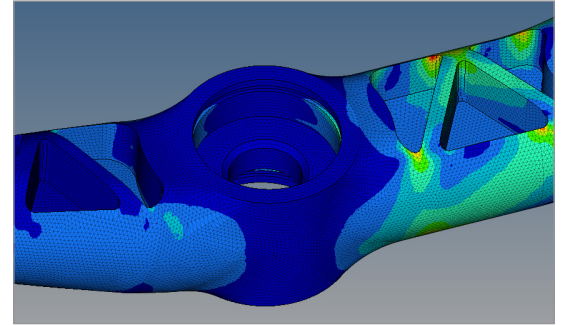


Bringing Motorsport to the People – Altair Startup Program Gives Griiip's Race-Car G1 and the G1 Series a Jump-start



When motorsport aficionados think about racing locations, Israel is probably not the first country that comes to mind. With the goal to change this, Griiip, an Israeli motorsport company, set out to make motorsport more popular in Israel and all over the world, outside the Formula 1 circuit. Griiip has designed a new, fast and professional race car that combines efficiency in racing with a competitive purchase price and low running costs, to make it more affordable. By harnessing the power of data, Griiip has created the first smart connected race car – the G1 – and with it, an entirely new racing series. The "G1 Series" is a single series only for Griiip's G1 race cars, where the emphasis is on the drivers, not on the cars, because they are all identical, built according to the same specifications.

Formula Student & Altair's Startup Program – the cradle for innovation

Griiip started out as a race car company, developing and building racing cars for entry-level racing categories. To develop its race cars, Griiip engineers employ several products from the Altair HyperWorks™ suite, among these Altair Radioss™ for crash simulation, Altair OptiStruct™ for structural optimization, general FE analysis as well as Altair HyperMesh™ and Altair HyperView™ for pre- and post-processing tasks. Deciding on Altair software was an easy choice, as the engineers on the Griiip team had already been using Altair HyperWorks when they were part of the Formula Student competition at the university level. Having grown from a student team into a startup company with 11 staff members, Griiip continues to rely on Altair products. Today, the company accesses the software via Altair's new Startup Program developed to help nurture companies like Griiip as they seek to grow their businesses. With solutions supporting early design stage concepts, product engineering, manufacturing feasibility, IoT, and cloud computing, Altair offers software and expertise to address the many challenges startups are facing throughout the evolution of their businesses.

HyperWorks goes to work – driving innovation with high-end engineering

High-end products such as race cars must endure harsh conditions, so the design has to be able to withstand a lot. The drivers take the cars to the extreme on the track, accelerating and braking sharply and making cornering maneuvers. As a racing car has to be very

Griiip

Industry

Automotive

Challenge

Racing Cars need to be both very strong and very light – all parts must be optimized for loads, stress, weight, and endurance

Altair Solution

Development of a faster, more efficient optimization process using Altair HyperWorks

Benefits

- Significantly shorter production time
- Reduced costs of racing
- Chance to explore new manufacturing methods

strong and at the same time very light, it is a very demanding product from an engineering perspective. Simulation software such as the Altair HyperWorks suite can provide many answers to the engineering challenges when developing a racing car, as the tools provide solutions to optimize the parts for loads, stress, weight, and endurance. "We optimize every part in the G1, every system in the car to be the best," said Tamir Plachinsky, CEO and Co-Founder of Griip. "The structural integrity and efficiency are critical for success in the races. Using Altair HyperWorks allows us to test a wide range of physics."

"While we previously had to manufacture parts and test them, we are now able to get to the final product faster, fitting it in the serial production of the cars."

