding van een toekomst in de Formule 1. ► P2



HAN-studenten dromen van racen op

Studenten van de HAN in Arnhem dromen van deelname aan een internationale studentenrace op het circuit van Assen. Ooit hopen ze in de Formule 1 te werken.

Het is muisstil in de praktijkruimtes van de Automotive-opleiding van de Hogeschool van Arnhem en Nijmegen. Aan grote tafels zitten zo'n dertig studenten geconcentreerd achter hun laptop. Een docent kijkt naar een van de schermen en spart met een student. „Ze bespreken het design van

onze voorvleugel”, zegt Santiago Sanchez (21). Wat Christian Horner is voor het Formule 1-team van Red Bull, is teambaas Sanchez voor HFS, het raceteam van de HAN in Arnhem. „Hier ontwerpen we onze elektrische Formule-auto, die komende zomer op het circuit van Assen moet deelnemen aan een internationale wedstrijd voor studententeams.”

Sanchez, geboren in Uruguay, wijst naar de verschillende tafels, die zich allemaal bezighouden met een ander aspect van de auto. Van de elektrische motor en software tot het chassis en de marketing en communicatie. „Alle deel-

nemende studenten hebben bij dit team gesolliciteerd. Dit is een internationale opleiding. Ons team bestaat onder andere uit Duitsers, Spanjaarden en Canada'sen.”

In het garagegedeelte wordt gesleuteld aan een oud chassis, met buizen als geraamte. „We halen er onderdelen af voor hergebruik”, zegt Mark Borggreve (21), manager voertuigdynamiek. „Wat hier gebeurt, leer je niet in een klaslokaal. Niet alleen de praktijk van de techniek, maar ook die van het samenwerken en communiceren.”

Volgend jaar juli wil het HFS-team starten in Assen. Op het in-

circuit van Assen én van de Formule 1



Op mijn zestiende zag ik op tv mijn eerste race. Ik was direct verkocht

– Amy Brough

ternationale studentenevent wordt geracet, maar niet rechtstreeks geduëlleerd. „Er zijn verschillende onderdelen”, vertelt Sanchez. „Wie rijdt de snelste ronde? Op een natgemaakte baan wordt de grip getest. Er is een endurance, waarbij je zoveel mogelijk

rondes moet rijden, om betrouwbaarheid te bewijzen. Het gaat niet om de beste coureur, maar om wie de beste Formule-auto heeft gebouwd.”

Assen is zowel doel als droom. „We hebben al aardig wat geld binnengehaald, maar kunnen nog meer support gebruiken”, vervolgt Sanchez. „Daarvoor krijg ik hulp van Amy.”

Amy is Amy Brough (23) uit Zuid-Afrika. „Onze auto is elektrisch. Bedrijven die willen helpen, dragen niet alleen bij aan een duurzame racewagen, maar ook aan de ontwikkeling van studenten die de techniek van de toekomst onder de knie krijgen.”

Brough, zegt Sanchez, wil later in de Formule 1 werken. „Klopt”, zegt Brough. „Op mijn zestiende zag ik op tv mijn eerste race. Ik was direct verkocht. De adrenaline, het reizen, het internationale karakter, het avontuur. Ik wil dolgraag onderdeel worden van dat wereldje.”

Het HFS-team, vult Mark Borggreve aan, is een perfect opstapje. „Ik wil zelf ook de racesport in. Er is een HAN-student die bij het Formule 1-team van Ferrari is beland. De wedstrijd in Assen staat in de racewereld goed aangeschreven. Als het lukt om deel te nemen, staat dat prachtig op ons cv.”

– Remco Kock

The logo for Bondi, featuring the word "bondi" in a white, lowercase, sans-serif font on a blue rectangular background. A small orange flame-like icon is positioned above the letter 'i'.

Upcoming Events

NETWORKING EVENT

DATE 06/12/23

TIME 10:00 - 13:00

PLACE Outside R29, HAN Arnhem

Next week we have an exciting company coming to campus!

Bondi offers a sustainable bike and scooter renting service in urban areas to help reduce congestion, and smog and offer green alternatives to using a car!

Make sure to stop by to learn more about their vehicles and about the possible internships they can offer!



OUR NEWEST

SPONSORS!



This month we are thrilled to announce a new partnership this season with Broekhuis Groep, a family business with a long legacy of mobility excellence!



We are also excited to announce an exciting new partnership with Shell Netherlands, a global leader in solutions for green energy transitions and sustainable mobility!

WELCOME TO THE TEAM!

Help us race to **SUCCESS!**

gofundme



Help HAN Formula Student Team race to success!

HFS Racing is organising this fundraiser.

€2,010 Raised

We have started a GoFundMe to help us reach our goal!

We believe that the racetrack serves as a powerful testing ground for sustainable energy solutions and a platform to champion an inclusive energy transition. However, with this transition, comes a more expensive project. The aim of this GoFundMe is to aid us in our mission to compete in FSN 2024, with the help of friends, family, and people who sincerely believe in and want to support our project! Any help you can provide will go a long way in pushing us closer to our goal.

DONATE HERE!

THANKS FOR YOUR SUPPORT!