



AMZ News

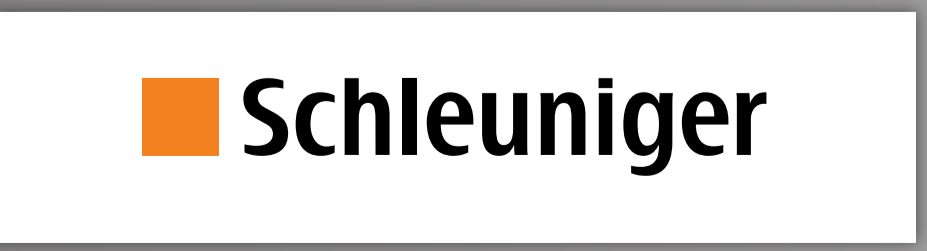
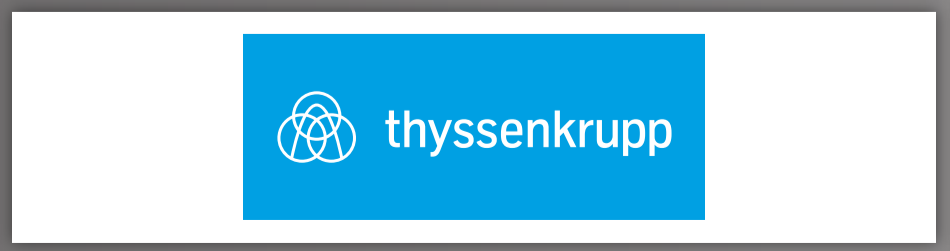
THE ROLLOUT



alvior before the unveiling

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Main Sponsors Electric und Driverless





alvier at the outdoor show

© Gian-Andrea Huonder

Testing

After an elongated winter break and recurring snowfall up until late April the *alvier* team was able to really start testing in the middle of April. Besides different commissioning tests for the brand new self-developed M10 motors and carbon rims the team was already able to perform some tests regarding the controls and suspension settings of *alvier*.

Rollout

On the 27th of May we were able to present our newest race cars, *alvier* and *pilatus driverless 2021* in the BMW Group Brand Experience Center in Dielsdorf. Because of the prevailing

Covid restrictions we sadly weren't able to invite all of our sponsors, families and friends and chose to do an hybrid event: A reduced live audience was able to attend physically and a professional live stream delivered the best possible AMZ Rollout experience for the interested people online.

We as a team were very proud to be able to present our last two year's work in front of such a big audience and share our passion for this project with them.

In the beginning of the rollout the electric car *alvier* and it's newest technical achievements were presented: *alvier* uses the lightest and fastest turning motors in AMZ history. The aforementioned motors are being controlled by in the 3rd generation self-

developed inverter which takes its energy from our self developed accumulator.

Not only *alvier's* drivetrain but also it's suspension inhabits entirely new concepts. An actively controlled adaptive ride height allows for optimal ground clearance in every situation to maximize the aerodynamic package's potential. As in previous years a rear wheel steering maximizes *alvier's* cornering speeds.

A presentation about the new driverless car *pilatus driverless 2021* followed as well as a short introduction of the team and the motivation of the people behind the curtains. It was followed by a short Q&A in the livestream where questions from the



The presentation was broadcasted live

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online audience were answered.

The final part of the rollout featured show runs from *pilatus driverless* as well as *alvier* in the parking lot of the BMW Group Brand Experience Center.

Outlook

Now up until the first event, Formula Student Netherlands from the 4th - 8th of July 2021, an intense testing season awaits *alvier* and its team where we will put the car through its paces. After FSN the team planned to compete in one

online, Formula Student Switzerland, and two events on site, Formula Student Austria and East, where they will have to prove themselves.

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pilatus driverless 2021 after the outdoor show

© AMZ

Testing

With our first competition, coming up in early August, we have merely two months left to ensure that *pilatus driverless* drives at its peak performance. This means that we are in the last stages of innovating our algorithms before our internally dubbed "fancy freeze", when we stop adding features and only optimize for reliability.

At the competitions, reliability will be the most important factor. A strict set of rules determines the procedure of each dynamic discipline at startup, during the run and after completion. Improper setups, exceeding of time limits, etc.

lead to DNF (Did Not Finish) or DQ (Disqualification). Each dynamic discipline allows only for less than a handful of tries. Thus, a well prepared and efficient scrutineering is important to maximize our number of attempts for the dynamic disciplines.

Since our testing season started in mid April, the driverless team has been continuously testing every weekend to evaluate the newly designed perception, estimation and control algorithms. Despite having success with longer range perception and an optimized race line tracking, using an improved low-level control interface, our testing team has been facing issues with the reliability

of *pilatus'* hardware systems.

Over the next weeks, it will be our utmost priority to pinpoint and fix the problems we discovered during testing.

Events

After Formula ATA postponed their competition from mid July to October due to uncertainties caused by the pandemic, we have decided to withdraw from the competition. This decision was not taken lightly, but this season's team will most likely disband with other primary commitments like internships and lectures in September, when the new semester starts. With the



The outdoor show took place at the parking space of the BMW Group Brand Experience Center © Gian-Andrea Huonder

withdrawal from Formula ATA, we are left with two prestigious Formula Student Driverless competitions to focus and look forward to: FS East in Hungary and FSG in Germany.

With two years of development time for all the driverless teams, we expect to have many new, strong competitors and we will need to keep pushing *pilatus* and ourselves to defend our position. Let the competitions come!

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