Tamir Plachinsky, CEO and Co-Founder of Griip

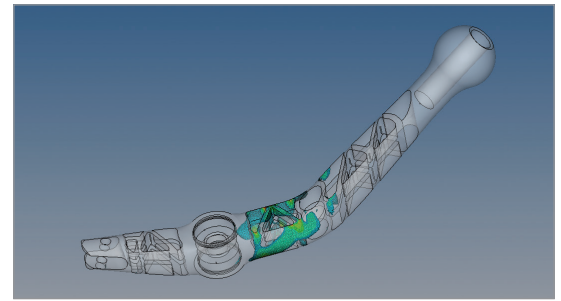
Griip uses simulation to reduce the development time and the many iterations needed before getting to the final product and each component. "For us, the use of simulation provides the ability to achieve a better product in a shorter time. While we previously had to manufacture parts and test them, we are now able to get to the final version of each component, fitting it in the serial production of the cars. We are also able to further improve the design after manufacturing the first cars, based on the experience we are gaining on the track. This is another area in which Altair products have proven to be very helpful," explains Tamir. "We have very good simulations and case studies on the improvement of the frame we built. By using Altair, we have managed to increase the frame stiffness and reduce the weight of it, only by changing the diameters of the tubes in the frame. We did not actually need to physically test the stiffness, but the performance on the track has indicated that it is really stiffer," he continues.

Sharing the experience: Griip provides access to the motorsport world

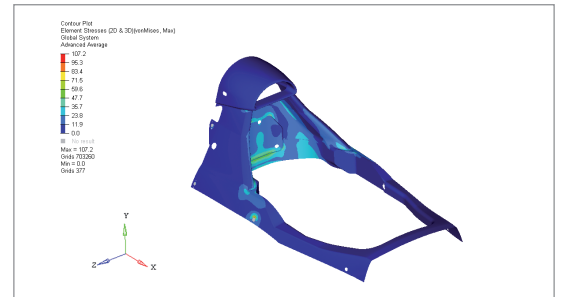
Griip is extending its business activities to Italy, where the cars are built, and is planning to expand its business further to the international market. While the company started with the design of race cars, Griip has now grown into a racing platform provider. The company delivers live video and data, prediction analysis, advanced insights, and mixed reality races to a platform, giving fans and drivers the most exciting destination to engage with motorsports. "Having understood that our users are not only the drivers, Griip is now also focusing on the viewers as our potential customers. To achieve this, we have developed a media platform that will create a new exciting race-viewing experience that no one has ever given you before," says Tamir. This way, in keeping with their motto "bringing motorsports back to the people" and combining innovation and passion, Griip opens up new, unprecedented possibilities for drivers and fans to connect with racing and the world of motorsports.

Innovation fostered by Altair

Implementing new technologies in the series enabled Griip to reduce the cost of racing and to create a new and exciting viewing experience. The new data related technology helps to collect, analyze, and distribute different data and allows, for example, the drivers to improve their skills and knowledge about the setup of the car without requiring an expert in the middle. The data is collected from the cars, analyzed, and provided to the drivers so they can compare it with data of other drivers in the series, thus improving their skills. Griip is considering expanding its usage of Altair's IoT and data mining solutions. Altair's solutions played a big part in Griip's successful realization of their innovative platform project – in fact, they are a key factor in the engineering process to reach the goals Griip set out itself. With its Startup Program, Altair helped the young, innovative company to get its feet quickly off the ground by supplying software and support. Today, Griip is using the CAE solutions available within the HyperWorks suite in almost every engineering area, and has even started to explore new manufacturing methods such as additive manufacturing technologies where dedicated Altair solutions can be employed to streamline production processes and further improve component design.



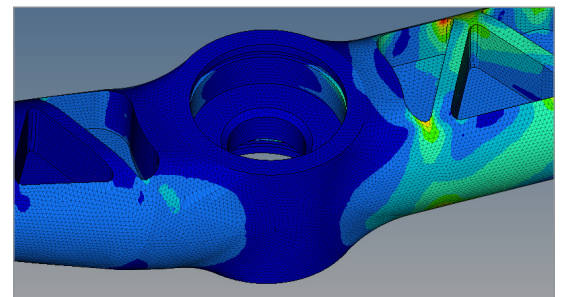
Altair HyperWorks provides many answers to engineering challenges when developing a racing car



Cockpit safety is one of the most crucial development goals



G1 series racing car



Altair OptiStruct is used for structural optimization of the suspension components

*All images are courtesy of
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