

GENELEC®

CASE STUDY

**Genelec helps
state-of-the-art
racing simulator shape
Finland's next F1 stars**

FINNISH SIMULATOR
BRINGS THE DRIVING
EXPERIENCE TO LIFE
WITH GENELEC'S
STUDIO LOUDSPEAKERS





**CAVE OY'S ANDY SYMONDS PARTNERS
WITH GENELEC** TO HELP YOUNG DRIVERS
RACE INTO THE FUTURE



In the world of [Formula 1](#), technology plays a pivotal role in performance, not just on the track but before drivers even touch the wheel. Racing simulators, equipped with cutting-edge audio-visual systems, are increasingly being used to mirror the intense atmosphere of race day. These simulators allow drivers to train in virtual environments that replicate every aspect of the racing experience, from the roar of the engines

to the track beneath the tyres. In Finland, experienced AV engineer Andy Symonds and his [CAVE Oy](#) company have taken this technology a step further by creating a one-of-a kind simulator facility aimed at nurturing the next generation of Finnish racing talent.

Symonds' simulators, located at CAVE's headquarters in Seinäjoki, are designed

” I KNEW GENELEC COULD DELIVER THE PRECISE, HIGH-QUALITY SOUND TO MAKE THIS SIMULATOR TRULY IMMERSIVE.

with a clear purpose in mind: to provide young drivers with an opportunity to train in an environment that closely replicates the real-world conditions of Formula and GT racing. To achieve this, Symonds relied on two key partners — [Genelec](#) and [Absen](#), a global leader in LED display technology. Together, these companies have helped Symonds create two simulators that immerse drivers in an experience as close to real-life as possible.

“The driver’s experience has to feel exactly like it would on a physical track,” Symonds explains. “When it comes to the visuals, whether you’re using LED or projection, it’s relatively straightforward to replicate the race environment. But the audio is just as critical, and that’s something that can often be overlooked.” To address the audio challenge, Symonds turned to Genelec, known for their industry-leading expertise in loudspeaker technology. “Genelec is a

premium Finnish audio manufacturer, and I wanted to work with a local company that shared my vision,” Symonds says. “I knew they could deliver the precise, high-quality sound needed to make this simulator truly immersive.”

The partnership with Genelec led to the creation of a charitable foundation, allowing young drivers in Finland, between the ages of 12 and 18, to access the simulators for free. In addition to the advanced technology, the facility provides access to data engineers and an experienced Formula 1 coach, offering participants a comprehensive training experience. “The idea was to create a development tool specifically for drivers, not just for car engineering — although we can do that too,” Symonds explains. “We’ve had the system up and running for over a year now, and already, we’ve helped a number of young drivers in their racing careers.”



” GLM ADDED ANOTHER LAYER OF REALISM TO THE EXPERIENCE. THE DRIVERS FEEL LIKE THEY’RE REALLY ON THE TRACK.

Central to the realism of the simulators is the AV setup. Symonds chose to equip the Aston Martin simulator with 10 Genelec [8340](#) studio loudspeakers and two [7360](#) subwoofers, while the Formula chassis simulator comprises five [8351](#) studio loudspeakers and one [7380](#) subwoofer. The driver is seated in front of a 180-degree, 7m diameter curved Absen LED screen, with the loudspeakers arranged in upper and lower 5.1 layers to create an immersive sound environment. “We needed the audio to be loud enough to feel like you’re in an actual race car,” Symonds says. “It has to be powerful enough to cut through the helmet and padding the driver wears, yet remain balanced and clear. That’s where Genelec’s expertise really came into play.

The sound system replicates a range of racing noises — from the low, rumbling growl of the engine to the high-pitched squeal of the tyres gripping the track. Every sound is finely

tuned to create the sensation of being on a real racing circuit. “The key was to make sure the audio was both loud and accurate, so the driver never feels like they’re in a simulation. In fact, some drivers have told me that they forgot they weren’t on a real track during the session,” Symonds laughs.

While Formula 1 teams have used simulators for years as engineering tools, Symonds’ facility stands out by focusing on driver development rather than just car optimisation. “Formula 1 teams use simulators primarily to test, design and refine car performance,” Symonds explains. “But here, we’ve created a tool that helps young drivers improve their knowledge of physical tracks, learn how to deal with challenges they might face during races, and enhance their driving skills in real-time situations.”

An important element of the audio system is Genelec’s [GLM](#) calibration software, which



allowed Symonds to fine-tune the sound with remarkable precision. “With just one click, we achieved the perfect balance. The software ensures that all acoustic issues are minimised, and the sound remains consistent,” Symonds says. “This technology added another layer of realism to the experience. The drivers feel like they’re really on the track, and the feedback has been overwhelmingly positive.”

Symonds’ racing facility represents a significant advancement in motorsport training. By shifting the focus to driver development, rather than car performance, Symonds has created a unique environment where young Finnish drivers can hone their skills and prepare for the challenges of competitive racing. With the support of world-class partners like Genelec, the simulators are already helping to shape the future stars of Formula 1, giving them a head start on the track before they even set foot in the real car.



THE KIT

- 10 x 8340A
- 2 x 7360A
- 5 x 8351B
- 1 x 7380A
- 2 x GLM Calibration Kits

GENELEC OY OLVIETIE 5 | 74100 | IISALMI, FINLAND | TEL. +358 17 83881 | GENELEC@GENELEC.COM | WWW.GENELEC.COM